

The Indian Ocean Region

A Strategic Net Assessment

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Request for comments:

This report is a draft that will be turned into an electronic book. Comments and suggested changes would be greatly appreciated. Please send any comments to Anthony H. Cordesman, Arleigh A. Burke Chair in Strategy, at acordesman@gmail.com.

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Executive Summary

This study examines the key strategic risks that shape the stability and security of the Indian Ocean Region or IOR. This means examining risks that cut across a vast span of territory that directly affects both the global economy and some 32 nations – some within the limits of the Indian Ocean, but others that play a critical role in shaping the security of the nations in the IOR region and the security of its sea lanes and petroleum exports.

All of these countries in the IOR are developing countries, but their level of development – as well as their level of stability and security – varies radically even within a given Subregion. There is no simple way to characterize opportunity and risk. In some cases, civil conflict drives national behavior and interaction with neighboring states, in others it is the risk of local military conflicts, and in a few, the risk of broader regional conflicts.

The IOR is also one of the, most complex regions in the world in human terms. It includes a wide variety of different races, cultures and religions. The level of political stability, the quality of governance, demographic pressures, ethnic and sectarian tensions, and the pace of economic growth create a different mix of opportunity and risk in each state – sometimes affecting mid and long-term development, and sometimes creating near terms problems in stability that have not triggered internal or civil conflict.

This complexity places important limits on any risk assessment. It cannot cover every country and every risk in depth. Accordingly, this assessment focuses first on the broader strategic risks that affect the security of the entire region, have a major impact on world politics, or affect the global economy. It then focuses on the fact that the IOR has groups of states that share many of the same characteristics and face similar challenges. Accordingly the analysis divides the Indian Ocean Region (IOR) region into five Subregions, and assesses the key risks and trends within each Subregion.

- Middle East and Gulf
- Red Sea and Horn
- East Africa and Sub-Saharan
- South Asia
- Southeast Asia/Oceania

In the process of examining each Subregion, the study focuses on those countries that present exceptional risk because of their impact on other states and the global economy, and the risk of serious civil war or conflict with other states than can have a regional impact. In many cases, national trends have only limited impact on the outside world and limited strategic importance. They may affect trade and investment issues in a given country, involve local conflicts and humanitarian concerns, but they have limited impact on the global economy, concerns of major power, and even the security and stability of neighboring states.

In other cases, however, the risks and opportunities within a given Subregion have major strategic impact, and this is the focus of this analysis. This is particularly true of three different sets of nations with the IOR, and this study uses both a new quantitative risks model developed by Abdullah Toukan and more conventional methods of strategic analysis to focus on these issues.

The Strategic Impact of the IOR

The net assessment also focuses on three critical strategic that issues cut across the IOR and have a global impact:

- The stability and security of Gulf petroleum exports.
- The special risks create by the possibility of a future conflict involving India, which may be emerging as a major global power, and the risk of a nuclear conflict involving India and Pakistan,
- The overall security of maritime traffic and commerce through the entire region, and the impact of possible shifts in the strategic role of US and Chinese air and sea forces in the IOR.

In the Western part of the IOR, the Arab Gulf states and Iran shape much of the world's petroleum exports and play a critical role in the global economy. While many other areas in the Indian Ocean have strategic importance – and a fuller list is provided in the introduction to this study – petroleum exports through the India Ocean to Asia, through the Red Sea and Suez Canal, and around the Horn are the area where the IOR has the greatest single impact on the global economy and the world.

The Gulf is also currently the area that poses the highest risk of a serious military conflict. The negotiations between the P5+1 may have reduced the nuclear aspect of this conflict – although this may take several years to fully verify and determine. It has not yet affected the broad regional competition for influence between Iran and Arabs states, the risk of asymmetric war in the Gulf, a major conventional arms race, and Iran's build-up of major ballistic missile forces.

In the center of the IOR, India is so large state that its emerging role has great strategic and economic importance, but so does the risk of another conflict between India and Pakistan – both now nuclear-armed states. This risk is assessed as low to moderate. Both nations have established a relatively high level of mutual deterrence and have little to gain from any form of future conflict. At the same time, both states still confront each other, keep increasing their inventories of nuclear weapons and now deploy them at the tactical level, terrorism is a serious threat, and the history of war is not the history of carefully calculated actions and risk assessments.

Finally, the overall stability of the flow of shipping and maritime traffic throughout the IOR impacts on importers and exporter on global basis, affects the flow of petroleum exports. The main risk to this stability is currently piracy and maritime crime. In the west, it is concentrated around Somalia and to the east around the Strait of Malacca and Indonesia. Piracy is presently a low but continuing risk, and one a major importance to shippers. It does, however, have a particularly critical impact on key East Asian trading states like China, Japan, and South Korea.

A more serious risk may be emerging. At present, US sea and air power, and partnerships with a variety of regional states, plays a major role in securing Gulf oil exports and the security of maritime traffic throughout the region. The US is now committed to a strategy that gives the Middle East and Asia high priority, but some question whether it will remain committed in the future as US energy import needs diminish. This risk currently seems limited, but cannot be dismissed

The other risk is a potential shift in air-sea power as China acquires a major blue water navy and the potential ability to project air and missile power throughout the IOR. Asia has already replaced the West as the key energy importer and source of maritime trade across the IOR, and China will steadily increase its volume of imports and import dependence over time. Given the tensions

between China and the US and other states in the Pacific, this raises the question of whether China and the US will compete or cooperate in the IOR. Particularly how their actions could interact with the role of the states in the IOR, affect a key chokepoint like the strait of Malacca, and tie the IOR to regional tensions over the South China sea and the much broader areas involved China's claims to maritime and air rights in the entire Pacific. This is not currently more than a possible area of future risk, but its strategic importance is too great to ignore.

The Gulf and Energy Exports

The extent to which Iran and the Arab Gulf states can produce and move oil, gas, and product by sea or pipeline has a massive impact on the economy of virtually every developed and trading state and increasingly on the developed and more advanced economies in nations of Asia – whose exports, in turn affect the security and stability of the economy of virtually every other developed state.

This analysis shows that several of the states in the Gulf – or that affect the flow of petroleum within the Gulf and Middle East Subregion -- involved suffer from serious internal instability and the risk of civil conflict. Egypt is a key case in point because of its role in establishing the security of the Suez Canal and SUMED pipeline, but Bahrain, Iraq, Syria, and Yemen – and to a lesser degree Iran – all present significant national risks.

More broadly, the struggle between the Arab Gulf states and Iran, and the role the US plays in ensuring the security and stability of the Gulf, presents major ongoing risks that will not be resolved by the current negotiations between Iran and the P5+1 even if these negotiations are fully successful.

At present the arms race in the Gulf; Iran's broader struggle for influence over Iraq, Syria, and Lebanon; and the growing tensions and conflicts between /Sunnis and Shi'ites/Alawites seem containable and the level of deterrence of any serious conflict seems relatively high. The Gulf Subregion still is, however, poses the most serious near-term strategic risk in the IOR.

India and the Prospects for an India-Pakistan Conflict

The strategic impact of the South Asia Subregion is dominated by the potential emergence of India as major economic power, by the risk of another India-Pakistan conflict, and by the degree of competition between India and China. Its overall impact on the security and stability of the IOR is confined largely to the immediate sub-region region. There is no immediate threat to world maritime traffic or the flow of petroleum.

The extent to which India does or does not emerge as a growing and developing economy has a vast human impact, but also affects the balance of power in all of Asia, the relative role of China as a world power, and the extent to which South Asia emerges as a major trading bloc.

This study concludes that the internal pressures in India still sharply limit the probability it will emerge as a major part of the global economy and major military power at anything like rate and level of China. This is a possibility, but not a probability. India imposes too many limits on its own development.

At the same time, the tensions between India and Pakistan have led to several major conflicts and now involve substantial inventories of nuclear-armed missiles and aircraft. A major nuclear conflict between the two is unlikely, and its strategic impact on states outside of South Asia would

be relatively limited, but it would be a human disaster of exceptional proportions and set a possible for future nuclear arms races and conflicts.

Piracy and the Security of IOR Sea Lanes and Chokepoints

The overall security of maritime traffic throughout the region is another key strategic priority to the nations outside the IOR, and to the major trading nations and exporters within it. The IOR is becoming a steadily more important mix of sea-lanes in both regional and global terms as illustrated by **Figure 1**.

Figure 0-1: Indian Ocean Shipping Lanes



Source: George Webster, "Maps Show Human Impact on Earth," CNN, October 28, 2011.
<http://www.cnn.com/2011/10/28/tech/world-population-boom/>

The most immediate near-term threat to the secure flow of shipping is piracy; a threat currently concentrated in the actions of Somali pirates in the west, and broader range of pirates and maritime criminals in the Strait of Malacca and Indonesia. This threat currently seems to be contained in both areas, although maritime crime in Indonesia presents serious problems and Somali piracy has not been ended.

The key question is whether broader threats will emerge because of the competition between Asia powers over maritime rights in the Pacific, and for strategic influence over the Strait of Malacca, tensions between the US and China, the possible expansion of piracy or threats to maritime traffic because of instability in Yemen and other Red Sea states, and internal tensions within Egypt that could lead to attacks on shipping in the Suez Canal area. The near term probability of such threats becoming major problems seems limited, but they may emerge as far more serious issues in the mid-to-long term.

The US, China, the IOR, and the Gulf

There is no meaningful region-wide IOR military balance; there are only military balances that relate to given Subregions and given IOR countries. Many of these are balances highly localized and focus almost exclusively on border disputes and territorial issues. Others play a major role in given Subregions like the tensions between Iran and the Arab-Gulf states and India, but do not affect the IOR as whole. Internal security considerations are largely national, although piracy, international extremism and terrorism pose growing risks to many states in the region.

In some cases, a local threat or security problem comes from countries outside the IOR, or crosses the line between sub-regions. India, for example faces major challenges from China and not simply from Pakistan, the instability in Yemen affects both Saudi Arabia and Oman, and the overall stability of the Southern Red Sea states affects both the security of the Suez Canal and Sumed pipeline and Saudi ports and ability to export from its pipelines to the Red Sea.

At the same time, the overall security of the IOR is shaped by the air-sea balances that affect the overall flow of trade and petroleum – and these will be dominated in most cases by the level of US power projection from outside the IOR. The key test of region-wide power in the IOR is whether a state has enough sea and air power to actually threaten maritime and air movements much beyond its own air space and maritime perimeter.

In most cases, national air and naval forces cannot project power for any sustained distance in the face of more than the most token opposition. The exception is those cases where a smaller IOR power could significantly affect the regional or Subregional flow of air traffic and shipping on a much broader basis – usually by threatening a key maritime chokepoint.

The US is now the dominant outside power in the Gulf and Middle East backed by limited support from Britain and France. The US is also the dominant power in projecting air-sea forces into the Indian Ocean from the East. At the same time, the analysis of energy flows in the net assessment shows that the US future military role in the region may be affected by major reductions in US energy import dependence.

Moreover, China and the Asian powers are now heavily dependent on Gulf oil exports and supplies from the IOR, and this dependence is projected to increase sharply over the next few decades. China is also become a modern blue water navy, improving its ability to project air and missile power, and is playing a growing role in the Indian Ocean. It may become a competitor to the US and India. Energy import dependence may also affect the role of Japan and South Korea – which are even more dependent than China – but both currently have limited power projection capability beyond the Strait of Malacca.

Much depends on whether the United States will continue to use its forces to maintain stability in the IOR, and whether it sees its growing domestic energy output as reducing its need for strategic involvement in the Gulf and IOR. This analysis shows that the US remains committed to the defense of the Gulf and maintaining a major presence in the Indian Ocean region. There has been considerable confusion over the level of US commitment because of speeches referring to a “pivot to Asia,” US and P5+1 negotiation with Iran, claims of US energy independence, and the impact of sequestration and US defense budget cuts.

The new US strategic guidance issued in January 2012 did, however, give the same priority to the Middle East as to the “rebalancing to Asia” – the phrase used in all US strategic documents and budget requests and one that refers to a 5-10% shift in US forces away from NATO Europe

and to the US west coast and Pacific. This has been regularly reaffirmed in US budget guidance through FY2014, by USCENTCOM commanders, and by Secretary of Defense Hagel in his speech to the Manama Dialog in Bahrain during a trip to the Gulf in December 2013.¹

Secretary Hagel made it clear that the US negotiations with Iran were part of long standing P5+1 effort to halt Iran's nuclear weapons programs. He said the US was involved in 6 month process to see if it could work through its differences with Iran and that it was his opinion that this represented a wise opportunity to probe in great detail the possibilities to see if Iran was serious about following through on its commitments in the nuclear area.

Secretary Hagel and US other officials noted that the US had stepped up its partnering and exercise activity with the Gulf States, and that moving US aircraft and ships to the West Coast and Pacific meant they could be used in the IOR and Gulf as well as the Pacific and reduced US dependence on the Suez Canal. They also noted that France and the UK had strengthened their exercise and partnership activities as well.

More tangibly, the US increased its forces in the Gulf in 2013, rather than cut them. It also is transferring over \$70 billion worth of arms to Arab Gulf and neighboring Arab states. The US can rapidly deploy massive amounts of air and cruise missile power, can base B-2 stealth bombers forward in areas like Diego Garcia, is upgrading much of its tactical airpower to F-35 stealth strike fighters, is introducing the Littoral Combat Ship to deal with threats like Iran, offered THAAD anti-missile defenses to states like Qatar and the UAE, and Secretary Clinton had offered the same "extended deterrence" guarantees to the Gulf states that the US had once offered to Europe during the Cold War – an offer that remains on the table.

Other Key Trends Affecting the Entire IOR

There is no easy way to summarize the other national and strategic trends in the IOR. Chapter I does, however, provide an overview of the risks in governance and economics using a new Country Risk Assessment Model developed by Dr. Abdullah Toukan, a coauthor of this study. One of the key conclusions of this model, however, is the need to assess all of the key internal risks by country. While given Subregions do share many common values, it is all too clear that neighboring states can present radically different levels of risk in very different areas. In fact, a second key conclusion is the need to explore the full range of risk in depth and accept the complexity of doing so.

A third conclusion can be drawn from the population data in Chapter II, and the discussion of the individual countries in each Subregion that follows. Demographic pressures from massive past population growth put a high degree of stress on the governance and economies of most regional states. The region is filled with countries with very young populations, and with the exception of a few Gulf and Southeast Asia states, these present major challenges in terms of education, job creation, and infrastructure.

There are important limitations in the ability to accurately estimate the scale of these challenges. Few countries report unemployment by age group and none report disguised unemployment – jobs which have no productive output or where more than one individual is doing a job that one person could perform. Measurements of poverty levels also do not reflect age, and are set so low that people well above the poverty level can be deeply dissatisfied with their lives. In many countries – even including some of the "wealthy" Gulf oil states -- this present serious problem in terms of being able to marry or acquire housing.

Other demographic factors affect many countries. A larger population of older citizens presents different problems in terms of employment and income, and further increases the high dependency ratio caused by large numbers of children. Urbanization has reached far higher levels than the data on most countries reflect, with large numbers of rural poor living in the equivalent of slums. It has also deeply disturbed the previous social structure and traditional safety net, and often pushed different religious, sectarian, and ethnic groups into new mixes – sometimes with serious fault lines.

Chapter I and the chapter that follow make it all too clear that governance is often weak and corrupt, and at the crisis point in many critical areas in far too many states. This compounds the problems caused by young populations and the resulting “youth bulge,” as well as the problems in adjusting to rapid social change and urbanization. The combination of poor governance and poor economic opportunity are often a key problem causing the alienation of young men, and most of the political structures in the region suppress peaceful opposition and dissent, make compromise and change more difficult, and add to this alienation.

As Chapter I and the following chapters on each Subregion show, the interactions between weak governance and poor economic policies creates additional problems. Most governments in the region create serious barriers in terms of doing business and economic growth. State sectors are generally mismanaged, and many countries are deeply corrupt and pursue a form of crony capitalism that leads to poor distribution of wealth and often serious economic pressures on the middle class. As Chapter II shows, gender inequality and the failure to fully integrate women into the political structure and economy adds to these problems, not simply as a human rights problem, but because it sharply restricts the productivity gain within the labor force and economy as a whole.

There are – as this study shows – notable exceptions to these problems. There are also many countries that do show progress in a number of areas, and some that are breaking out of the problems and traps of the past. The fact remains, however, that in far too many other countries, a combination of these problems, deep internal tensions and conflicts, tensions and the risk of war with neighboring states, combine to create serious cumulative risks. Risks of the kind that have helped lead to explosive political upheavals and sometimes civil conflict.

The key challenges of this kind that the IOR countries face include:

- Political Stability and Non Violence
- Economic Stability
- National Governance
- Unemployment in General
- Youth Unemployment (ILO definition 15-24 years of age)
- Education
- Health
- Poverty

The priorities and weights of these key challenges vary from country to country and from Subregion to Subregion. **Figure 2**, however, provides one illustration of the scale of such problems. It warns of the cumulative seriousness of such problems in many countries, and even entire Subregions.

The more detailed models of the key trends that emerge from the Country Risk Assessment of main Indices of risk, which focus on the changes in Country Rank between 2010 and 2013, largely confirm the spread of risks shown in this Figure. In broad terms, the countries in the Southern Gulf show the most performance improvements. Three other countries in the South East Asia Subregion -- Singapore, Indonesia and Malaysia -- also show consistent improvements in the Indices analyzed. Unless other states make major improvement in their level of governance, security, and economic policies, these states are likely to remain the main contributors to the IOR Economic and Financial development in the decades to come.

Figure 2: World Bank Country Governance (Rank) versus World Bank Ease of Doing Business Report (Rank) at the Country Level

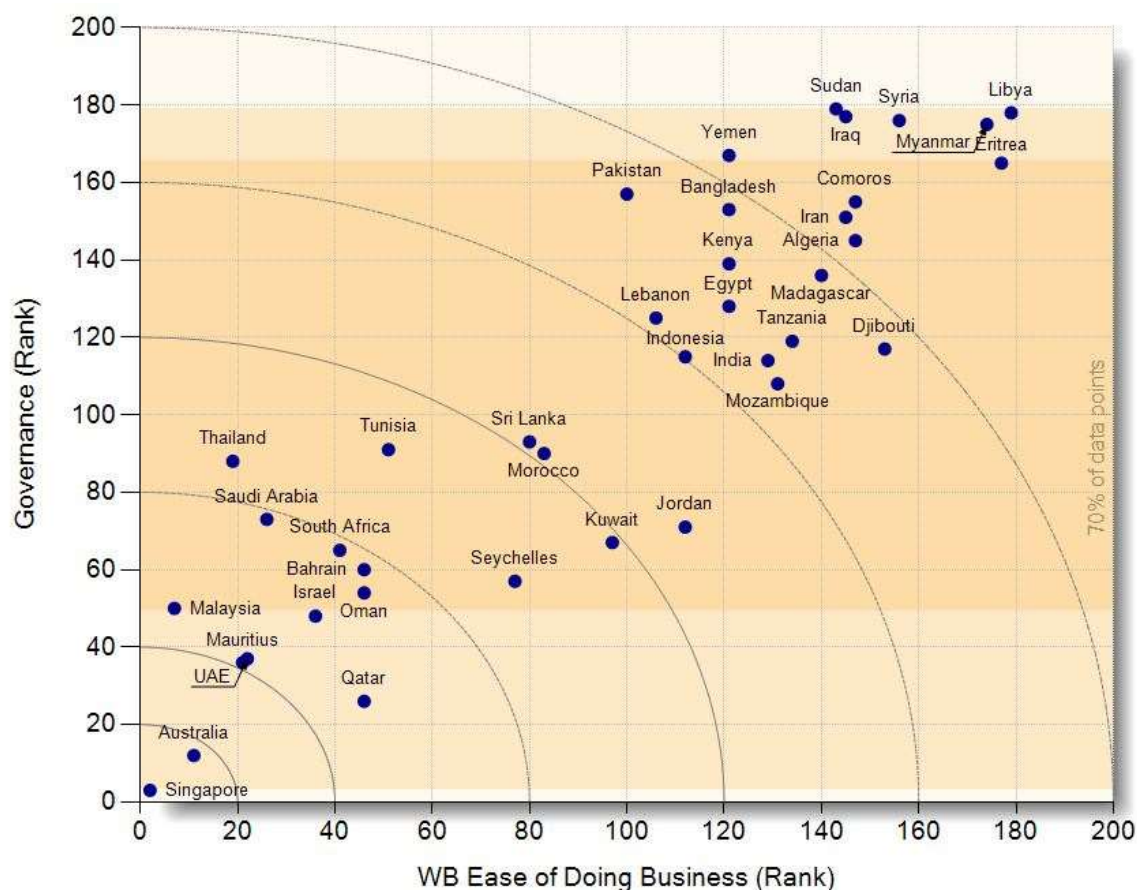


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I. INTRODUCTION

Any effort to provide a strategic assessment of the Indian Ocean Region (IOR) presents major serious challenges in terms of its sheer scope. The region is so large that it presents major problems simply in terms of defining what areas and countries are to be included.

It is so diverse, that even describing its Subregions – much less the impact of each state – is a major challenge. At the same time, there are key areas of focus that highlight both opportunities and risks in terms of both Asian and Global interests. This study attempts to highlight these key areas of interest and to put them in the context of the key indicators that shape the opportunities and risks in each country.

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Defining the Region

The Indian Ocean Region covers a vast area, roughly 5.5 times the area of the United States. . While sources differ over how to define it and its size, the CIA *World Factbook* states that the Indian Ocean is the third largest of the world's five oceans (after the Pacific Ocean and Atlantic Ocean, but larger than the Southern Ocean and Arctic Ocean). ²

The CIA estimates that the Indian Ocean covers 68.556 million square kilometers and includes the Andaman Sea, Arabian Sea, Bay of Bengal, Flores Sea, Great Australian Bight, Gulf of Aden, Gulf of Oman, Java Sea, Mozambique Channel, Persian Gulf, Red Sea, Savu Sea, Strait of Malacca, Timor Sea, and other tributary water bodies.³ It also has major ports at Chennai (Madras, India), Colombo (Sri Lanka), Durban (South Africa), Jakarta (Indonesia), Kolkata (Calcutta, India), Melbourne (Australia), Mumbai (Bombay, India), and Richards Bay (South Africa).

While the nations in the IOR often have little in common and minimal interactions, **Figure I.1** shows that the Indian Ocean is one of the world key lines of communication, not only within the region but between East and West. It is also the region through which the Gulf nations export their oil -- making it both a critical global trade route and the source of more than 20% of the world petroleum exports.

Figure I.1: The Role of the Indian Ocean in Global Sea Trade



Source: Globaia.org <http://globaia.org/portfolio/cartography-of-the-anthropocene/>

Subregion by Subregion and Country by Country

The 32 nations in the definition of the region used in this study have some 66,526 kilometers of coastline. The IOR is normally defined as including the Arab Gulf, East Africa, South Asia, East Asia to the Straits of Malacca, the Southern Ocean, Asia, and Australia. Aside from the fact that all of these state are developing nations, they have little in common in terms of their level of development, political systems, security status, civil societies, cultural values, and religion. This study, however, also includes Egypt and the Red Sea nations.

Many countries in this region also share a legacy of colonialism, an era that affected the IOR via “a significant degree of conflict for control of resources and territory from the European colonial powers.”⁴ This historical reality shaped the political and economic structures of many IOR states up until the end of WWII. From 1945 till the early 1990s the Cold War and the rise of national independence movements were the dominant political force in large swaths of the IOR, resulting in very uneven development.

These states do, however, group loosely into five Subregions that have some common characteristics and interests that are shown in **Figure I.2**. These five Subregions include:

- Middle East and Gulf
- Red Sea and Horn
- East Africa and Sub-Sahara
- South Asia
- Southeast Asia/Oceania

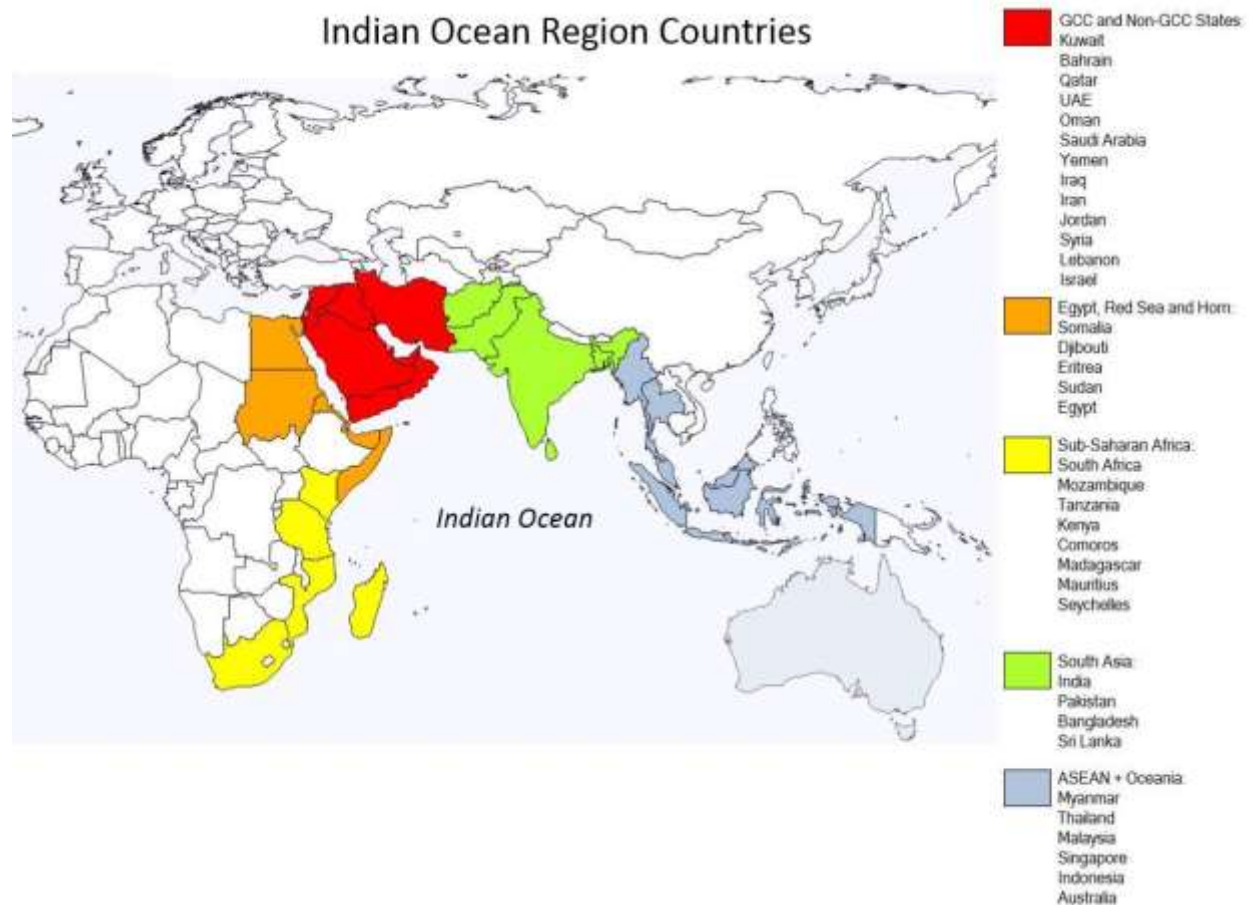
At the same time, it is important to remember, however, how large its geography can be even within a given Subregion. Even by air and the shortest direct path, it is 2,920 kilometers from Nairobi in Kenya to Johannesburg, South Africa; and 10,660 kilometers from Johannesburg to Darwin in Australia. It is 11,440 kilometers from Suez City to Darwin and 8,770 kilometers from Darwin to Muscat in Oman. It is 5,460 kilometers from Muscat to Singapore, and 4,713 kilometers from Singapore to Karachi, and 1,852 kilometers from Karachi to Chennai in India.

The list of countries in **Figure I.2** is also a warning that many aspects of the opportunities and risks in the IOR must be approached on a country-by-country basis. There are some elements of unity within the Gulf Cooperation Council states and among oil exporters, but the differences between Iran the GCC states, and Iraq are not only striking in virtually every sense, but create the reality that the major risks are highly localized and have only limited dependence on the IOR vs., the Gulf area.

Every aspect of culture, religion, the security situation, investment and trade opportunities, and the pace of development can change by crossing a single border. Moreover, while experts have talked about regional cooperation for decades, groupings like the Gulf Cooperation Council represent a rare and still limited anomaly. Real regional cooperation in in the Middle East as a whole, in the Red Sea area and the Horn, in Sub-Saharan Africa, in South Asia, and in ASEAN and Oceania, is at best an occasional diplomatic fiction.

The strategic issues that shape the behaviors of many states also cross the lines within Subregions. Yemen is a state linked to Saudi and Omani security by a common border and a key player in the security of the Red sea and the Horn. Jordan is not in the Gulf, but plays a key role in helping to shape Gulf security and stability. India is a key player in south Asia, but also competes with China.

Figure I.2: Subregions and Countries in the Indian Ocean (IOR) Region



Strategic Interests and Risks

This list of Subregions and countries is so long, that any assessment of the IOR must put its primary focus on the key strategic issues that dominate the importance of the IOR. There are three critical strategic issues cut across the entire IOR and have a global impact:

- The stability and security of Gulf petroleum exports.
- The special risks created by the possibility of a future conflict involving India, which may be emerging as a major global power, and the risk of a nuclear conflict involving India and Pakistan,
- The overall security of maritime traffic and commerce through the entire region.

The other key strategic interests that East Asian states, Europe, the United State, and other outside Powers have in the IOR region do, however, have Subregional and national impacts as well. They include encouraging the stability and development of each states and their role as a trading partner and investment opportunities, and a focus on the role IOR states as sources of key materials that affect given importing economies. At the same time, states inside and outside the region have a common interest in avoiding and limiting local conflicts, transnational disputes, and extremism and terrorism. As a result, much of an assessment of the IOR must consist of nation-by-nation assessments.

Regional Contested Spaces

Due to the growing criticality of the region for economic and geo-strategic reasons, major powers have a growing interest in partnerships with IOR countries. This has formed a series of basing agreements between IOR countries and the Chinese, US, and Indian militaries. A major question of this big-power involvement in the region is its effect on stability. In a study by the *Australia India Institute* in 2013, this dynamic is described in some detail.⁵

The IOR has had a long history of extra-regional influence and perhaps it could be argued that some of the many remaining legacies of this, which are evident around the region, are potential sources of stability. Apart from Indian Ocean states, all major industrial powers and energy suppliers have an innate interest in Indian Ocean security and stability.

An important question is the extent to which any extra-regional security presence, while aiming to guarantee regional as well as its own security interests, is also perceived by other states as a source of insecurity. From this perspective, regional and external states are seen to be in a process of competition for influence and resources⁷⁶. However, it should be recognised and accepted that the United States and China, as well as other extra-regional states, have legitimate regional security interests.

Figure I.3: Chinese, US, and Indian Basing Locations in the IOR

Chinese pearls	USA diamonds	Indian nuggets
Bangladesh	Australia	Andaman Islands
Burma	Bahrain	Mauritius
Pakistan	Diego Garcia	Maldives
Sri Lanka	Djibouti	
	Egypt	
	Indonesia	
	Kenya	
	Kuwait	
	Oman	
	Qatar	
	Singapore	
	UAE	

Source: http://www.aii.unimelb.edu.au/sites/default/files/IOTF_0.pdf.

If we consider the IOR as an overall ‘arena of competing influence’, then it is instructive to locate a significant United States and Chinese presence and add to this the regional presence of India. We end up with an interesting geographical distribution of Chinese ‘pearls’, USA ‘diamonds’ and Indian ‘nuggets’, principally reflecting concerns over energy security and secure access to SLOCs (Figure 11).

For the sake of the present discussion and putting aside the veracity of arguments in favour of a ‘string of pearls’ strategy, China has nonetheless some presence in four northern Indian Ocean rim locations – Chittagong in Bangladesh, Gwadar in Pakistan, Hambantota in Sri Lanka and Sittwe in Burma⁷⁸. Furthermore, according to the US Department of Defense Base Structure Report⁷⁹, the United States has some presence in 12 Indian Ocean locations – the centrally-located Diego Garcia, five in the Persian Gulf (Bahrain, Kuwait, Oman, Qatar and UAE), three in Africa (Egypt, Djibouti and Kenya) and a further three on the eastern rim (Australia, Indonesia and Singapore). If we add to these India’s presence in the Andaman Islands, Mauritius and Maldives⁸⁰, we are left with a number of what might be called ‘contested spaces’ – that is, they remain competitive arenas which have yet to be incorporated into the influence of powerful external states. These include the failed states of Somalia and Yemen and much of Oceanic Africa.

Major Strategic Issues and Risks

The full range of the strategic issues and risks this assessment addresses includes:

- *The instability of the Gulf petroleum exporting states* – such as the risk of a new civil war in Iraq or risks posed by the arms race between Iran and the US and its allies in the GCC states – a risk that can include a future nuclear arms race.
- Some form of military clash that would affect the flow of petroleum to the east through the Straits of Malacca.
- *An India-Pakistani conflict* that could include a serious air-sea conflict or even escalation to nuclear warfare. India and Pakistan continue to go through their ritual cycle of moves towards peace and clashes over Kashmir and terrorism, or competition over their naval strength in the IOR, influence in Afghanistan and a host of other issues. The risk of a new India-Pakistan conflict is limited but real, and one of the few regional conflicts that could escalate to the use of nuclear weapons or a serious naval conflict. It seems unlikely that such conflicts would have a major impact outside the two countries or at sea, and that they would have an extended length, but these are possibilities.
- *Conflict and tensions between India and China* regional rivals to the north of the IOR and low level clashes still occur sporadically in the Sino-Indian border area. It is hard to see why such border tensions should escalate to a serious conflict, or why they should have an impact in the Indian Ocean Area, but China is steadily increasing its naval activity in the IOR and has played a major role in upgrading Pakistan's port at Gwadar.
- *Struggles for influence between the US and China.* The US and China still have to determine their future balance between cooperation and competition, and the risk of some long-term clash or confrontation remains real in the IOR as well as in the Pacific. China is steadily expanding its navy to give it great power projection capability and increase their presence in the Indian Ocean. China's Navy has sought to participate in military exercises in the Persian Gulf and the "rebalancing" of US naval and air forces from Europe to Asia has increased the US strategic partnership with Australia.
- *The limited naval-air build up in various parts of the rest of the region.* A naval conflict in the Gulf could extend to the Gulf of Oman and Arabian Sea. Clashes between navies on the eastern side of the Indian Ocean could affect traffic through the Strait of Malacca, although this currently seems unlikely.
- *The risk of piracy.* The level of piracy has been cut sharply by the deployment of an international task force to deal with piracy near Somalia and in the areas in the Indian Ocean near the entrance to the Red Sea. Piracy does, however, still exist near Somalia and could spread to Yemen if that state's instability led to a civil war. It continues to be a low level threat in the Strait of Malacca. The CIA currently assesses this threat to the IOR as follows:

“...although the number of reported incidents of piracy have dropped dramatically in 2012, the International Maritime Bureau continues to report the territorial waters of littoral states and offshore waters as high risk for piracy and armed robbery against ships, particularly in the Gulf of Aden, along the east coast of Africa, the Bay of Bengal, and the Strait of Malacca; the presence of several naval task forces in the Gulf of Aden and additional anti-piracy measures on the part of ship operators, including the use of on-board armed security teams, have reduced incidents of piracy; in response, Somali-based pirates, using hijacked fishing trawlers as "mother ships" to extend their range, shifted operations as far south as the Mozambique Channel, eastward to the vicinity of the Maldives, and northeastward to the Strait of Hormuz

- *The risk of Terrorism.* Terrorism is difficult to quantify, but the US State Department ranked Afghanistan, Pakistan, and Iraq as three of the top ten countries in terms of terrorism activity in 2012. There seems to be little near term prospect that the level of terrorist violence will drop significantly in any of these three countries.
- *The struggle for the future of Islam and to reshape the balance between religious and secular rule.* The growing mix of political and economic unrest in many states in the region intersects with a struggle for the future of Islam between extremist and moderates and between Islamic sects that affects every country with

a significant Muslim population. Other ethnic, sectarian, tribal and regional struggles also added to the potential threat in many countries where Islamic violence is not a critical factor, but have not yet become serious sources of international terrorism.

- *Endemic Transnational and maritime disputes and potential conflicts.* There are many relatively low-level border, territorial, and maritime disputes between various IOR states. Even if they become violent, most will only affect limited numbers of local outside trading and investment activities. There are, however, three areas where competition or conflict may become more serious.
- *Offshore resource disputes.* The discovery truly massive offshore resource in terms of petroleum or undersea mining is a final wild card in the process.

The Country Risk Assessment Model

States in the IOR region have made every attempt to enhance their security, minimize their Risks with little regard to the extent to which these efforts have undermined the Risks of their neighboring countries and to the Subregions. This has been unfortunate since short-term risk and security requirements could be met in this fashion, in the long-term these policies proved self-defeating. So states whose security and risk levels was negatively affected by their neighbors' security enhancing and risk mitigation measures took steps to diminish the perceived threat, In turn, these counter-steps sometimes reduced the security and enhanced the risk levels of the state whose enhancing efforts began the chain reaction.

This points to the main dilemma of "Threat Perceptions and Security Concerns"; is how states might enhance their security and lower their risks without diminishing the Security, and increasing the Risks, of their neighbors, the Subregion and the region as a whole. Addressing this dilemma the assessment explores each of these issues, but also address key national issues as well. It divides the assessment of security into two fundamental components:

Basic Security: Dealing with such issues as the country institutions, governance, macroeconomic stability, infrastructure, health, and primary education. These are the essential elements that provide "human security" to the national of any country.

Current Security: Dealing with current geopolitical affairs, such as the current threat of Iran to the Security of the Arabian Gulf, United States extended deterrence in the Arabian Gulf, the Civil war in Syria.

As a result, it uses a Country Risk model to show how these risks (Basic versus Current Security Risks) interact with and influence each other.

In general, Country Performance and Risk Assessment would include the analysis of the six sectors: Economy, Finance, Governance, Societal, Environment, and Technology. These six sectors constitute the fundamental data, indicators and Indices representing Basic Security.

The Country Risk Assessment Model used in the study focuses on three key areas: The quality of Governance, Macroeconomic Stability and the Ease of in Doing Business.

Methodology Overview of the Country Risk Assessment Model

In general, an indicator is obtained from a series of observed facts, raw data that reveals the relative position of a country among a group of other countries. Indicators, such as economic indicators, are evaluated over a given period of time, monthly or yearly basis, to determine if economic performance is improving.⁶

"A composite indicator is formed when individual indicators are compiled into a single index, on the basis of an underlying model of the multi-dimensional concept that is being measured.

A composite indicator measures multidimensional concepts which cannot be captured by a single indicator (e.g. World Bank Ease of Doing Business, United Nations HDI, World Economic Forum Global Competitiveness, *Industrialization*, Knowledge - Based Society)".

Composite Indicators can be considered as useful tools in the setting of policy priorities, decision-making process, benchmarking, and monitoring performance. In addition, they can be used as a means to increase public awareness and interest.⁷

"Composite Indicators, Indices, provide the big picture, summarize issues which are complex in nature. Found to be easier to understand and interpret than trying to find trends, in separate indicators, and their relationship to each other.

Countries can then be ranked, over a period of time, displaying their overall relative performance levels with other countries. Country performance in absolute terms however cannot be evaluated, as information on levels of performance is lost.

...Composite Indicators can be linked to other variables and measures. Composite Indicators often measure concepts that are linked to well-known and measurable phenomena. Simple cross-plots (scatter charts) are often the best way to illustrate such links".

Quality of Governance

Measures of the quality of governance provide indicators that affect security, stability, and the capability of a nation to develop and create stable markets and investment opportunities. A number of measures of the quality of governance are used in the version of the Country Risk model presented in this study. Among these are the World Bank Worldwide Governance Indicators, which rank countries on six aspects of good governance: Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Rule of Law, Regulatory Quality, and Control of Corruption.

- *Voice and accountability* captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.
- *Political Stability and Absence of Violence/Terrorism* measures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism.
- *Government effectiveness* captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
- *Rule of law* captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.
- *Regulatory quality* captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.
- *Corruption Control* reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

These trends are summarized in the following figures and explored in depth in the analysis that follows:

Figure I.4 shows the different World Bank rankings in governance for each of the countries in the IOR. It is clear there are radical differences even between neighboring states, and cases where one

or two negative indicators offset the positive impact of all the rest. The following Figures use the model to add an important perspective on these rankings. They show the interactions between governance and economics

In the Change in Rank column, a negative (-) value indicates an improvement in Rank, implying an improvement in performance in Government, Public and Private Institutions.

Figure I.5 shows how these rankings break out by category of risk

Figure I.4: World Bank Governance Ratings for All IOR States: 2013 – Part One

	Voice and Accountability			Political Stability Non Violence			Government Effectiveness		
GCC:	2008	2012	Change in Rank	2008	2012	Change in Rank.	2008	2012	Change in Rank.
Bahrain	162	188	26	134	178	44	68	65	-3
Kuwait	143	150	7	84	100	16	91	103	12
Oman	170	169	-1	46	81	35	68	82	14
Qatar	163	157	-6	26	17	-9	58	46	-12
Saudi Arabia	198	205	7	145	142	-3	99	90	-9
UAE	164	171	7	63	57	-6	46	36	-10
Non GCC:									
Iran	194	199	5	176	190	14	138	134	-4
Iraq	179	178	-1	207	201	-6	188	182	-6
Israel	65	72	7	186	176	-10	27	30	3
Jordan	151	154	3	145	148	3	79	97	18
Lebanon	138	138	0	199	199	0	122	120	-2
Syria	200	205	5	140	211	71	143	189	46
Yemen	180	192	12	203	209	-6	169	191	22
South Asia:									
Bangladesh	140	140	0	189	192	3	149	163	14
India	84	89	5	180	186	6	95	111	16
Pakistan	161	161	0	207	209	2	147	161	14
Sri Lanka	139	148	9	193	163	-30	101	113	12
ASEAN South East Asia:									
Australia	12	9	-3	44	42	-2	9	13	4
Indonesia	112	104	-8	178	154	-24	110	117	7
Malaysia	146	131	-15	111	116	5	35	42	7
Myanmar	208	203	-5	180	173	-7	200	201	1
Singapore	132	98	-34	9	7	-2	1	1	0
Thailand	144	133	-11	184	184	0	77	82	5
Egypt Red Sea Horn:									
Djibouti	178	195	17	95	102	7	171	180	9
Egypt	177	154	-23	151	195	44	116	157	41
Eritrea	207	209	2	163	163	0	190	201	11
Sudan	196	203	7	205	207	2	190	197	7

Figure I.4: World Bank Governance Ratings for All IOR States: 2013 – Part Two

	Voice and Accountability Rank			Political Stability Non Violence Rank			Government Effectiveness Rank		
Country	2008	2012	Change in Rank.	2008	2012	Change in Rank.	2008	2012	Change in Rank.
Algeria	168	163	-5	178	192	14	141	138	-3
Libya	202	167	-35	55	197	142	184	199	15
Morocco	154	150	-4	155	144	-11	108	99	-9
Tunisia	186	121	-65	107	165	58	71	92	21
Sub Saharan Africa									
Comoros	136	146	10	176	138	-38	204	203	-1
Kenya	127	129	-2	186	190	4	136	136	0
Madagascar	134	159	25	149	152	3	145	178	33
Mauritius	58	57	-1	49	45	-4	48	49	1
Mozambique	113	121	8	92	87	-5	128	147	19
Seychelles	108	95	-13	59	62	3	87	76	-11
South Africa	75	74	-1	113	119	6	64	76	12
Tanzania	119	123	4	130	112	-18	126	151	25

Source: World Bank, Worldwide Governance Indicators, “Country Data Reports, 2013,” <http://info.worldbank.org/governance/wgi/index.aspx#countryReports>

Figure I.4: World Bank Governance Ratings for All IOR States: 2013 – Part Three

	Rule of Law Rank			Regulatory Quality Rank			Control of Corruption Rank		
GCC:	2008	2012	Change in Rank.	2008	2012	Change in Rank.	2008	2012	Change in Rank.
Bahrain	69	81	12	54	55	1	75	67	-8
Kuwait	65	79	14	89	101	12	58	99	41
Oman	61	70	9	56	69	13	62	82	20
Qatar	55	38	-17	58	53	-5	35	35	0
Saudi Arabia	88	83	-5	91	95	4	87	90	3
UAE	74	70	-4	64	57	-7	35	36	1
Non GCC:									
Iran	166	169	3	200	195	-5	149	159	10
Iraq	207	205	-2	180	189	9	204	193	-11
Israel	53	47	-6	31	32	1	44	46	2
Jordan	76	79	3	81	90	9	64	82	18
Lebanon	147	154	7	110	111	1	165	163	-2
Syria	137	182	45	176	201	25	184	186	2
Yemen	171	195	24	153	153	0	147	193	46
South Asia:									
Bangladesh	159	171	12	171	168	-3	178	166	-12
India	92	100	8	122	138	16	116	136	20
Pakistan	169	171	2	141	157	16	161	180	19
Sri Lanka	96	102	6	122	109	-13	97	101	4
ASEAN South East Asia:									
Australia	11	11	0	7	7	0	9	9	0
Indonesia	144	140	-4	118	120	2	136	149	13
Malaysia	82	72	-10	77	63	-14	85	72	-13
Myanmar	199	199	0	204	205	1	202	186	-16
Singapore	17	9	-8	3	1	-2	5	7	2
Thailand	101	106	5	87	88	1	120	111	-9

Figure I.4: World Bank Governance Ratings for All IOR States: 2013 – Part Four

	Regulatory Quality Rank			Regulatory Quality Rank			Control of Corruption Rank		
Egypt Red Sea Horn:	2008	2012	Change in Rank.	2008	2012	Change in Rank.	2008	2012	Change in Rank.
Djibouti	136	154	18	106	136	-13	101	115	14
Egypt	99	127	28	204	140	34	151	138	-13
Eritrea	190	199	9	196	207	3	110	149	39
Sudan	197	192	-5		199	3	200	207	7
Sub Saharan Africa:									
Comoros	180	178	-2	198	193	-5	157	155	-2
Kenya	176	165	-11	108	122	14	180	184	4
Madagascar	129	169	40	116	145	29	93	145	52
Mauritius	37	47	10	54	44	-10	54	69	15
Mozambique	139	140	1	130	136	6	126	140	14
Seychelles	86	98	12	155	122	-33	75	69	-6
South Africa	95	89	-6	71	78	7	77	97	20
Tanzania	117	138	21	136	132	-4	120	163	43

Source: World Bank, Worldwide Governance Indicators, “Country Data Reports, 2013,” <http://info.worldbank.org/governance/wgi/index.aspx#countryReports>

Figure I.5 World Bank World Governance By Risk Category**Sub-Region Level**

Low to Moderate Risk Rank (1-70)	Medium Risk Rank (70 -110)	High Risk Rank (110-150)	Very High/Critical Risk Rank (150-200)
GCC	ASEAN South East Asia Sub-Saharan Africa	Non-GCC South Asia	Egypt Red Sea horn

Country Level

Low to Moderate Risk Rank (1-70)	Medium Risk Rank (70 -110)	High Risk Rank (110-150)	Very High/Critical Risk Rank (150-200)
Singapore	Jordan	India	Iran
Australia	Saudi Arabia	Indonesia	Bangladesh
Qatar	Thailand	Djibouti	Comoros
Mauritius	Sri Lanka	Tanzania	Pakistan
UAE	Mozambique	Egypt	Eritrea
Israel		Madagascar	Yemen
Malaysia		Kenya	Myanmar
Oman			Syria
Seychelles			Iraq
Bahrain			Sudan
South Africa			
Kuwait			

Quality of Economic Development

Economic risk can be determined in many ways, but one critical set of measures is a country's ability to allow business to start, function, and grow and to compete on a global basis. These measures are used throughout this analysis, and as a key part of the risk assessment model. **Figure I.5** displays the change in country rank over a period of four years in three main Indices:

- The World Bank Ease of Doing Business Index (2011 - 2014)
- The World Economic Forum Global Competitiveness Index (2011 – 2013)
- The United Nations Development Program, Human Development Index (2007 – 2012)

A minus (-) sign implies an improvement as the Rank is moving from a higher number to a lower number (lower Rank number is better), which in return represents improvements in Economic Performance.

In the Ease of Doing Business, the UAE showed the most improvement between the IOR countries, pushing up its world Rank by 17 points from 40 to 23. Several countries showed a 15-point improvement in their Ranks: Iraq, Malaysia and the Seychelles. Iraq's world rank in the 2014 World Bank report, however, is 151, and the Seychelles is only 80. Malaysia's world Rank is 6th.

In the case of the GCC states, Oman and Qatar also showed improvements in their Rank. In the case of the non-GCC Arab states, Iraq, Lebanon and Sudan showed improvement. In total nine countries showed improvement, of which six are from the Middle East: Iraq, Lebanon, Oman, Qatar, Sudan, and the UAE, and three are from the GCC states. The three other countries -- Indonesia, Malaysia and Seychelles -- are from other Subregions.

The IOR countries that showed the highest improvement in the Global Competitiveness Index Report are: Kenya and Mauritius by 10 points, followed by the UAE and Indonesia by six points. Out of the 10 IOR countries, four are from the GCC states: UAE, Qatar, Oman and Saudi Arabia. The non-GCC states showing improvement were: Indonesia, Kenya, Malaysia, Mauritius, Singapore, and South Africa.

The trends that emerge from the Country Risk Assessment of these two main Indices -- using the change in Country Rank between 2010 and 2013 -- indicate that countries from the GCC Subregion showed improvements in Rank in every Index. Singapore, Indonesia, Malaysia and Thailand in the South East Asia Subregion also showed consistent improvements in the Indices analyzed. This indicates that these two Subregions will be the main contributors to the IOR Economic and Financial development in the decades to come.

As is the case with Governance, it is possible to rank Subregions and countries by category of risk.

- **Figure I.6** shows the Subregional and country levels of risk according to the Ease of Doing Business rankings
- **Figure I.7** shows the Subregional and country levels of risk according to the WEF Global Competitiveness Index

It should be noted, however, that -- as the later Figures in this chapter and the analysis by Subregion and county in later chapters show, no one index is authoritative and only broad correlations exist between the country rankings using different metrics.

**Figure I.6: IOR Subregion and Country Quality of Economic Development
Trend Analysis – Part One**

REGION/ COUNTRY	GCI 2010- 2011	GCI 2013- 2014	GCI Rank Change	Ease of Doing Business 2011	Ease of Doing Business 2014	Ease of Doing Business Rank Change
GCC:						
Bahrain	37	43	6	28	46	18
Kuwait	35	36	1	74	104	30
Oman	34	33	-1	57	47	-10
Qatar	17	13	-4	50	48	-2
Saudi Arabia	21	20	-1	11	26	15
UAE	25	19	-6	40	23	-17
Non GCC:						
Iran	69	82	13	129	152	23
Iraq	-	-	-	166	151	-15
Israel	24	27	3	29	35	6
Jordan	65	68	3	111	119	8
Lebanon	92	103	11	113	111	-2
Yemen	-	-	-	144	165	21
South Asia:						
Bangladesh	107	110	3	107	130	23
India	51	60	9	134	134	0
Pakistan	123	133	10	83	110	27
Sri Lanka	62	65	3	102	85	-17
ASEAN South East Asia:						
Australia	16	21	5	10	11	1
Indonesia	44	38	-6	121	120	-1
Malaysia	26	24	-2	21	6	-15
Myanmar	-	-	-	-	-	-
Singapore	3	2	-1	1	1	0
Thailand	38	37	-1	19	18	-1

**Figure I.6: IOR Subregion and Country Quality of Economic Development
Trend Analysis – Part Two**

REGION/ COUNTRY	GCI 2010- 2011	GCI 2013- 2014	GCI Rank Change	Ease of Doing Business 2011	Ease of Doing Business 2014	Ease of Doing Business Rank Change
Comoros	-	-	-	159	158	-1
Kenya	106	96	-10	98	129	31
Madagascar	124	132	8	140	148	8
Mauritius	55	45	-10	20	20	0
Mozambique	131	137	6	126	139	13
Seychelles	-	80	80	95	80	-15
South Africa	54	53	-1	34	41	7
Tanzania	113	125	12	33	16	-17
Egypt Red Sea Horn:						
Djibouti				158	160	2
Egypt	81	118	37	94	128	34
Eritrea	-	-	-	180	184	4
Sudan	-	-	-	154	149	-5

Source: The World Bank Ease of Doing Business Index (2014) and The World Economic Forum Global Competitiveness Index (2013-2014)

Figure I.7 World Bank Ease of Doing Business Risk Ranking- Part One**Subregion Level**

Low to Moderate Risk Rank (1-70)	Medium Risk Rank (70 -110)	High Risk Rank (110-150)	Very High/Critical Risk Rank (150-200)
GCC ASEA South East Asia	Sub-Saharan Africa	Non-GCC South Asia Egypt Red Sea Horn	

Country Level

Low to Moderate Risk Rank (1-70)	Medium Risk Rank (70 -110)	High Risk Rank (110-150)	Very High/Critical Risk Rank (150-200)
Singapore	Seychelles	Indonesia	Djibouti
Malaysia	Sri Lanka	Jordan	Syria
Australia	Kuwait	Kenya	Myanmar
Thailand	Pakistan	Bangladesh	Eritrea
Mauritius		Yemen	
UAE		Egypt	
Saudi Arabia		India	
Israel		Mozambique	
South Africa		Tanzania	
Qatar		Madagascar	
Oman		Sudan	
Bahrain		Iran	
		Iraq	
		Comoros	

Figure I.8 WEF Global Competitiveness Index Risk Ranking**Subregion**

Low to Moderate Risk Rank (1-70)	Medium Risk Rank (70 -110)	High Risk Rank (110-150)	Very High/Critical Risk Rank (150-200)
GCC ASEAN South East Asia	Non-GCC South Asia Sub-Saharan Africa	Egypt Red Sea Horn	

Country Level

Singapore	Seychelles	Egypt
Qatar	Iran	Tanzania
UAE	Kenya	Madagascar
Saudi Arabia	Lebanon	Pakistan
Australia	Bangladesh	Mozambique
Malaysia		Myanmar
Israel		Yemen
Oman		
Kuwait		
Thailand		
Indonesia		
Bahrain		
Mauritius		
South Africa		
India		
Sri Lanka		
Jordan		

Macroeconomic Environment

The Country Risk Assessment Model provides a wide range of ways to integrate these and other indices of Subregion and country risk and performance. The following macroeconomic indicators are used in the model to focus on economic opportunities, risks, and stability and produce summary rankings that can then be compared with the previous rankings in governance:

- External Economic Instability composed of the following:
 - A massive trade deficit,
 - Depletion of foreign reserves,
 - Huge debt outstanding,
 - Country credit rating.
- Plus Internal Economic Stability composed of the following:
 - A large budget deficit,
 - Recession,
 - Higher rates of unemployment,
 - Increasing inflation,
 - Gross national savings

The World Economic Forum summarizes the importance of such macroeconomic indicators as follows:

“The stability of the macroeconomic environment is important for business and, therefore, is significant for the overall competitiveness of a country. Although it is certainly true that macroeconomic stability alone cannot increase the productivity of a nation, it is also recognized that macroeconomic disarray harms the economy, as we have seen in recent years, notably in the European context.

The government cannot provide services efficiently if it has to make high-interest payments on its past debts. Running fiscal deficits limits the government’s future ability to react to business cycles. Firms cannot operate efficiently when inflation rates are out of hand. In sum, the economy cannot grow in a sustainable manner unless the macro environment is stable.

Macroeconomic stability captured the attention of the public most recently when some advanced Economies, notably the United States and some European countries, needed to take urgent action to prevent macroeconomic instability when their public debt reached unsustainable levels in the wake of the global financial crisis.

It is important to note that this pillar evaluates the stability of the macroeconomic environment, so it does not directly take into account the way in which Public accounts are managed by the government. This qualitative dimension is captured in the Governance described above.”

Figure I.9 shows that when the Governance indicators are combined with the Macroeconomic stability Indicators, the model generates an early warning signal if a country, or a region, is heading into a crisis. The Economic aspects with the financial stability of a country can also be combined. The model combines the major World Bank Ease of Doing Business Index with a number of financial indicators from the World Economic Forum’s Global Competitiveness Report.

Figure I.9: Part One shows the combined ratings for governance and economic by Subregion, with the highest numbers representing the worst ranking relating to the total number of countries

in the world. There are radical differences by Subregion. Once again, the Southern Gulf states rank well, Southeast Asia next, and the other Subregions progressively worse.

Figure I.9: Part Two shows the ranks by IOR countries. It becomes clear that country ranks are far more meaningful because of the gross differences between countries in a given Subregion and neighboring states. Rather than some decline in the meaning of nation states, the differences in political and economic development have tended to increase these differences over time.

Figure I.9: Macro-Economic Stability versus World Bank Governance Indicators (Rank) – Part One: Subregion Level

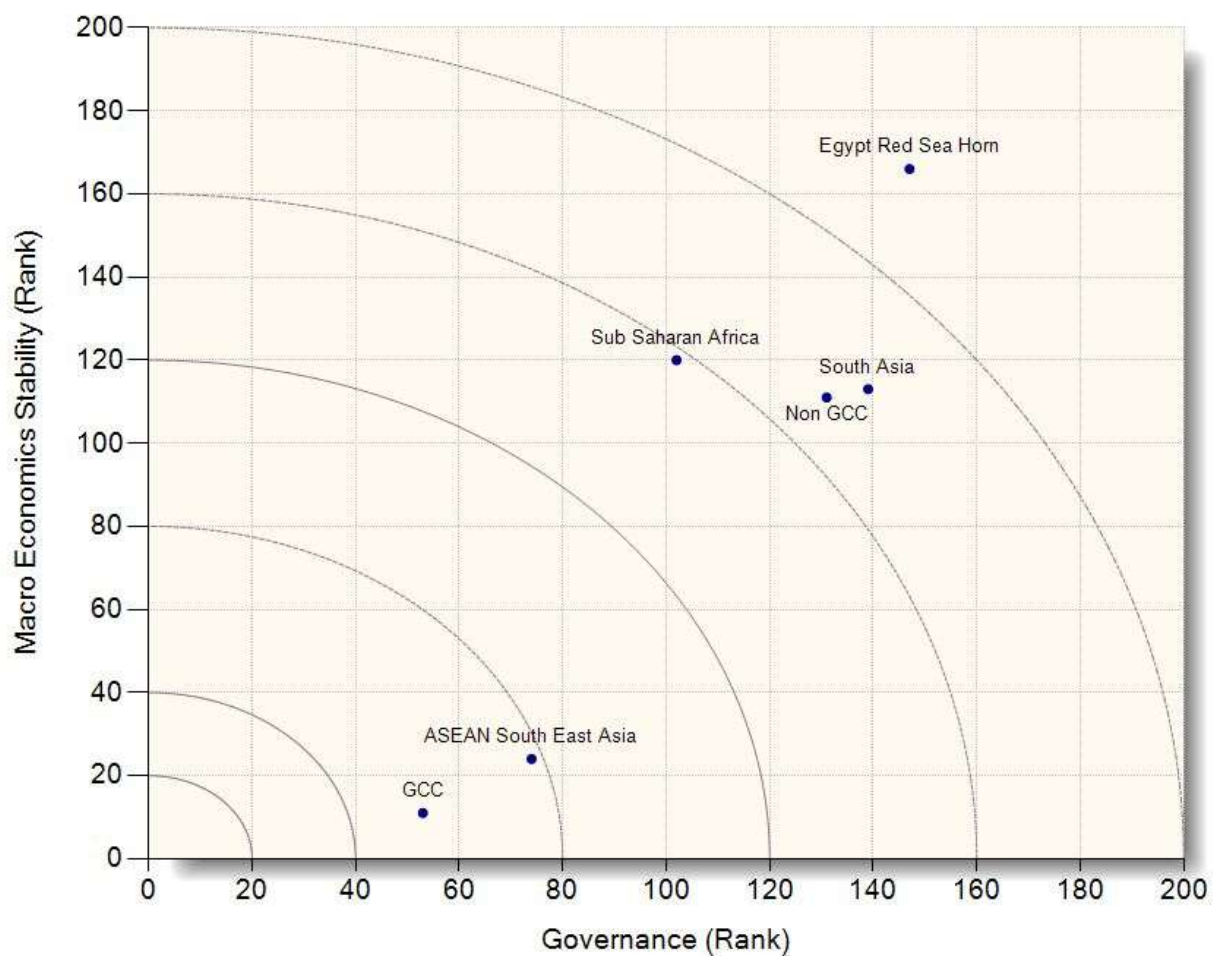
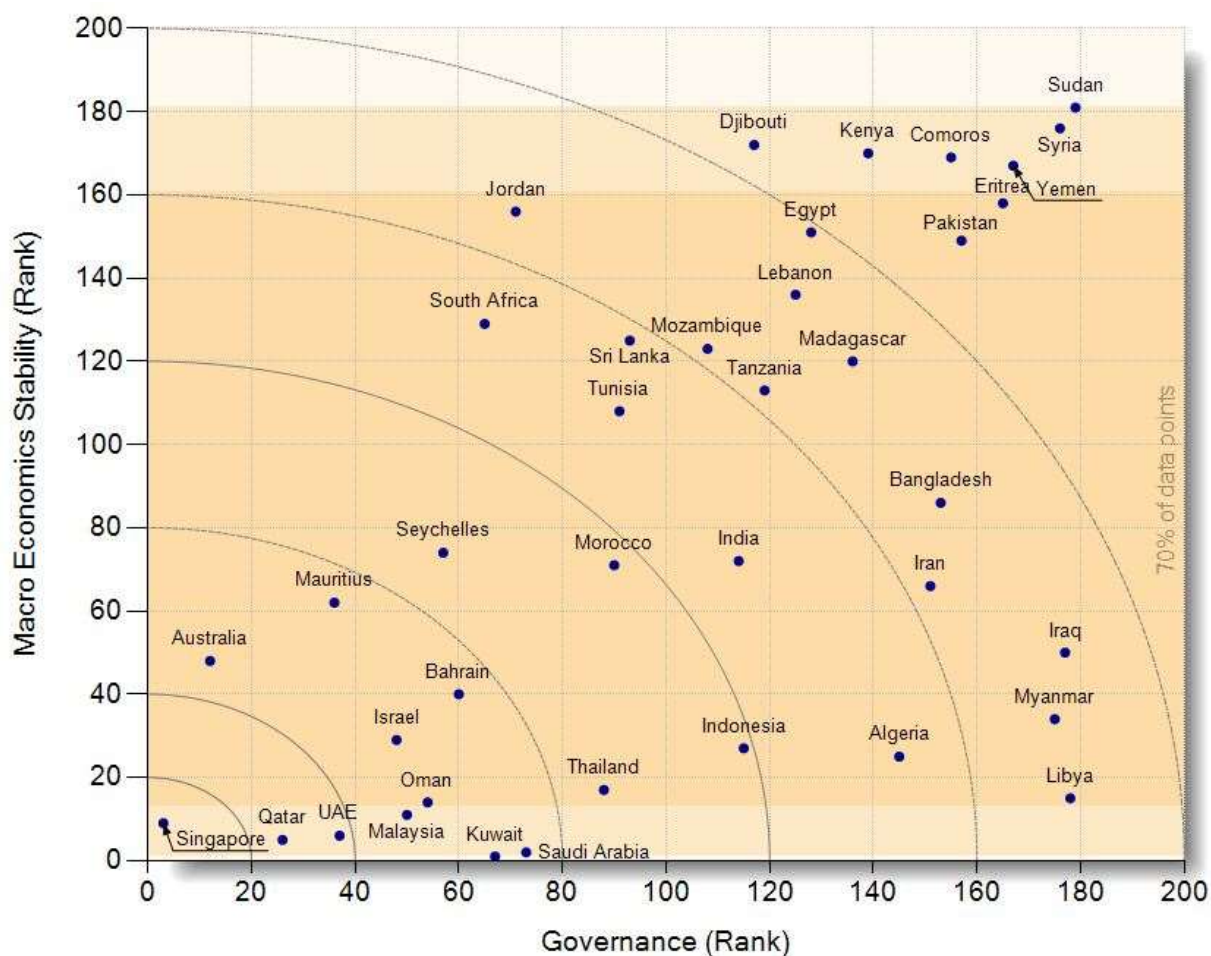


Figure I.9: Macro-Economic Stability versus World Bank Governance Indicators (Rank) – Part Two: Country Level

Country Level



The data in **Figure I.9** show that the spread of risk for the quality Governance and Macro-Economic Stability in the IOR divides broadly into four major categories of risk. **Figure I.10** shows how the place of given Subregions and countries by such risk categories

As might be expected, the rankings show some correlation to the rankings in governance discussed earlier as well as to the other economic risk assessments. They also show a broad correlation to the previous economic risk assessments, although they reflect a broader range of economic factors and but often differ in detail. The reasons for these differences are addressed in more detail in the chapters that cover given Subregions and countries.

Figure I.10 World Bank World Macroeconomic Stability Risk Category**Subregion Level**

Low to Moderate Risk Rank (1-70)	Medium Risk Rank (70 -110)	High Risk Rank (110-150)	Very High/Critical Risk Rank (150-200)
GCC ASEAN South East Asia		Non-GCC South Asia Sub-Saharan Africa	Egypt Red Sea Horn

Country Level

Low to Moderate Risk Rank (1-70)	Medium Risk Rank (70 -110)	High Risk Rank (110-150)	Very High/Critical Risk Rank (150-200)
Kuwait Saudi Arabia Qatar Singapore Malaysia Oman Thailand Indonesia Israel Myanmar Bahrain Australia Iraq Mauritius Iran	India Seychelles Bangladesh	Tanzania Madagascar Mozambique Sri Lanka South Africa Pakistan	Egypt Jordan Eritrea Yemen Comoros Kenya Djibouti Syria Sudan

Comparing Ease of Doing Business, Global Competitiveness, and Macroeconomic Stability Rankings

No one approach to such rankings can be authoritative. At the same time, looking at a spectrum of indicators does show that such assessments often do produce roughly the same results. This is true even if one uses pragmatic short terms business indicators rather than broader macroeconomic indicators. The World Bank reports on the *Ease of Doing Business* investigate regulations that enhance business activity and those that constrain it. Regulations affecting 11 areas of the life of a business are covered:⁸

- Starting a business,
- Dealing with construction permits,
- Getting electricity,
- Registering property,
- Getting credit,
- Protecting investors,
- Paying taxes,
- Trading across borders,
- Enforcing contracts,
- Resolving insolvency

These factors are tracked through changes in the regulations applying to domestic small and medium-size companies, covering 189 countries. The aggregate ranking on the ease of doing business is based on these indicators.⁹

Figure I.11 shows the correlation between the World Bank Ease of Doing Business Index and the financial indicators from the World Economic Forum Global Competitiveness Index, and between the Country Risk Model Index of Macroeconomic Stability and the World Bank Ease of Doing Business Index.

Figure I.12 shows how countries group by risk level in terms of Ease of Doing Business and Global Competitiveness.

There are difference in the rankings by Subregion and country in each Figure, but they are relatively limited in terms of their practical analytic purpose. The point is not to develop exact scores, but to highlight risk, and the correlation between the different measures involved is close enough to indicate relative stability or warn about an outlier country.

Figure I.11: World Bank Ease of Doing Business Index versus WEF Global Competitiveness Index (2014) – Part One: Subregion Level

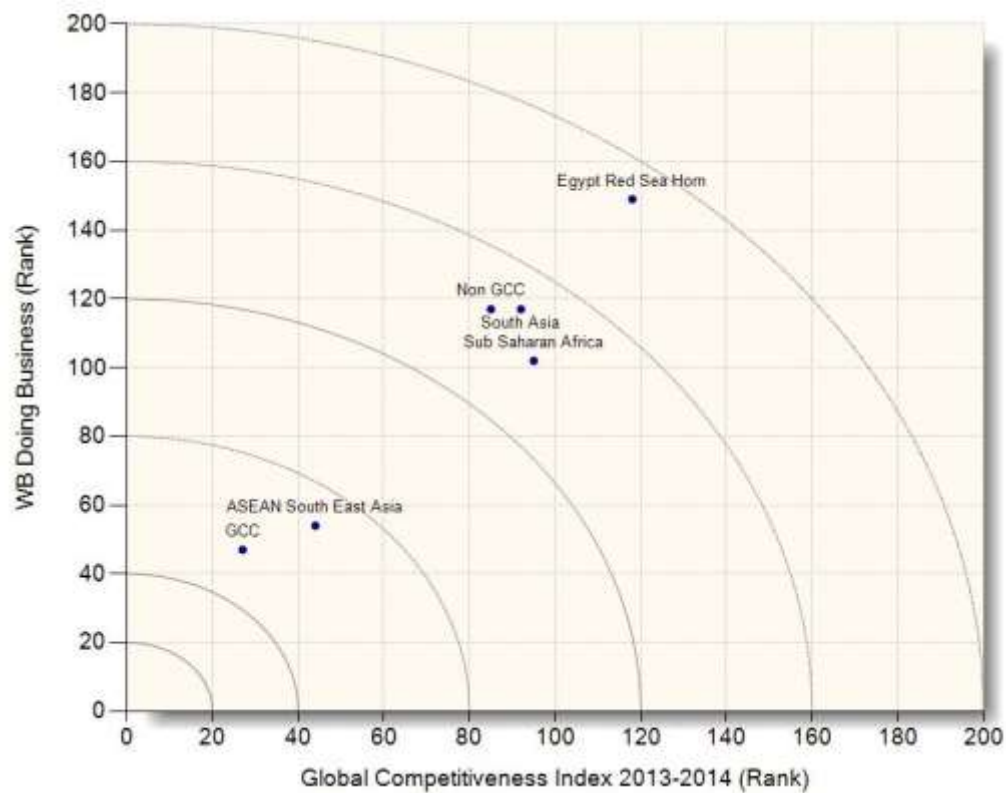
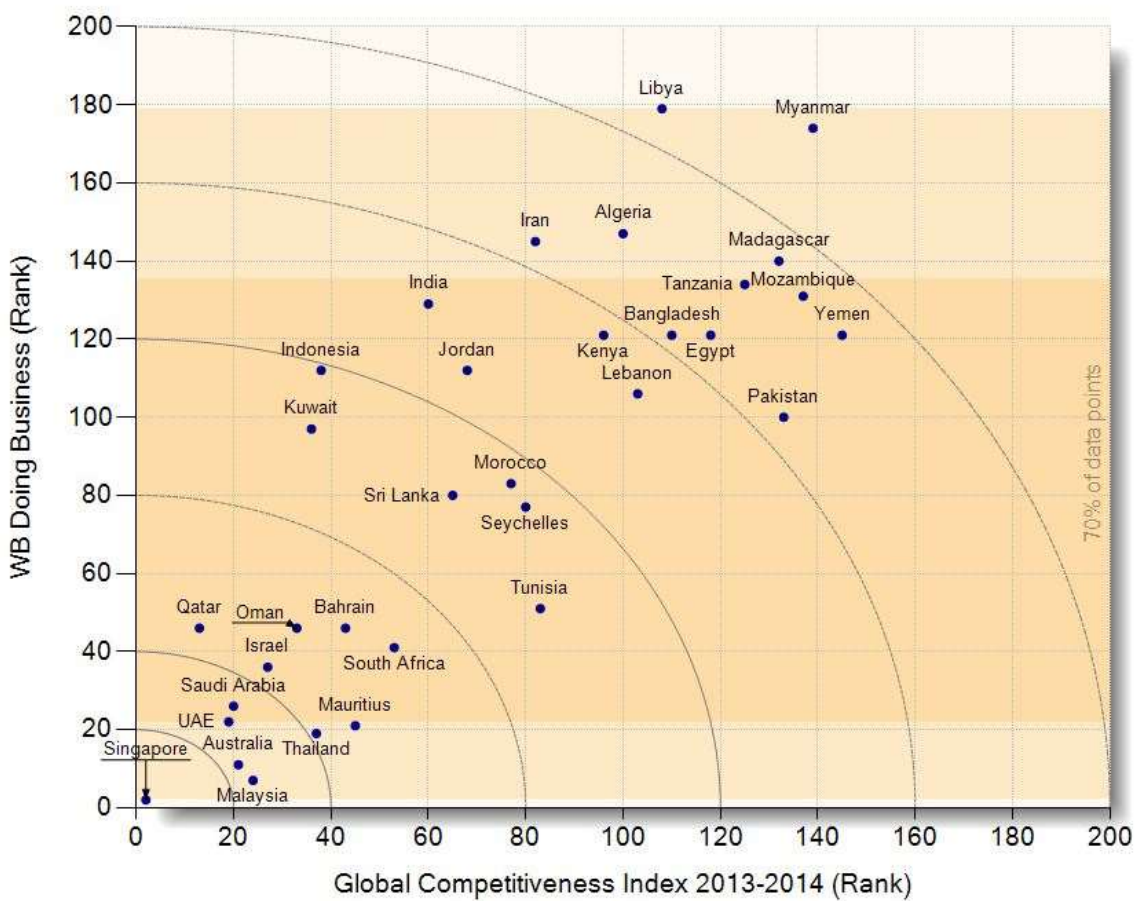
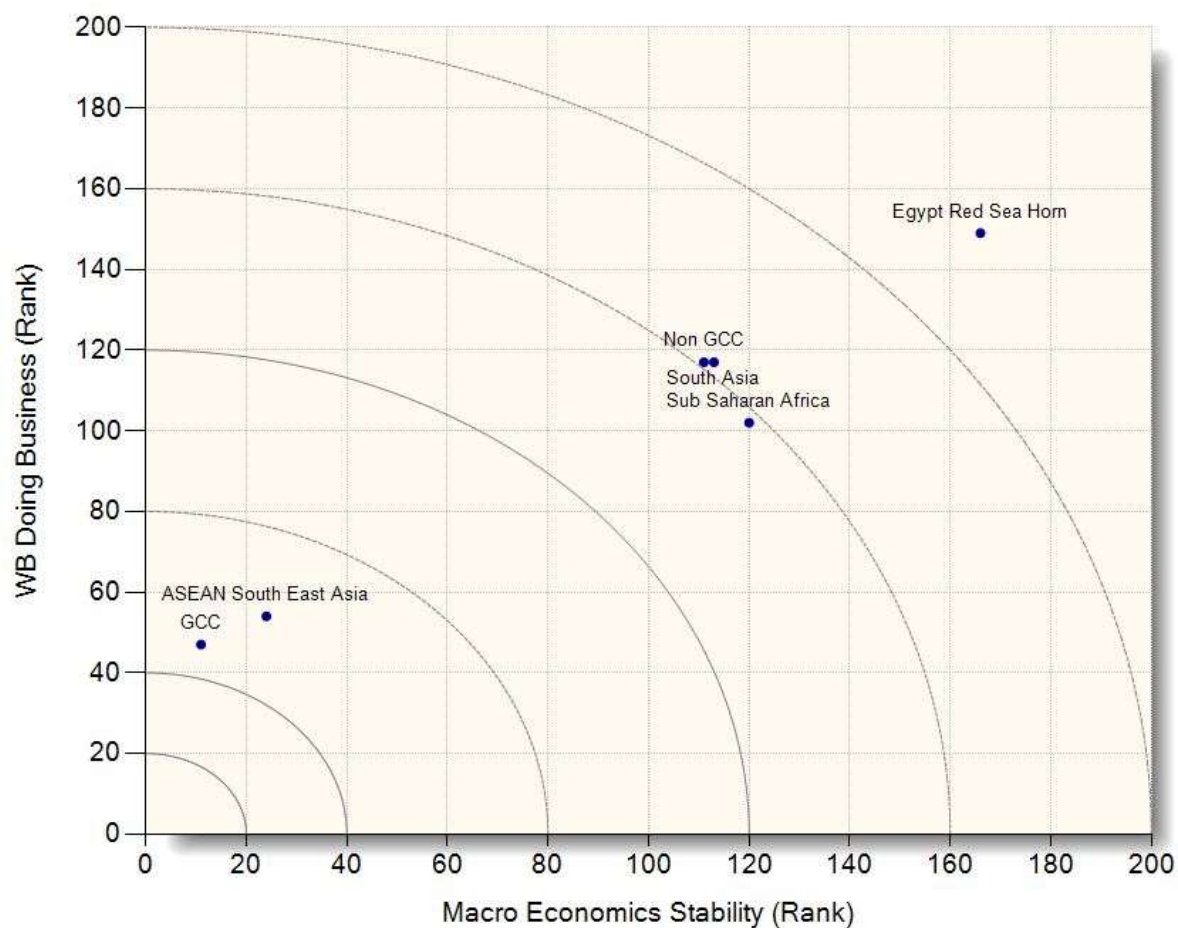


Figure I.11: World Bank Ease of Doing Business Index versus WEF Global Competitiveness Index (2014) -- Part Two: Country Level



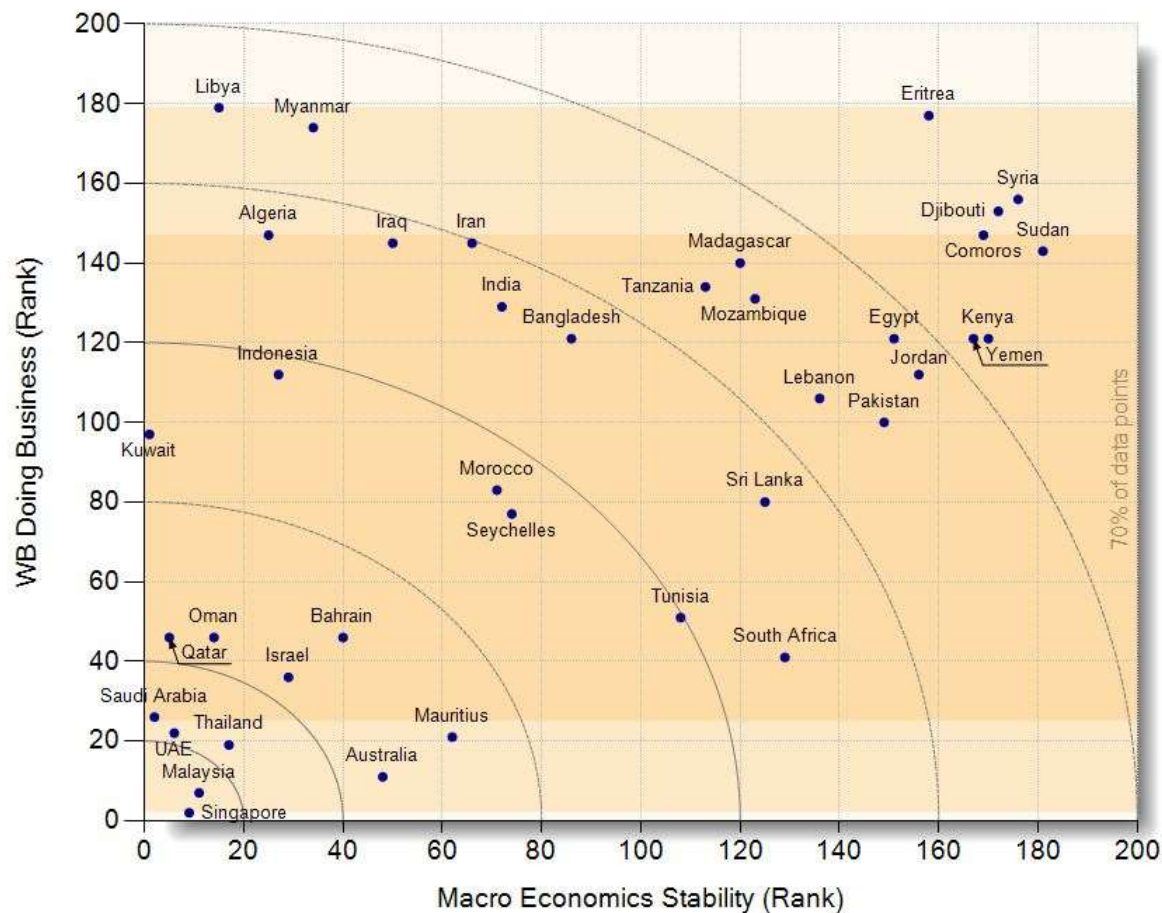
Source: Dr. Abdullah Toukan, Country Risk Model, February 8, 2014

Figure I.12: World Bank Ease of Doing Business Index versus Macroeconomic Stability – Part One: Subregion Level



Source: Dr. Abdullah Toukan, Country Risk Model, February 8, 2014

Figure I.12: World Bank Ease of Doing Business Index versus Macroeconomic Stability Index – Part Two: Country Level



Source: Dr. Abdullah Toukan, Country Risk Model, February 8, 2014

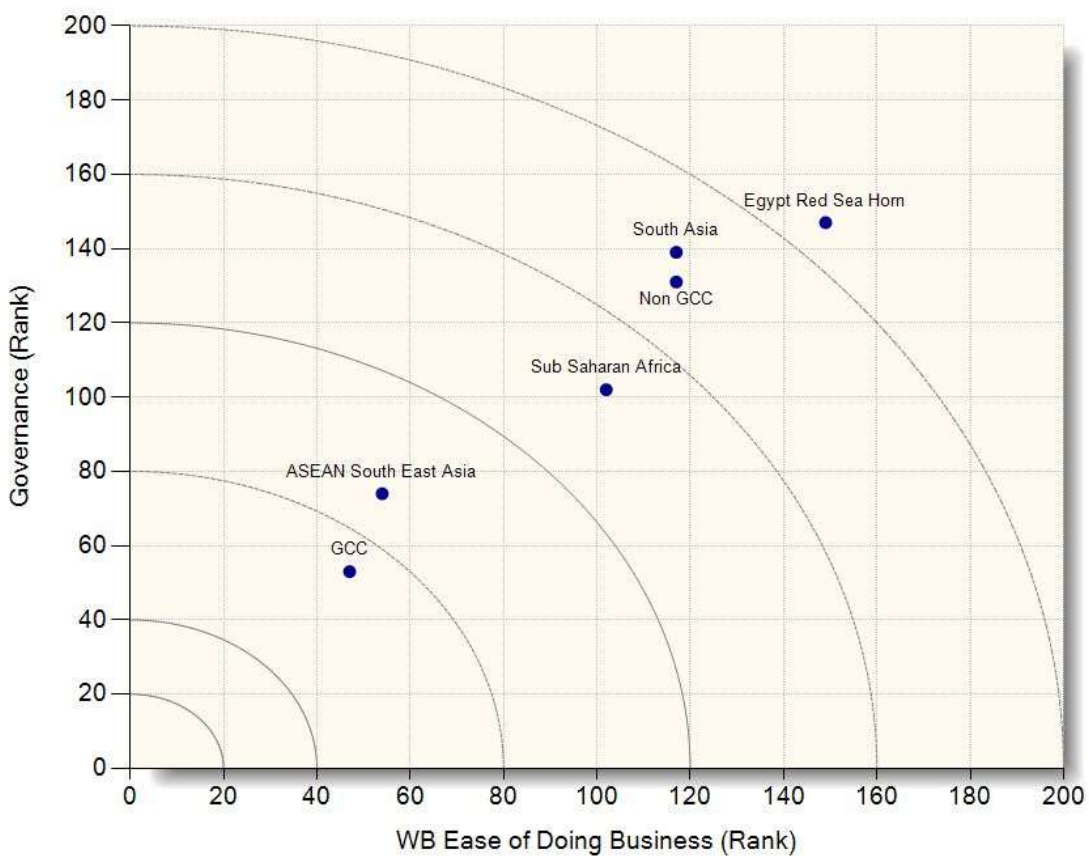
One illustration of this model consists of the charts that compare Governance Rank versus World Bank Ease of Doing Business Rank on a Country and Sub-Region levels.

Comparing Ease of Doing Business and Governance Rankings

Figure I.13 highlights these points by providing another picture of the results of the model, and the correlation between its outcomes and risk assessments, even when it uses different indices. It compares the Ease of Doing Business and Governance on Subregion and Country basis.

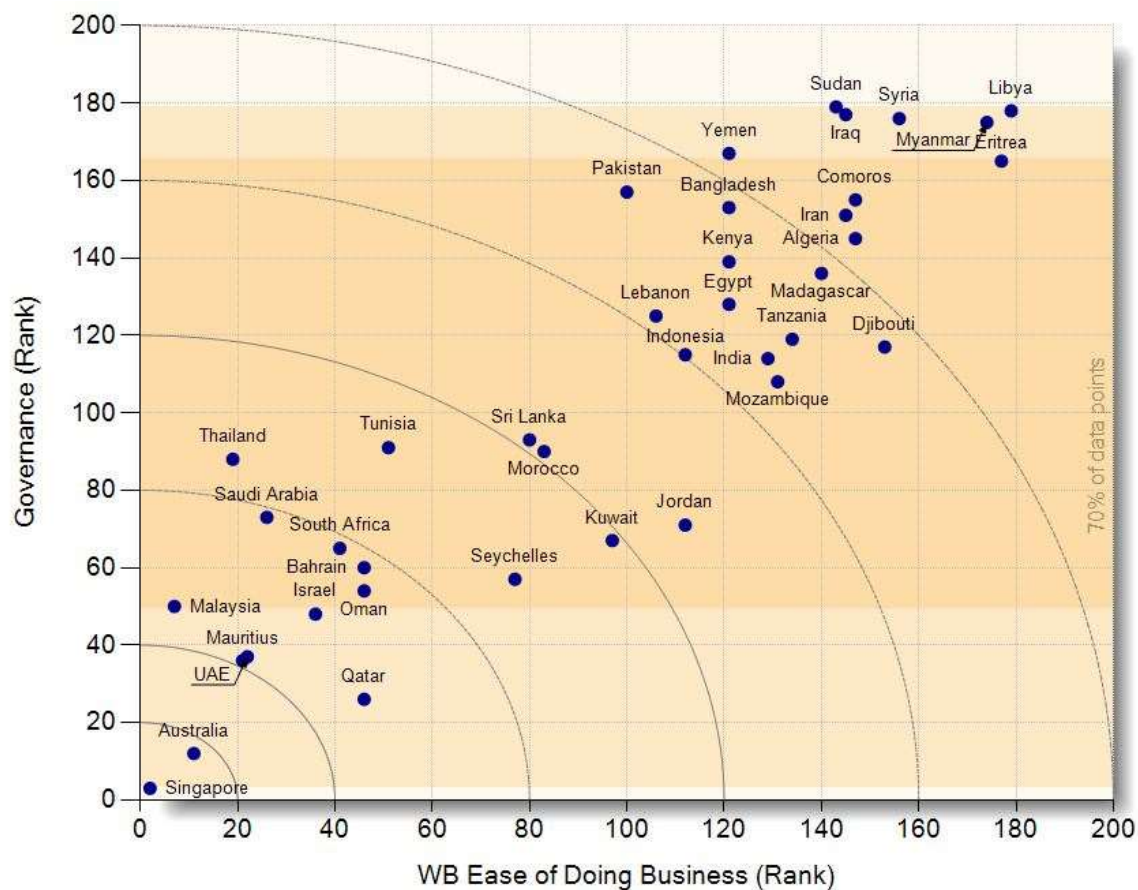
Figure I.13 shows that the rankings by Subregion and country do change, but in ways that seem natural, given the emphasis on immediate ease of doing business relative to governance trends. At the same time, they highlight the fact that risk assessment have to be tailored to need and use, and no one scoring system can replace modeling that shows a range of key summary indicators.

Figure I.13: World Bank Governance Index versus WEF Global Competitiveness Index (2014) – Part One: Regional Level



Source: Dr. Abdullah Toukan, Country Risk Model, February 8, 2014

Figure I.13: World Bank Country Governance (Risk) Indicators versus World Bank Ease of Doing Business Report (Rank) – Part Two: Country Level



The Quality of Human Life: The UNDP Gender Inequality Index and the Human Development Index 2012

There is no way to easily or reliably quantify the quality of human life, but it is obvious from the analysis of given countries that follow that risk is heavily dependent on how well a given nation meets the needs of all its citizens, and does so regardless of religion, ethnicity, tribe, region, and gender.

The Human Development Index

The Human Development Index (HDI) provides at least a partial measure of risk and progress in meeting human needs. The Human Development Index (HDI) is a composite measure of indicators along three dimensions: a long and healthy life, educational attainment and command over the resources needed for a decent living.

As the UN notes, many of the judgments involved are subjective, and good performance in one category does not mean good performance in another. Life expectancy, for example, does not increase directly with per capita income and per capita income does not vary directly with education.

Accordingly, the HDI provides a rough indicator of how given countries improving the human condition, but fully understanding the rankings requires a careful reading of the annual UN Human Development reports over a period of years, which can be found on UN Development Program web site at http://hdr.undp.org/sites/default/files/reports/14/hdr2013_en_complete.pdf.

Figure I.14 shows the trend in HDI ranking for each IOR country between 2007 and 2012. It is striking that there is a decline in in many cases, and that the national rank varies sharply with given Subregions – for example from 16th best (Israel) to 160th worst (Yemen).

Figure I.14 UNDP Human Development Index for All IOR States 2007 to 2013
- Part One

Subregion/Country	HDI 2007	HDI 2011	HDI 2012	Rank 2012	Rank Change 2007-2012
GCC					
Bahrain	0.802	0.806	0.796	48	-4
Kuwait	0.787	0.760	0.790	54	-4
Oman	.	0.705	0.731	84	.
Qatar	0.833	0.831	0.834	36	-3
Saudi Arabia	0.756	0.770	0.782	57	5
UAE	0.827	0.846	0.818	41	-5
Non GCC					
Iran	0.706	0.707	0.742	76	7
Iraq	0.567	0.573	0.590	131	1
Israel	0.892	0.888	0.900	16	-2
Jordan	0.695	0.698	0.700	100	-7
Lebanon	0.728	0.739	0.745	72	3
Syria	0.623	0.632	0.648	116	0
Yemen	0.444	0.462	0.458	160	-4
South Asia					
Bangladesh	0.488	0.500	0.515	146	1
India	0.525	0.547	0.554	136	-1
Pakistan	0.498	0.504	0.515	146	-1
Sri Lanka	0.693	0.691	0.715	92	5
ASEAN South East Asia					
Australia	0.931	0.929	0.938	2	0
Indonesia	0.595	0.617	0.629	121	1
Malaysia	0.753	0.761	0.769	64	1
Myanmar	0.464	0.483	0.498	149	1
Singapore	.	0.866	0.895	18	7
Thailand	0.676	0.682	0.690	103	-1

**Figure I.14: UNDP Human Development Index for All IOR States 2007 to 2013
- Part Two**

Subregion/Country	HDI 2007	HDI 2011	HDI 2012	Rank 2012	Rank Change 2007-2012
Sub Saharan Africa					
Comoros	0.425	0.433	0.429	169	-7
Kenya	0.491	0.509	0.519	145	1
Madagascar	0.478	0.480	0.483	151	-3
Mauritius	0.720	0.728	0.737	80	-2
Mozambique	0.301	0.322	0.327	185	0
Seychelles	0.792	0.773	0.806	46	1
South Africa	0.609	0.619	0.629	121	0
Tanzania	0.408	0.466	0.476	152	15
Egypt Red Sea Horn of Africa					
Djibouti	0.419	0.430	0.445	164	0
Egypt	0.640	0.644	0.662	112	0
Eritrea	.	0.349	0.351	181	.
Sudan	0.401	0.408	0.414	171	-3

Source: United Nations Development Program; [hdr_2011_en_complete](http://hdr.undp.org/sites/default/files/reports/14/hdr2013_en_complete.pdf), [hdr_2013_en_complete](http://hdr.undp.org/sites/default/files/reports/14/hdr2013_en_complete.pdf), http://hdr.undp.org/sites/default/files/reports/14/hdr2013_en_complete.pdf, pp. 143 to 155.

Gender Inequality Index

The Gender Inequality Index is a component of the overall Human Development Index with special importance to many countries in the IOR. **Figure I.15** shows its direct contribution to the overall Human Development Index by country.

The Gender Inequality Index is particularly important in the IOR for reasons that the Human Development Report only partly addresses. The United National Development Program *Human Development Report 2013* (<http://hdr.undp.org>) defines the importance and role that Gender Equality have on the socio-economic development of a country as being:

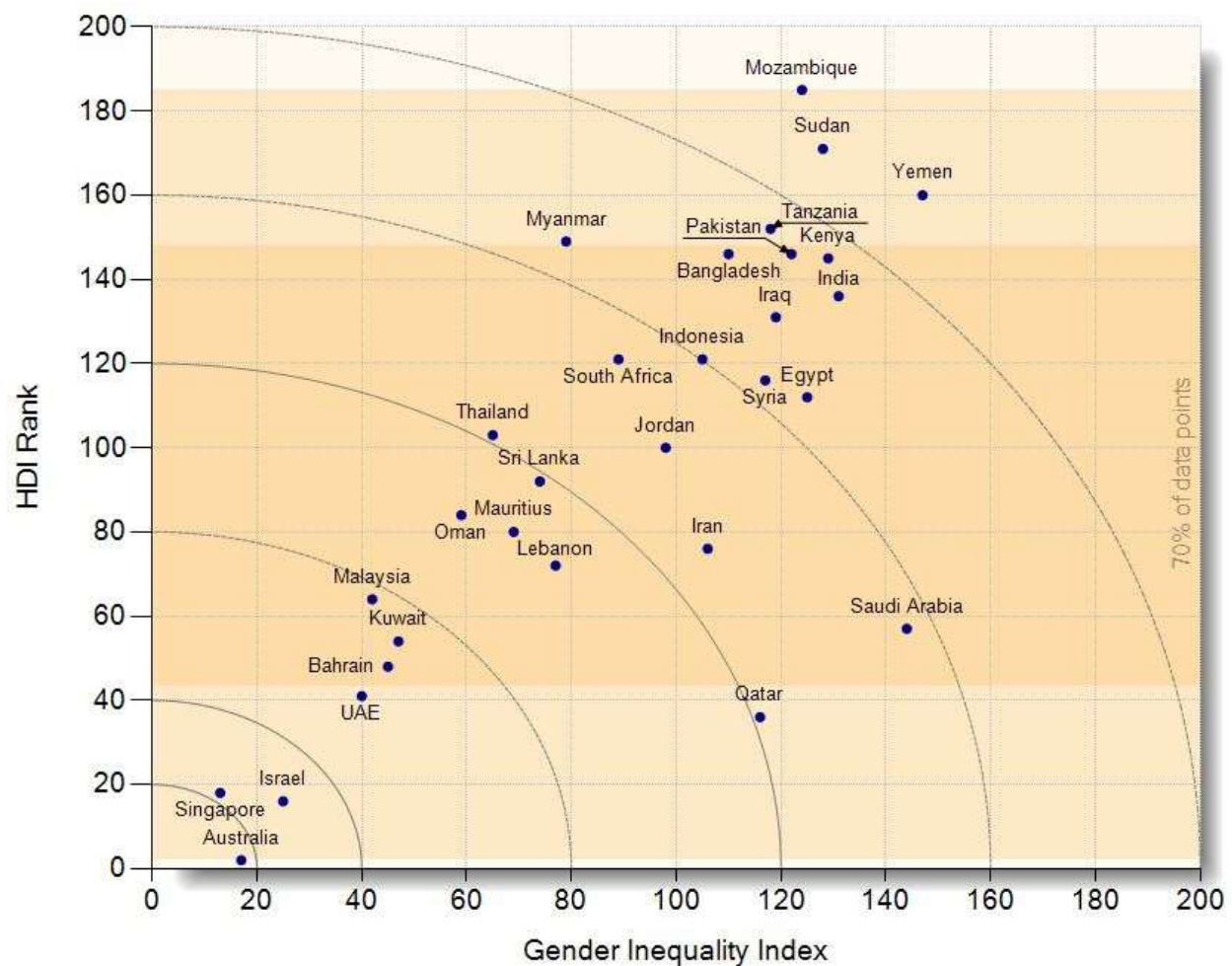
...core concerns and an essential part of human development. All too often, women are discriminated against in health, education and the labor market, which restricts their freedoms. The extent of discrimination can be measured through the Gender Inequality Index (GII), which captures the loss of achievement due to gender inequality in three dimensions: reproductive health, empowerment and labor market participation.

Gender equality involves far more than human rights issues. It is a critical part of the productivity gain and competitiveness of a give country and social grouping within it. In a world where many Subregions allow women to be an increasingly equal part of the labor forces, they play a major role in determining a country's wealth and gains in productivity – as well as its benefits from investment in education, health, infrastructure, and every other aspects of its economy. Nations that discriminate against women – like nations that discriminate against race, ethnicity, religion,

or any other form of bigotry and prejudice do so at a major cost in wealth and competitiveness relative to nations that do not.

To put it bluntly, gender equality is a case where human rights coincide with any intelligent form of greed and self-interest on a national level. Moreover, as many countries with poor gender equality are discovering, it is impossible to move towards full development in nations where the family structure and patterns of education mean the mother lacks the education to help make children become fully educated and competitive, women lack the ability to help increase family income, and women cannot fully assist their husband or partner in their career. Gender inequality is dysfunctional even when seen from a purely male viewpoint.

Figure I.15: Country Human Development Index versus Gender Inequality Index Rank – Part One



Source: UN Human Development Reports, <http://hdr.undp.org>, statistical data.

Figure I.15: Country Human Development Index versus Gender Inequality Index Rank – Part Two

UNDP Human Development Index Risk

Low to Moderate Risk	Medium Risk	High Risk	Very High/Critical Risk
Rank (1-70)	Rank (70 -110)	Rank (110-150)	Rank (150-200)

GCC	ASEAN South East Asia Non-GCC	Sub-Saharan Africa South Asia	Egypt Red Sea Horn
Country Level			
Australia	Iran	Egypt	Tanzania
Israel	Mauritius	Syria	Yemen
Singapore	Oman	South Africa	Sudan
Qatar	Sri Lanka	Indonesia	Mozambique
UAE	Jordan	Iraq	
Bahrain	Thailand	India	
Kuwait		Kenya	
Saudi Arabia		Bangladesh	
Malaysia		Pakistan	
		Myanmar	

Gender Inequality Index

Low to Moderate Risk	Medium Risk	High Risk	Very High/Critical Risk
Rank (1-70)	Rank (70 -110)	Rank (110-150)	Rank (150-200)

ASEAN South East Asia	GCC Non-GCC	South Asia Egypt Red Sea Horn	
	Sub-Saharan Africa		
Country Level			
Low to Moderate Risk	Medium Risk	High Risk	Very High/Critical Risk
Rank (1-70)	Rank (70 -110)	Rank (110-150)	Rank (150-200)
Singapore	Sri Lanka	Bangladesh	Pakistan
Australia	Myanmar	Qatar	Mozambique
Israel	South Africa	Syria	Egypt
UAE	Jordan	Tanzania	Sudan
Malaysia	Indonesia	Iraq	Kenya
Bahrain	Iran		India
Kuwait			Saudi Arabia
Oman			Yemen
Thailand			
Mauritius			

Using the Country Risk Assessment Model

The reader should be aware that the Country Risk Model is a data-driven computer model that can show far more correlations in real time than this analysis can begin to portray. Accordingly, the sections that follow provide summary graphic by Subregion, but do not provide a range of graphic by country. This does not mean the assessments did not use the model, and the narratives to provide key benchmark data for the major indices the model ideal draws upon. It simply is not possible to show all of the correlations between key measures that can be portrayed in a dynamic model in a static analysis.

What is critical is the extent to which the various quantitative indicators do correlate closely to the broader narrative and help make summary judgments. These will not always be popular with the countries concerned, but this is scarcely the point of a risk analysis.

The Need for Better Economic Data and Planning

There are other problems the countries in the region badly need to address. These **Figures**, and the detailed economic data in the Chapters that follow, provide broad insights into the kinds of economic pressures that affect the countries in the IOR, and – along with the data in Chapter II – as to how demographic pressures interact with economics. It is important to note, however, that few countries report on the accuracy of their economic data or attempt to provide a clear picture of its timeliness and uncertainty

There are many reasons for these problems. In some cases, countries collect part of the data but do not report it for political reasons. In many cases, they provide estimates without describing the source, methodology, and level of uncertainty. In some cases this is because of a broad failure by governments to follow basic statistical procedures on a global basis. In other cases, it is because governments do not want to disclose their lack of meaningful or reliable data, or because such data are potentially divisive or can be used by opposition movements.

More broadly, many countries report on macroeconomic measures that fail to address the key issues affecting their economies. Few countries report unemployment by age group and none report disguised unemployment – jobs which have no productive output or where more than one individual is doing a job that one person could perform.

Measurements of poverty levels do not reflect age, and the threshold for poverty is set so low that people well above the poverty level can be deeply dissatisfied with their lives. In many countries – even including some of the “wealthy” Gulf oil states -- this present serious problem in terms of being able to marry or acquire housing.

Other factors affect many countries. A larger population of older citizens presents different problems in terms of employment and income, and further increases the high dependency ratio caused by large numbers of children. Urbanization has reached far higher levels than the data on most countries reflect, with large numbers of rural poor living in the equivalent of slums. It has also deeply disturbed the previous social structure and traditional safety net, and often pushed different religious, sectarian, and ethnic groups into new mixes – sometimes with serious fault lines.

The interaction between weak governance and poor economic policies creates additional problems. Most governments in the region create serious barriers in terms of doing business and economic growth. Most State sectors are badly mismanaged, and many countries are deeply corrupt and pursue a form of crony capitalism that leads to poor distribution of wealth and often serious pressure on the middle class. The failure to fully integrate women into the political structure and economy adds to these problems, not simply as a human rights problem, but because it sharply restricts the productivity gain within the labor force and economy as a whole.

Many, if not most, governments in the IOR need to refocus their collection of economic data, and their analysis of that data, on the problems that limit development, limit the wealth of their citizens, and help to divide their nation and reduce its stability. A risk assessment model cannot be better than the data that are available, but far more importantly, governments cannot plan for credible solutions to problems they ignore or fail to understand.

II. DEMOGRAPHIC TRENDS IN THE IOR REGION

The human dimension of the IOR varies vastly by country and sub-region. **Figure II.1**, however, shows the total population of the IOR by Subregion, the total GDP in each Subregion, and the average GDP per capita. It is clear that there are massive disparities in the given parts of the IOR, and a region that accounted from 35% of the total population of the world in 2010.

Key Population Trends

Many key demographic data and trends are shown by country. **Figure II.1** to **Figure II.4** do, however, provide an overview of these data.

- **Figure II.1** shows that the growth of the population in the IOR will continue to create major region-wide demographic pressure through at least 2050.
- **Figure II.2** shows the Subregions have radically different per capita incomes – differences that often apply to the countries within the Subregion and that disguised what are usually sharply skewed patterns of income distribution that favor the very rich.
- **Figure II.3** reinforces this point, showing just how much population growth in India alone affects the demographics of the IOR and the world. **Figure II.3** also projects a population crossover between India and China in the year 2025. After 2025, the population in India continues to climb whereas China decreases in the following years.
- **Figure II.4** shows and IMF estimate of trend in estimated GDP per capita. There are major uncertainties in such projection, but it seems probable that a comparison of the population trends in **Figure II.1** and **Figure II.2** with GDP per capita trends in **Figure II.4** indicate that a rough correlation exists between limited population growth – or exceptional wealth from natural resources – and the trends in GDP per capita.

These trends, and the analysis of population growth for the countries in each Subregion, show that national population trends- and their interaction with political stability and sound economic policies – have a major impact on a given countries future that varies sharply within each Subregion. As the more detailed analysis in Chapter II indicates, however, there do seem to be several broad trends affect the entire IOR region:

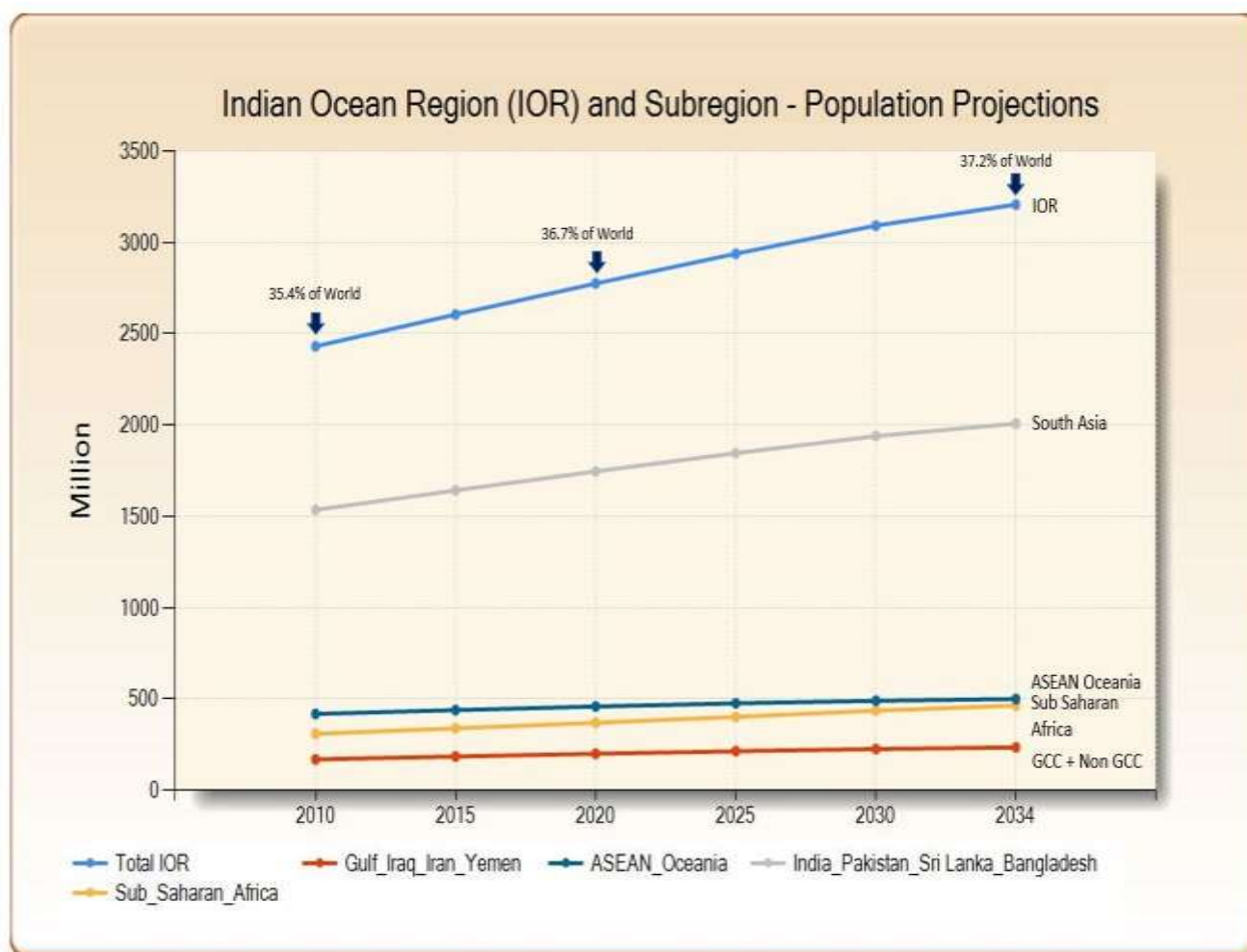
- In many countries, the population is very young with up to 40% under the age of 23, and very high dependency ratios.
- Job-creating levels of education have lagged badly behind population growth, creating high levels of direct and disguised unemployment and creating a serious source of instability in terms of disenfranchised young men.
- Population growth has pushed people off of the land and into cities, creating hyperurbanization and new sources of underemployment and tension.
- Housing, water, power, and infrastructure have not caught up with population growth and economic need and have non near-term prospect of doing so.
- Population pressure and urban migration have increased sectarian, ethnic, tribal, and regional tensions.
- Economies have become increasingly import dependent, or dependent on exploiting low cost labor, rather than leading to stable job creation and social structures.

As the upheavals in the Arab world and the very different tensions in Thailand have shown, these demographic forces present serious underlying problems compounded by other internal tensions, corruption and weak governance, crony capitalism without adequate regulation, and growing inequality in the distribution of income. These structural pressures are a source of growing concern in many nations in the IOR

**Figure II.1: Population trends in IOR Subregions by Country: 1950 to 2050
(Millions)**

Country	1950	1980	2000	2013	2025	2050
Australia	8.3	14.6	19.1	22.3	25.1	29.0
Bahrain	0.114	0.358	0.655	1.3	11.6	1.8
Bangladesh	45.6	87.9	1132.2	163.7	197.7	250.2
Comoros	0.148	0.340	0.545	0.752	0.906	1.2
Djibouti	0.079	0.326	0.669	0.792	1.01	1.4
Egypt	21.2	42.6	65.2	85.3	103.7	137.9
Eritrea	1.4	2.6	4.2	6.2	8.0	11.4
India	369.9	684.9	1,006.3	1,220.8	1,396.0	1,656.6
Indonesia	83.0	150.3	214.1	251.2	276.7	300.2
Iran	16.4	39.7	68.6	79.9	90.5	100.0
Iraq	5.2	13.2	22.7	31.9	40.4	56.3
Israel	1.3	3.7	6.1	7.7	9.0	10.8
Jordan	0.56	2.2	4.7	6.5	7.9	11.2
Kenya	6.1	16.3	30.6	44.0	53.2	70.8
Kuwait	0.14	1.4	2.0	2.7	3.2	3.9
Madagascar	4.6	8.7	15.7	22.6	30.2	45.8
Malaysia	6.4	13.5	23.2	29.6	34.7	42.9
Mauritius	0.48	0.96	1.2	1.3	1.4	1.4
Mozambique	6.3	12.1	18.0	24.1	32.3	59.0
Myanmar	19.5	33.3	47.4	55.2	61.7	70.7
Oman	0.488	1.18	2.4	3.2	4.0	5.4
Pakistan	40.4	85.2	152.4	193.2	228.4	290.8
Qatar	0.251	0.229	0.640	2.04	2.6	2.6
Saudi Arabia	3.8	10.0	21.3	26.93	31.9	40.3
Seychelles	0.033	0.064	0.079	0.091	0.099	0.100
Singapore	1.020	2.4	4.1	5.5	6.7	8.6
Somalia	2.4	5.8	7.5	10.3	13.3	22.6
South Africa	13.6	29.3	45.1	48.6	48.7	49.4
Sri Lanka	7.5	15.1	19.0	21.7	23.6	25.2
Sudan	6.5	14.8	27.1	34.8	42.7	59.11
Syria	3.5	8.8	16.5	22.5	26.5	33.7
Tanzania	7.9	18.7	33.2	48.3	66.9	118.6
Thailand	20.0	47.0	62.9	67.5	69.6	66.1
Turkey	21.1	45.0	67.3	80.7	90.5	101.0
UAE	0.072	0.100	3.2	5.5	7.1	8.0
Yemen	4.8	9.1	17.2	25.3	32.8	46.1

Source: US Census Bureau, International Data Base,
<http://www.census.gov/population/international/data/idb/region.php?N=%20Results%20&T=13&A=both&RT=0&Y=1950,1980,2000,2013,2025,2050>.

Figure II.2: Indian Ocean Region - Population Projections By Subregion

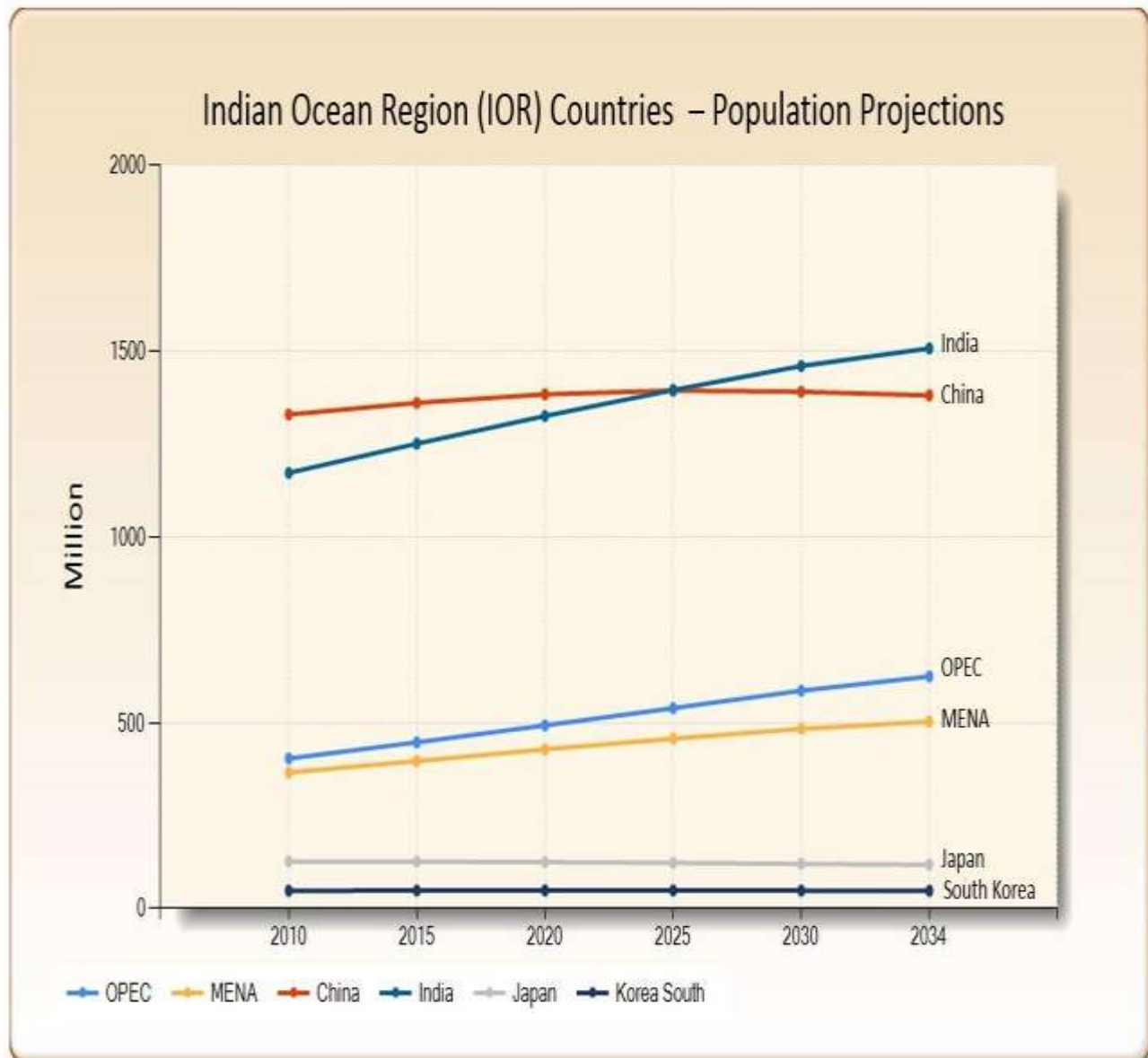
Subregions:	Population (million)	Current \$GDP (million)	\$GDP per Capita
GCC	46.39	1,441,838	31,081
Non GCC	172.69	1,022,652	5,922
South Asia	1590.6	2,242,232	1,410
ASEAN South East Asia	427.69	3,287,444	7,687
Sub Saharan Africa	181.18	495,298	2,734
Egypt Red Sea, Horn of Africa	119.86	306,681	2,559
IOR Region	2538.41	8,796,145	3,465
World	6973.74	70,000,000	10,038
IOR as % of World	36.40%	12.57%	34.52%

Source Data: US Bureau of Census, International Statistics.

<http://www.census.gov/population/international/data/idb/informationGateway.php>, and World Bank Data Indicators.

<http://data.worldbank.org/indicator>)

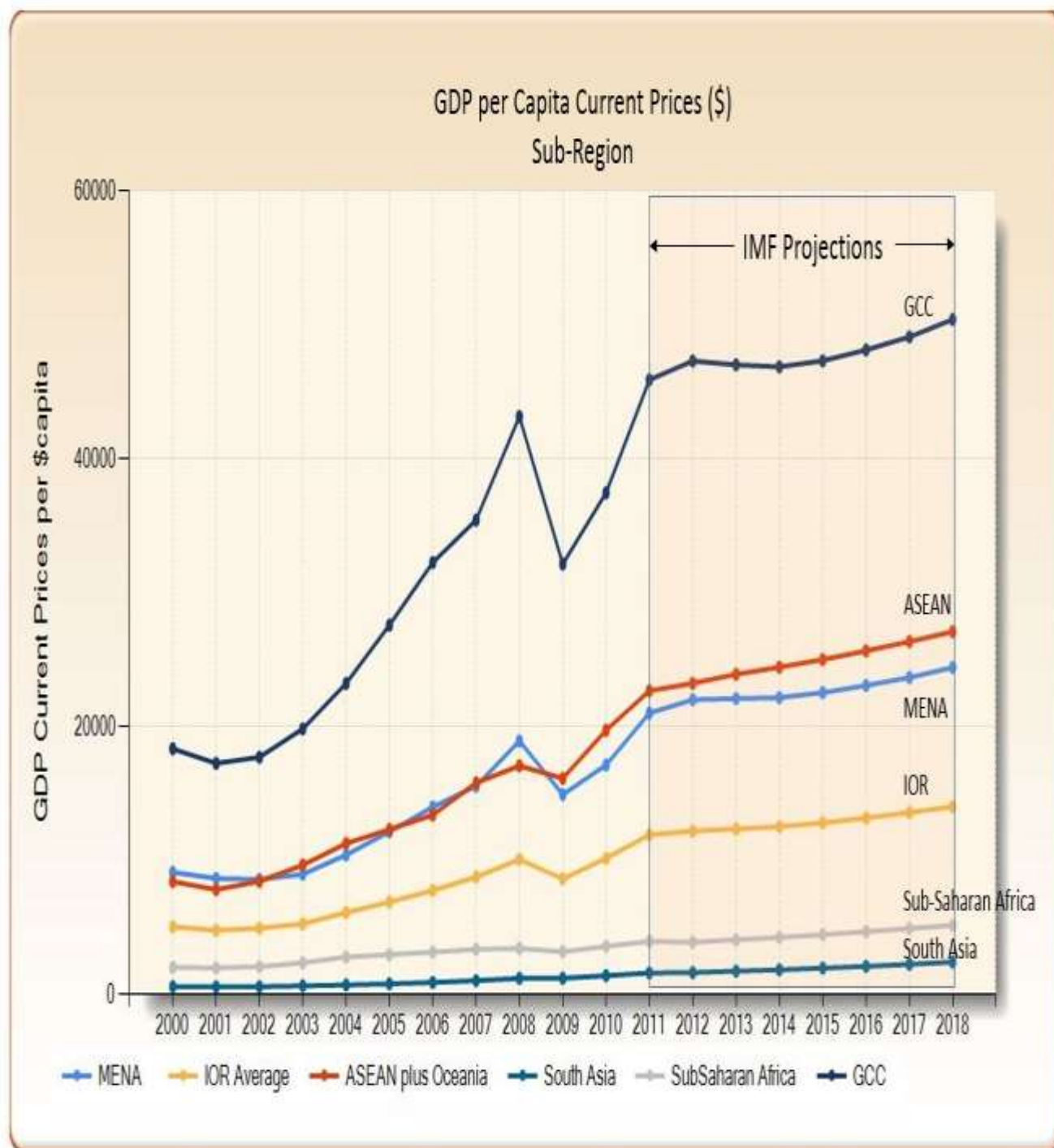
Figure II.3: Population Projections by Key IOR Country and Sub Region Country



(Source Data: US Bureau of Census, International Statistics.

<http://www.census.gov/population/international/data/idb/informationGateway.php>

Figure II.4: Trends in GDP Per Capita by Subregion: 2000-2018



(Source: IMF; World Economic Outlook, October 2013)

The Need for Better Data and Planning

These **Figures**, and the population data in the Chapters that follow, do provide broad insights into the kinds of population pressures that affect the countries in the IOR, and how demographic pressures interact with economics. It is important to note, however, that few countries report on the accuracy of their population data, provide credible breakouts of religious and ethnic divisions, and tie demographic trends to economic trends.

As is the case with the economic data discussed in Chapter I, there are many reasons for these problems. In some cases, countries collect part of the data but do not report it for political reasons. In many cases, they provide estimates without describing the source, methodology, and level of uncertainty. In some cases this is because of a broad failure by governments to follow basic statistical procedures on a global basis. In other cases, it is because governments do not want to disclose their lack of meaningful or reliable data, or because religious, ethnic, and other key population data are potentially divisive or can be used by opposition movements.

More broadly, there are many areas where countries simply fail to come to grips with the need to plan of key social and economic problems. The population data in this chapter, and the discussion of such data in the individual countries in each Subregion that follows, raise issues that bodies like the UN and Arab Development Reports indicate need to be address in far more depth and with far more realism.

Demographic pressures from massive past population growth put a high degree of stress on the governance and economies of most regional states. **Figure II.5** shows that the region has a number of countries with very young populations, and with the exception of a few Gulf and Southeast Asia states, these present major challenges in terms of education, job creation, and infrastructure.

Figure II.6 provides another key indicator, showing the trends in urbanization. It is a rough indicator of the extent to which populations have shifted from a primarily rural economy and traditional society as late as 1960 to a market-driven urban society where most of the population no longer has traditional social ties, local culture, and past ties to a local or regional political power structure.

The data do, however, often understate the level of urbanization because of a steady migration away from the land to urban areas – often to urban slums with limited housing, infrastructure, and services. It does not measure population pressure on the land, and the extent to which massive population increases have push people into marginal housing and jobs in areas where they are still counted as rural, but no longer are involved in agriculture.

In short, there is no easy way to estimate the scale of the mix of population, economic, cultural, and political challenges affecting most of the population in the IOR. Some source provide basic data on employment issues, but while Figures like **Figure II.7** to **Figure II.12** do provide some useful information, they are based on data and measurements that can be deeply misleading, and illustrate the need for better measures of performance and risk with n the IOR.

Few countries report fully credible unemployment by age group and none report disguised unemployment – jobs which have no productive output or where more than one individual is doing a job that one person could perform. This is critical in both poor countries and the more wealthy GCC countries which have grossly inflated state sectors that to mask real-world lack of useful output and productivity gain.

Measurements of poverty levels do not reflect age, and are not used as a key measurement in this analysis because they are often badly dated and the threshold for poverty is set so low that people well above the poverty level can be deeply dissatisfied with their lives. In many countries – even including some of the “wealthy” Gulf oil states -- this present serious problem in terms of being able to marry or acquire housing.

Other factors affect many countries in the IOR. A growing population of older citizens will present different problems in terms of employment and income, and further increases the high dependency ratio caused by large numbers of children. Urbanization has reached far higher levels than the data on most countries reflect, with large numbers of rural poor living in the equivalent of slums. It has also deeply disturbed the previous social structure and traditional safety net, and often pushed different religious, sectarian, and ethnic groups into new mixes – sometimes with serious fault lines.

The uprisings in the Arab world since 2011, and the political turmoil in Thailand, are examples of the dangers in failing to collect the data that can provide clear warning of the risks posed by these developments. A failure to quantify and analyze key developments may avoid political problems in the short to mid-term, but regimes and nations will inevitably pay the price.

Figure II.5: “Youth Bulges” and Aging Populations in IOR Countries

	Total	0 to14 (%)	15 to 24 (%)	25 to 64(%)	65+(%)	Total
Australia	22015576	18.1	13.5	54.2	14.2	100
Bahrain	1248348	20.2	15.9	61.4	2.5	100
Bangladesh	161083804	33.6	18.8	42.8	4.8	100
Djibouti	774389	34.4	22	40.3	3.3	100
Egypt	83688164	32.4	18.2	44.6	4.8	100
Eritrea	6086495	41.7	19.9	34.9	3.5	100
India	1205073612	29.2	18.2	46.9	5.7	100
Indonesia	248645008	27.1	17.2	49.3	6.4	100
Iran	78868711	23.8	20.8	50.2	5.2	100
Iraq	31129225	37.6	19.7	39.5	3.2	100
Israel	7590758	27.5	15.7	46.5	10.3	100
Jordan	6508887	34.9	20.1	40	5	100
Kenya	43013341	42.6	19.2	35.5	2.7	100
Kuwait	2646314	25.8	15.5	56.8	1.9	100
Madagascar	22005222	41.4	20.6	35	3	100
Malaysia	29179952	29.3	17.2	48.3	5.2	100
Mauritius	1313095	21.5	15.9	55	7.6	100
Mozambique	23515934	45.7	20.7	30.7	2.9	100
Myanmar	54584650	27	18.8	49	5.2	100
Oman	3090150	30.8	20.5	45.6	3.1	100
Pakistan	190291129	34.7	21.7	39.3	4.3	100
Qatar	1951591	12.6	14.4	72.2	0.8	100
SaudiArabia	26534504	28.8	19.8	48.4	3	100
Seychelles	90024	21.4	15	56.5	7.1	100
Singapore	5353494	13.9	18.6	59.8	7.7	100
Somalia	10085638	44.5	18.8	34.2	2.5	100
South Africa	48810427	28.4	21	44.8	5.8	100
SriLanka	21481334	24.9	15.3	51.9	7.9	100
Sudan	34206710	42.1	19.8	35	3.1	100
Syria	22530746	34.6	21.1	40.6	3.7	100
Tanzania	46912768	44.9	19.4	32.6	3.1	100
Thailand	67091089	19.5	15.1	55.9	9.5	100
UnitedArabE	5314317	20.5	14	64.6	0.9	100
Yemen	24771809	42.5	21.1	33.8	2.6	100

Source: U.S. Census Bureau (<http://www.census.gov/population/international/data/idb/informationGateway.php>).

Figure II.6: Urbanization in IOR Countries: 2000-2011 – Part One

Country	1960	1970	1980	1990	2000	2005
Australia	81.92	85.27	85.76	85.40	87.17	88.18
Bahrain	82.36	83.78	86.10	88.14	88.37	88.42
Bangladesh	5.35	7.59	14.85	19.81	23.59	25.64
Comoros	13.44	19.39	23.22	27.87	28.08	27.88
Djibouti	51.48	61.78	72.10	75.65	76.53	76.76
Egypt	38.43	42.21	43.86	43.48	42.80	43.03
Eritrea	10.08	12.59	14.36	15.80	17.62	19.06
India	18.10	19.76	23.10	25.55	27.67	29.24
Indonesia	14.83	17.07	22.10	30.58	42.00	45.94
Iran	34.40	41.21	49.69	56.33	64.04	67.56
Iraq	44.45	56.15	65.52	69.71	67.83	67.04
Israel	77.67	84.20	88.58	90.36	91.20	91.52
Jordan	51.56	55.97	59.94	72.23	79.81	81.18
Kenya	7.61	10.30	15.58	16.75	19.89	21.68
Kuwait	75.77	85.66	94.78	97.97	98.11	98.18
Lebanon	44.06	59.48	73.67	83.12	86.00	86.57
Madagascar	10.99	14.10	18.52	23.57	27.12	28.81
Malaysia	27.26	33.45	42.04	49.79	61.98	67.58
Mauritius	33.94	42.03	42.35	43.90	42.67	42.18
Mozambique	3.86	5.78	13.11	21.10	29.10	30.00
Myanmar	19.58	22.83	23.97	24.61	27.22	29.39
Oman	17.59	29.67	47.56	66.10	71.57	71.91
Pakistan	22.39	24.82	28.07	30.58	33.14	34.48
Qatar	85.64	88.38	89.36	92.79	96.31	97.45
Saudi Arabi	32.75	48.67	65.86	76.58	79.85	80.98
Seychelles	28.76	39.07	49.37	49.27	50.40	51.61
Singapore	100.00	100.00	100.00	100.00	100.00	100.00
Somalia	17.84	22.68	26.76	29.66	33.25	35.16
South Africa	46.74	47.81	48.43	52.04	56.89	59.26
Sri Lanka	16.67	19.51	18.78	17.20	15.71	15.13
Sudan	11.27	16.52	19.96	28.61	32.50	32.76
Syria	37.41	43.35	46.71	48.93	51.95	53.78
Tanzania	5.40	7.85	14.56	18.88	22.31	24.19
Thailand	19.78	20.89	26.79	29.42	31.14	32.24
UAE	73.93	77.70	80.71	79.05	80.24	82.26
Yemen	9.49	13.30	16.53	20.93	26.27	28.94

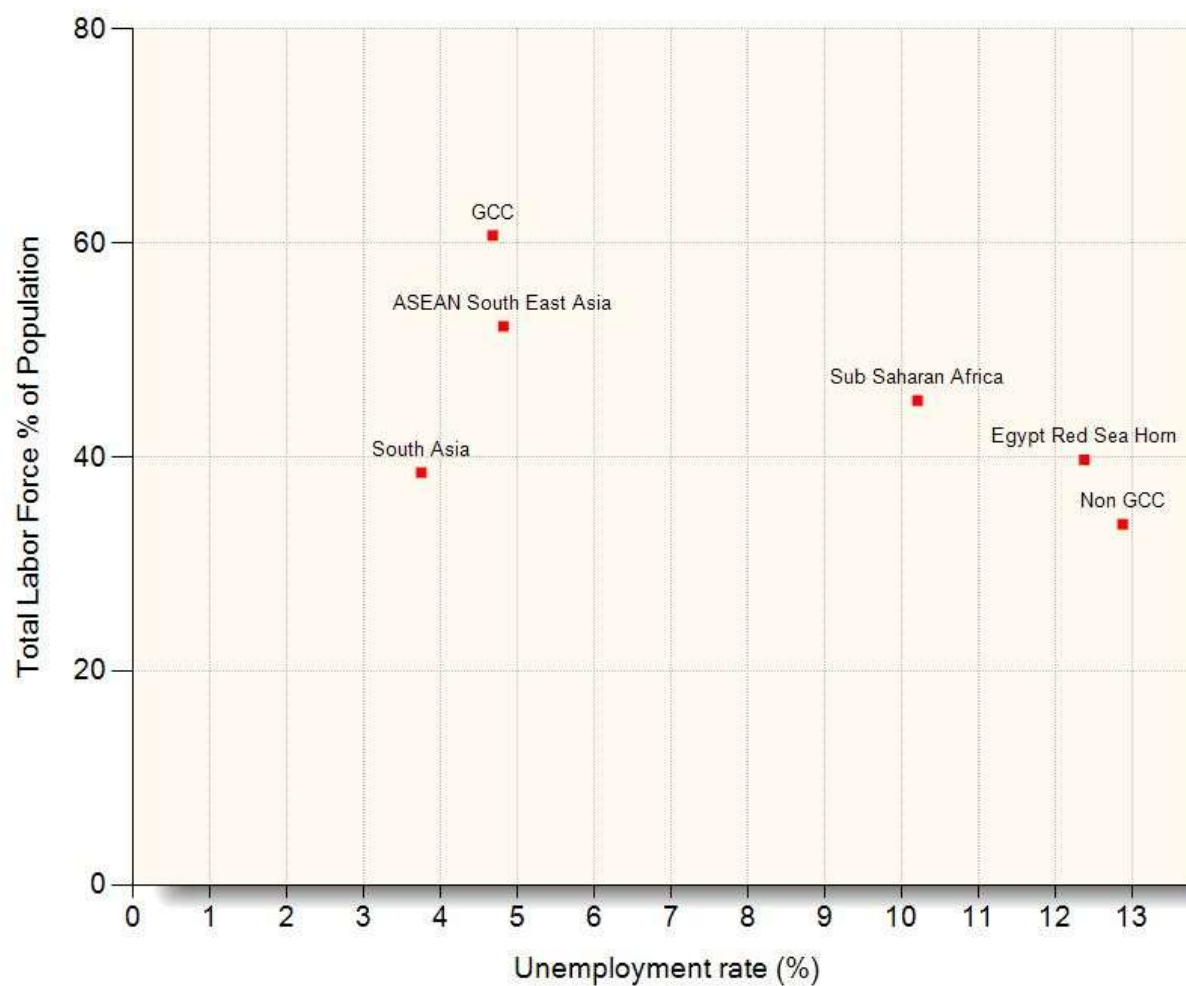
Figure II.6: Urbanization in IOR Countries: 2000-2011 – Part Two

Country	2000	2005	2010	2011
Australia	87.17	88.18	89.05	89.19
Bahrain	88.37	88.42	88.62	88.69
Bangladesh	23.59	25.64	27.89	28.39
Comoros	28.08	27.88	27.97	28.07
Djibouti	76.53	76.76	77.00	77.08
Egypt	42.80	43.03	43.38	43.54
Eritrea	17.62	19.06	20.90	21.36
India	27.67	29.24	30.93	31.30
Indonesia	42.00	45.94	49.92	50.69
Iran	64.04	67.56	68.94	69.08
Iraq	67.83	67.04	66.54	66.50
Israel	91.20	91.52	91.82	91.88
Jordan	79.81	81.18	82.47	82.71
Kenya	19.89	21.68	23.57	23.98
Kuwait	98.11	98.18	98.24	98.25
Lebanon	86.00	86.57	87.14	87.25
Madagascar	27.12	28.81	31.93	32.57
Malaysia	61.98	67.58	72.01	72.68
Mauritius	42.67	42.18	41.78	41.80
Mozambique	29.10	30.00	30.96	31.22
Myanmar	27.22	29.39	32.08	32.65
Oman	71.57	71.91	73.19	73.44
Pakistan	33.14	34.48	35.88	36.22
Qatar	96.31	97.45	98.66	98.77
Saudi Arabia	79.85	80.98	82.08	82.29
Seychelles	50.40	51.61	53.24	53.62
Singapore	100.00	100.00	100.00	100.00
South Africa	56.89	59.26	61.55	61.99
Sri Lanka	15.71	15.13	15.04	15.13
Sudan	32.50	32.76	33.08	33.24
Syria	51.95	53.78	55.67	56.07
Tanzania	22.31	24.19	26.28	26.74
Thailand	31.14	32.24	33.73	34.11
UAE	80.24	82.26	84.04	84.33
Yemen	26.27	28.94	31.74	32.32

Source: World Bank World Development Indicators.

<http://data.worldbank.org/indicator/SP.RUR.TOTL.ZS>)

Figure III.7: Trends in Labor Force as a Percent of Population vs. Unemployment Rate as a Percent of Labor

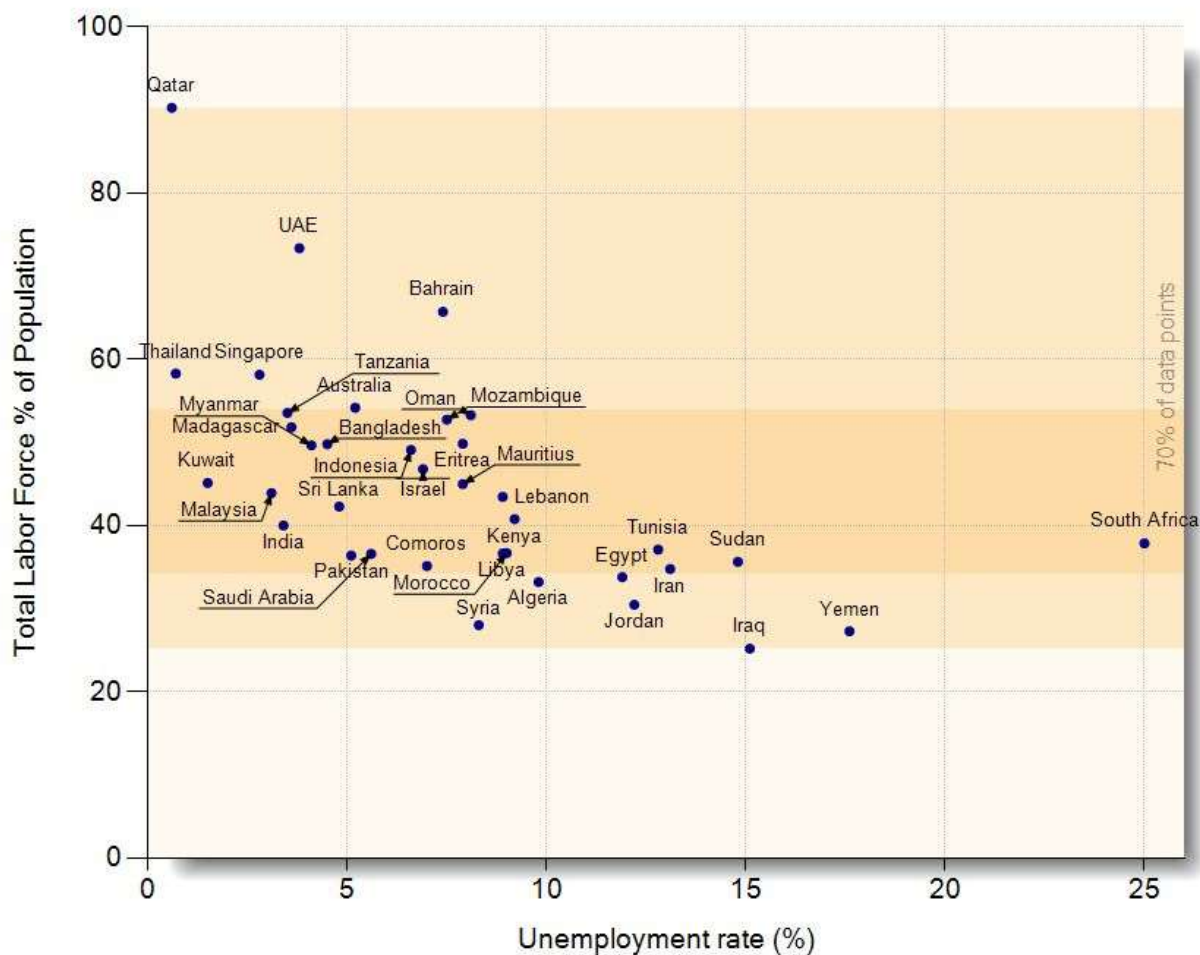


Source: International Labor Organization. Key Indicators of the Labour Market (KILM)

A multi-functional research tool of the ILO consisting of country-level data on 18 key indicators of the labour market from 1980 to the latest available year.

http://www.ilo.org/empelm/what/WCMS_114240/lang--en/index.htm

Figure II.8: Labor Force Participation Rate (% of population) versus Unemployment Rate (%) of Labor Force By Country (2012)

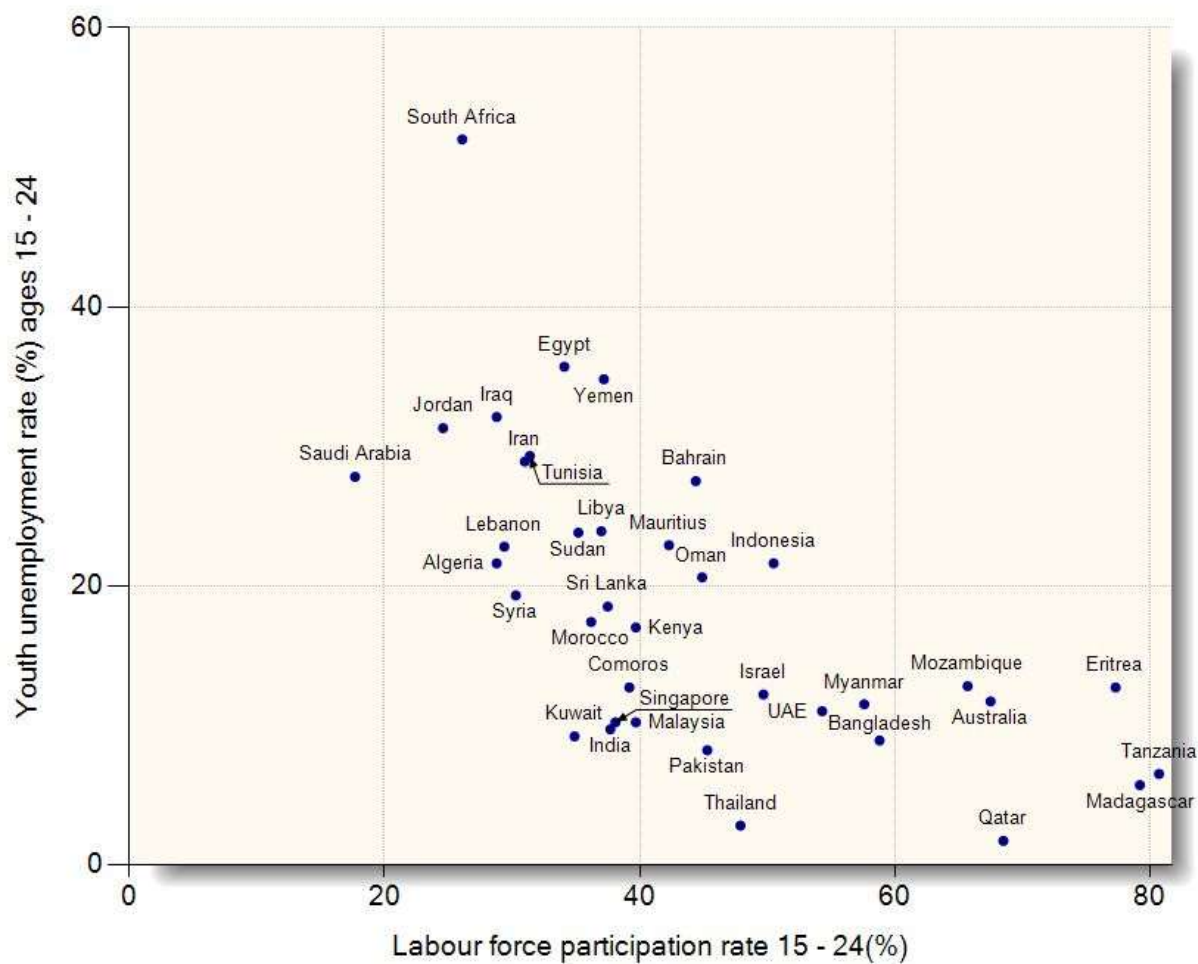


Source: International Labor Organization. Key Indicators of the Labour Market (KILM)

A multi-functional research tool of the ILO consisting of country-level data on 18 key indicators of the labour market from 1980 to the latest available year.

http://www.ilo.org/empelm/what/WCMS_114240/lang--en/index.htm

**Figure II.9: Youth Unemployment Rate versus. Labor Force Participation
(Ages 15 – 24)**

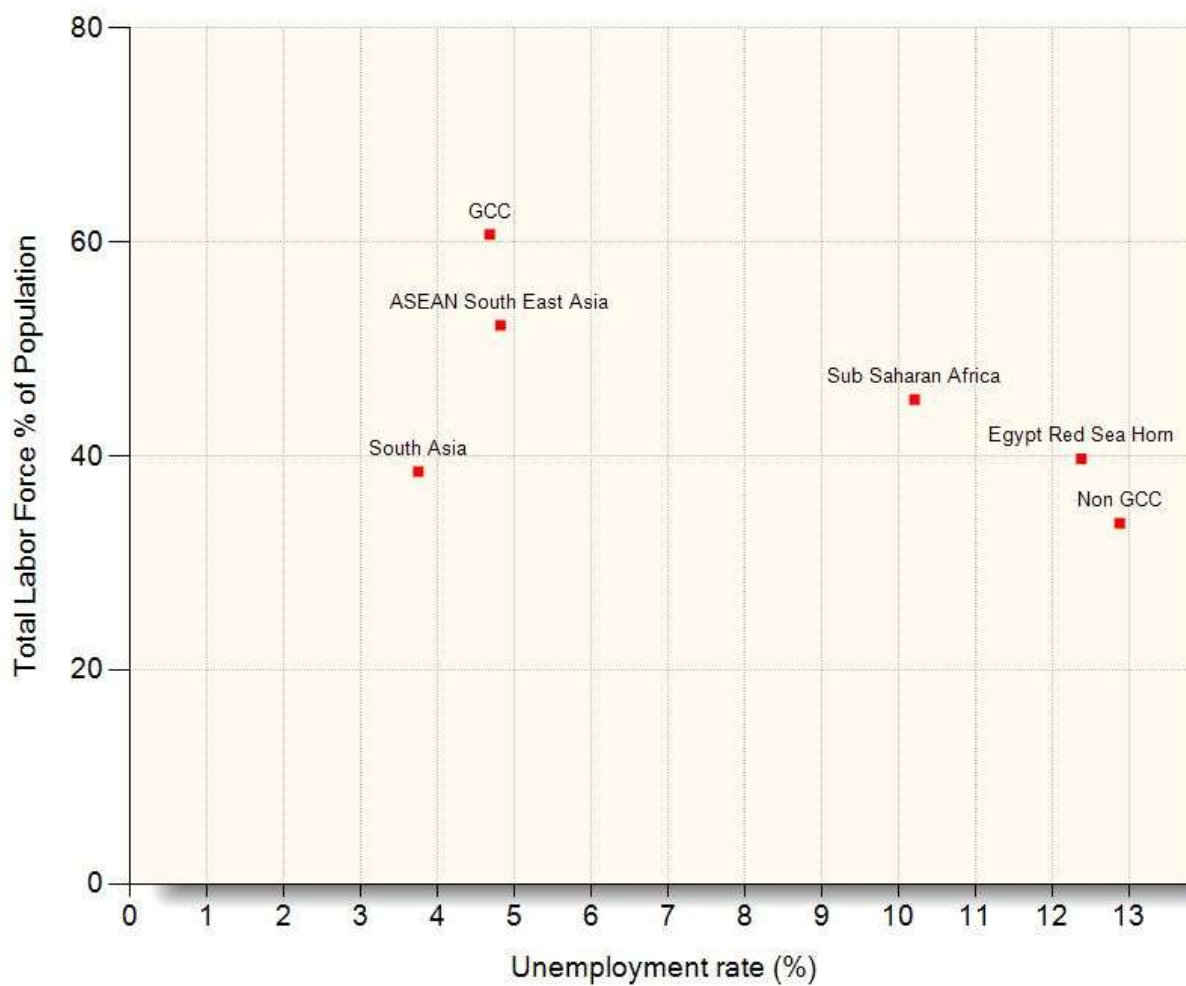


Source: International Labor Organization. Key Indicators of the Labour Market (KILM)

A multi-functional research tool of the ILO consisting of country-level data on 18 key indicators of the labour market from 1980 to the latest available year.

http://www.ilo.org/empelm/what/WCMS_114240/lang--en/index.htm

Figure II.10: Labor Force as % of Population Versus Unemployment Rate as % of Labor by Subregion



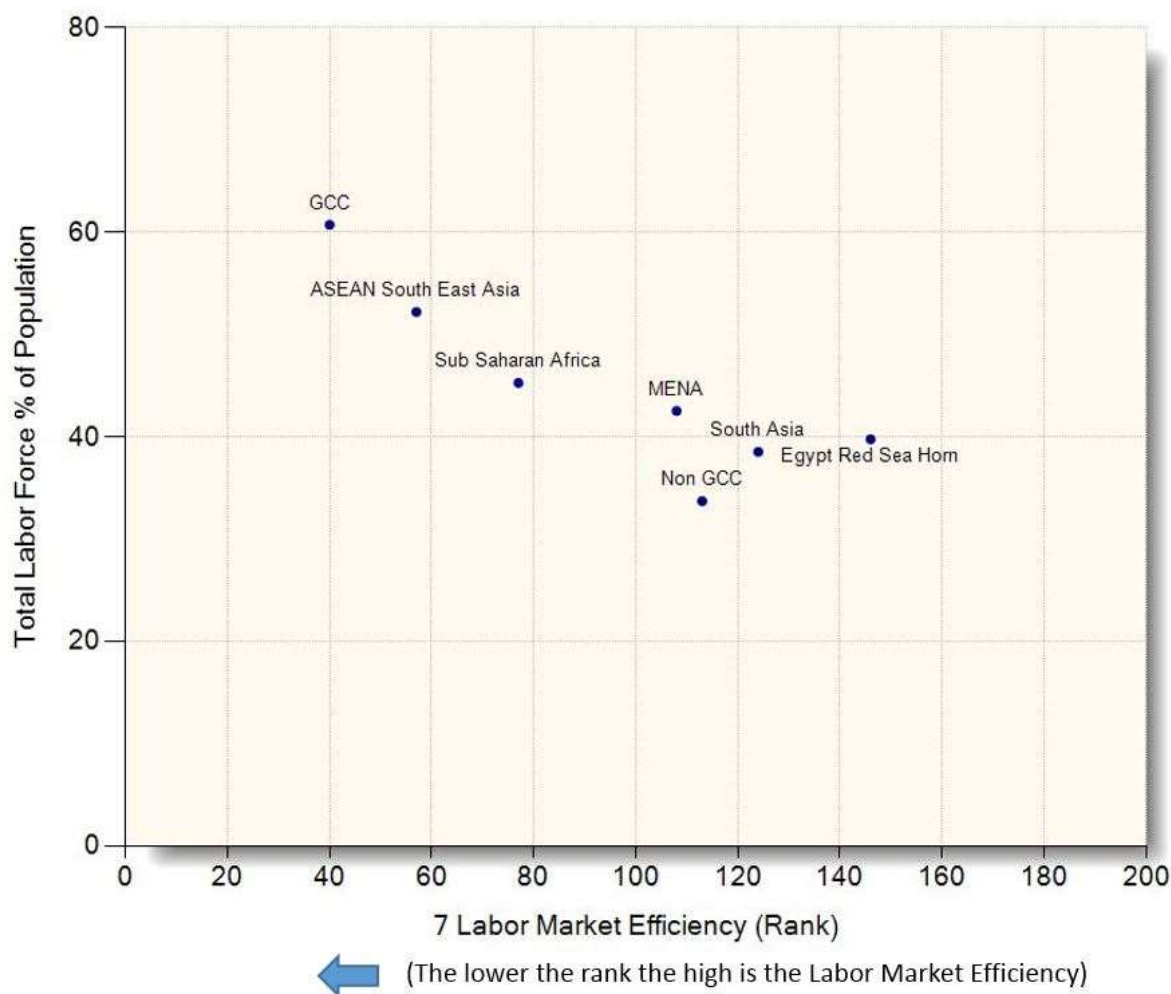
Source: International Labor Organization. Key Indicators of the Labour Market (KILM)

A multi-functional research tool of the ILO consisting of country-level data on 18 key indicators of the labour market from 1980 to the latest available year.

http://www.ilo.org/empelm/what/WCMS_114240/lang--en/index.htm

A well performing economy is one with High Labor Force as a percent of the population, and with a low Labor Market Efficiency Rank. **Figure II.11** shows these indicators and the resulting risk level on a Subregion level. **Figure II.12** displays the indicators on national level:

Figure II.11: Sub-regional Labor Force Participation Rate (% of population) versus Labor Market Efficiency – Subregional Level



Low to Moderate Risk
Rank (1-70)

GCC
ASEAN South East Asia

Medium Risk
Rank (70 -110)

Sub-Saharan Africa

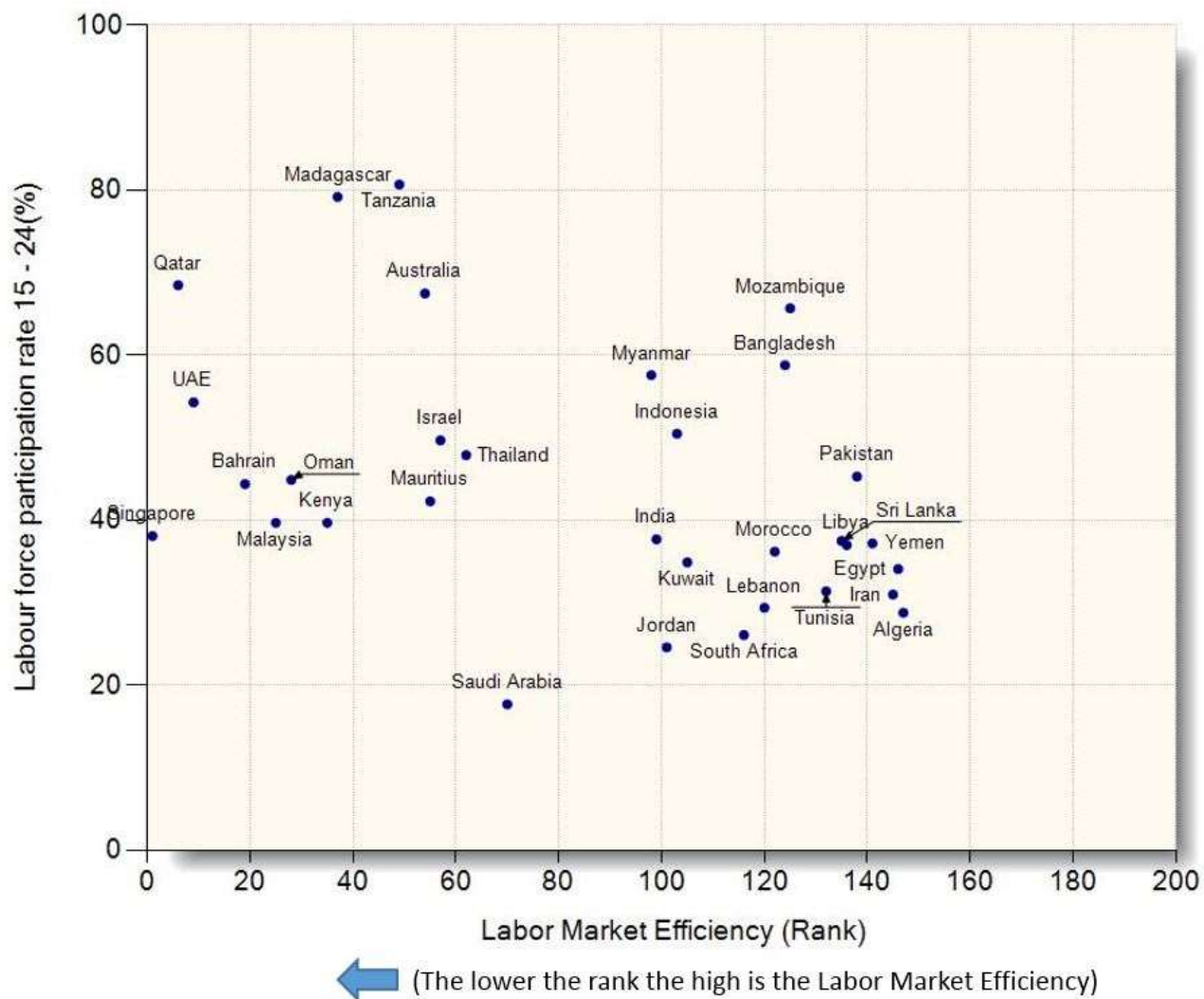
High Risk
Rank (110-150)

Non-GCC
South Asia
Egypt Red Sea Horn

Very High/Critical Risk
Rank (150-200)

Source: IMF, *World Economic and Financial Surveys*, Regional Economic Outlook, Middle East and Central Asia, November 2013)

Figure II.12: Sub-regional Labor Force Participation Rate (% of population) versus Labor Market Efficiency – National Level



Low to Moderate Risk Rank (1-70)	Medium Risk Rank (70 -110)	High Risk Rank (110-150)	Very High/Critical Risk Rank (150-200)
Singapore	Saudi Arabia	South Africa	
Qatar	Myanmar	Bangladesh	
UAE	India	Mozambique	
Bahrain	Jordan	Sri Lanka	
Malaysia	Indonesia	Pakistan	
Oman	Kuwait	Yemen	
Kenya		Iran	
Madagascar		Egypt	
Tanzania			
Australia			
Mauritius			
Israel			
Thailand			

III. GLOBAL ECONOMIC GROWTH AND ENERGY TRENDS AFFECTING THE IOR REGION

One key trend shaping the IOR's global strategic importance is the flow of its petroleum exports to world markets. This flow depends to a high degree on the stability and security of the Gulf states, and the IOR's maritime chokepoints. It also, however, depends on how the US, China, and the Asian states outside the IOR react to a fundamental shift in the flow of energy trade towards Asia.

The world economy and the economies of all petroleum importing states are dependent on to some degree on how Gulf oil and gas exports through the IOR affect the price and volume of energy exports in a world market. This dependence on Gulf petroleum, however, is relative. The key shifts taking place in the flow of Gulf oil – and the key shifts taking place in IOR maritime traffic and – are being determined as the rise in Asian energy demand for IOR exports increases relative to demand in other regions.

Much of the IOR's stability and security depends on how the economic growth of countries in the IOR, and energy importing countries outside it, affect the overall patterns in trade and investment, and particularly the flow of Gulf energy export's – the IOR's most significant single impact on the global economy.

Efforts to predict long-term global economic growth are notoriously uncertain, and their value is particularly uncertain if they are tied to an explicit model of their impact on world energy demand. The International Energy Information Agency (EIA) and the Energy Information Agency (EIA) of the US Department of Energy (DOE) carry out the largest and best such modeling efforts in the world, and ones that are very similar to the models used by the Organization of Petroleum Exporting Countries (OPEC).

IEA Estimates

The Executive Summary of the IEA *World Energy Outlook for 2013* projects that that global energy demand for Gulf oil exports will rise steadily in spite of increases in oil production in other areas and in unconventional liquids. Moreover, it projects that the world will become even more dependent on the Gulf after 2020,¹⁰

The center of gravity of energy demand is switching decisively to the emerging economies, particularly China, India and the Middle East, which drive global energy use one-third higher. In the New Policies Scenario, the central scenario of *WEO-2013*, China dominates the picture within Asia, before India takes over from 2020 as the principal engine of growth. Southeast Asia likewise emerges as an expanding demand center (a development covered in detail in the *WEO Special Report: Southeast Asia Energy Outlook*, published in October 2013). China is about to become the largest oil-importing country and India becomes the largest importer of coal by the early 2020s. The United States moves steadily towards meeting all of its energy needs from domestic resources by 2035. Together, these changes represent a re-orientation of energy trade from the Atlantic basin to the Asia-Pacific region. High oil prices, persistent differences in gas and electricity prices between regions and rising energy import bills in many countries focus attention on the relationship between energy and the broader economy. The links between energy and development are illustrated clearly in Africa, where, despite a wealth of resources, energy use per capita is less than one-third of the global average in 2035. Africa today is home to nearly half of the 1.3 billion people in the world without access to electricity and one-quarter of the 2.6 billion people relying on the traditional use of biomass for cooking. Globally, fossil fuels continue to meet a dominant share of global energy demand, with implications for the links between energy, the environment and climate change.

The capacity of technologies to unlock new types of resources, such as light tight oil (LTO) and ultra-deepwater fields, and to improve recovery rates in existing fields is pushing up estimates of the amount of oil that remains to be produced. But this does not mean that the world is on the cusp of a new era of oil abundance. An oil price that rises steadily to \$128 per barrel (in year-2012 dollars) in 2035 supports the development of these new resources, though no country replicates the level of success with LTO that is making the United States the largest global oil producer. The rise of unconventional oil (including LTO) and natural gas liquids meets the growing gap between global oil demand, which rises by 14 mb/d to reach 101 mb/d in 2035, and production of conventional crude oil, which falls back slightly to 65 mb/d.

The Middle East, the only large source of low-cost oil, remains at the center of the longer-term oil outlook. The role of OPEC countries in quenching the world's thirst for oil is reduced temporarily over the next ten years by rising output from the United States, from oil sands in Canada, from deepwater production in Brazil and from natural gas liquids from all over the world. But, by the mid-2020s, non-OPEC production starts to fall back and countries in the Middle East provide most of the increase in global supply. Overall, national oil companies and their host governments control some 80% of the world's proven-plus-probable oil reserves.

The new geography of demand and supply means a re-ordering of global oil trade flows towards Asian markets, with implications for co-operative efforts to ensure oil security. The net North American requirement for crude imports all but disappears by 2035 and the region becomes a larger exporter of oil products. Asia becomes the unrivalled center of global oil trade as the region draws in – via a limited number of strategic transport routes – a rising share of the available crude oil. Deliveries to Asia come not only from the Middle East (where total crude exports start to fall short of Asian import requirements) but also from Russia, the Caspian, Africa, Latin America and Canada. New export-oriented refinery capacity in the Middle East raises the possibility that oil products, rather than crude, take a larger share of global trade, but much of this new capacity eventually serves to cater to increasing demand from within the region itself.

An earlier IEA analysis in the 2012 edition of the *World Energy Outlook* provided more detail on Gulf energy production, and its broader conclusions track closely with the IEA's 2013 estimates:¹¹

Growth in oil consumption in emerging economies, particularly for transport in China, India and the Middle East, more than outweighs reduced demand in the OECD, pushing oil use steadily higher in the New Policies Scenario. Oil demand reaches 99.7 mb/d in 2035, up from 87.4 mb/d in 2011, and the average IEA crude oil import price rises to \$125/barrel (in year-2011 dollars) in 2035 (over \$215/barrel in nominal terms). The transport sector already accounts for over half of global oil consumption, and this share increases as the number of passenger cars doubles to 1.7 billion and demand for road freight rises quickly.

The latter is responsible for almost 40% of the increase in global oil demand: oil use for trucks – predominantly diesel – increases much faster than that for passenger vehicles, in part because fuel-economy standards for trucks are much less widely adopted. Non-OPEC oil output steps up over the current decade, but supply after 2020 depends increasingly on OPEC. A surge in unconventional supplies, mainly from light tight oil in the United States and oil sands in Canada, natural gas liquids, and a jump in deepwater production in Brazil, push non-OPEC production up after 2015 to a plateau above 53 mb/d, from under 49 mb/d in 2011. This is maintained until the mid-2020s, before falling back to 50 mb/d in 2035.

Output from OPEC countries rises, particularly after 2020, bringing the OPEC share in global production from its current 42% up towards 50% by 2035. The net increase in global oil production is driven entirely by unconventional oil, including a contribution from light tight oil that exceeds 4 mb/d for much of the 2020s, and by natural gas liquids. Of the \$15 trillion in upstream oil and gas investment that is required over the period to 2035, almost 30% is in North America.

...Iraq makes the largest contribution by far to global oil supply growth. Iraq's ambition to expand output after decades of conflict and instability is not limited by the size of its resources or by the costs of producing them, but will require coordinated progress all along the energy supply chain, clarity on how Iraq plans to derive long-term value from its hydrocarbon wealth and successful consolidation of a domestic consensus on oil policy. In our projections, oil output in Iraq exceeds 6 mb/d in 2020 and rises to more than 8 mb/d in 2035. Iraq becomes a key supplier to fast-growing Asian markets, mainly China, and the second-largest global exporter by the 2030s, overtaking Russia. Without this supply growth from Iraq, oil markets would be set for difficult times, characterized by prices that are almost \$15/barrel higher than the level in the New Policies Scenario by 2035.

The EIA Estimates

The EIA provides an international assessment of the relationship between economic growth and growth in energy demand – including demand for energy exports from the Gulf and through the Indian Ocean – and is issued every two years. This document is called the International Energy Outlook (IEO), and the 2013 edition summarizes the impact of economic growth on energy demand as follows:¹²

“Economic growth is among the most important factors to be considered in projecting changes in world energy consumption. In *IEO2013*, assumptions about regional economic growth—measured in terms of real GDP in 2005 U.S. dollars at purchasing power parity rates—underlie the projections of regional energy demand. World economic growth has fluctuated substantially in recent years, with the global economy contracting by 1.1 percent in 2009 and growing by 4.9 percent in 2010, followed by more modest growth of 3.8 percent in 2011 and 2.8 percent in 2012.

...from 2010 to 2040, real world GDP growth averages 3.6 percent (on a purchasing power parity basis). The growth rate slows over the period, peaking at 4.0 percent between 2015 and 2020 and declining to 3.5 percent between 2020 and 2040. Global economic growth in the Reference case is led by the emerging economies. Real GDP growth from 2010 to 2040 averages 4.7 (Figure 15) percent for the non-OECD region, compared with 2.1 percent (Figure 14) for the OECD region. Slower global economic growth after 2020 is primarily a result of slower growth in the emerging economies, particularly China.”

Like virtually every economic and energy forecast, the EIA projections indicate that economic growth will be far larger in the case of developing economies and regions than in the developed countries that are members of the Organization for Economic Cooperation and Development (OECD).¹³

OECD (Developed) Economies

As is shown in **Figure III.1** through **Figure III.3**, the EIA projects that economic growth will be limited in Canada, the US, the developed nations of Europe, and Japan – although it projects that South Korea will be a notable exception, and growth will be significant in Australia and New Zealand.¹⁴

...from 2010 to 2040, real GDP growth in the OECD region averages 2.1 percent per year (on a purchasing power parity basis). Debt and demographic changes are common problems among the slower-growing OECD countries. The debt problems have an effect both in the short term and over the long term, as governments raise taxes and cut spending to lower debt-to-GDP ratios. The demographic challenges grow stronger in the later years of the projection. Even with those concerns, however, slower-growing OECD countries still have the advantages of strong institutions and substantial human capital, along with good infrastructure.

In OECD Europe, for example, many countries are carrying high government debt levels and have seen their population growth rates fall. Gross government debt relative to GDP in countries that use the euro was near 95 percent in 2010, and the region's working-age population is or soon will be in decline. In the near term, most European countries will have to deal with the fallout from the European financial crisis and the ensuing credit issues, which have slowed recent GDP gains and depressed investment, longer-term implications for GDP growth through capital formation. OECD Europe is among the slowest growing regions in the Reference case, with real GDP growth averaging 1.8 percent per year from 2010 to 2040, compared with 2.2 percent per year for the OECD as a whole.

Like OECD Europe, Japan is dealing with long-term demographic and debt issues. The ratio of gross government debt to GDP in Japan was nearly 200 percent in 2010, and the working-age population is declining. The new administration of Shinto Abe has pledged to undertake fiscal policy measures and press for expansionary monetary policy in order to stimulate economic growth, but it will be difficult for Japan to sustain higher economic growth in the medium to long term, given the decreasing number of working-age people (between 15 and 65 years old), which will cause the labor force to begin declining over the next

decades. The Reference case projection for economic growth in Japan is the lowest among the OECD regions, at 0.6 percent per year.”

...in contrast to Japan, South Korea is one of the fastest growing OECD economies currently and throughout the Reference case projection. The country recovered quickly from the 2008-2009 global economic crisis, with real GDP increasing by 6.3 percent in 2010 and 3.6 percent in 2011, though slowing to 2.2 percent in 2012. With its relatively low government debt, South Korea is well placed for medium- to long-run growth, although its labor force growth is projected to slow in the short term. In the longer term, South Korea's economic growth is supported by a flexible labor market and by an accelerating shift from companies owned and managed by families to shareholder-controlled companies. Consequently, capital investment remains a large component of market-driven real GDP growth. In the *IEO2013* Reference case, South Korea's GDP expands by an average of 3.3 percent per year from 2010 to 2040.

In Australia and New Zealand, long-term prospects are also relatively healthy, given their consistent track records of fiscal prudence and structural reforms aimed at maintaining competitive product markets and flexible labor markets. Geographically, the two countries are well positioned to benefit from export market opportunities in the emerging Asian countries, although their aging populations may be one barrier to higher rates of economic growth in the medium to long term. In the Reference case, the combined GDP of Australia and New Zealand grows by an average of 2.2 percent per year from 2010 to 2040.”

Non-OECD Developing Economies: Asia

In contrast, **Figure III.1** through **Figure III.3** show that growth will be much higher in developing countries and particularly in developing Asia – where China and India are projected to grow at average rates approximating 6% a year, and the other Asian states are projected to grow at an average rate of 4.3%. The EIA projects that,¹⁵

“Real GDP growth from 2010 to 2040 in the non-OECD region as a whole averages 4.7 percent per year in the *IEO2013* Reference case (Figure 15). Investment, exports, and the prospects for higher commodity prices support GDP increases in the near term, although slower growth in advanced economies and potential for inflation are a concern. In the medium-to-long term, population growth, the potential for technological advancement, and lower debt levels help to support faster economic expansion in the non-OECD countries. Achieving these faster rates will require additional infrastructure investment and improvements in regulatory and financial institutions.

India has the world's fastest growing national economy in the *IEO2013* Reference case, averaging 6.1 percent per year from 2010 to 2040, even though its economic growth has been subdued recently, with household spending tepid, investment slower, and inflation a greater concern than in the past. In the medium term, however, recently announced reforms should help to improve the economic environment if they are fully implemented. Accelerating additional structural reforms—such as ending regulatory impediments to the consolidation of labor-intensive industries, labor market and bankruptcy reforms, and agricultural and trade liberalization—remain essential over the longer term.

China saw its economic growth accelerate in 2011 after a slowdown that began in 2010. Supportive developments included retail sales and industrial production growth, and increases in exports as the economies of major trading partners experienced recovery. Many structural issues remain, however, with implications for China's economic growth over the mid- to long term, including the pace of reform affecting inefficient state-owned companies and a banking system that is carrying a significant amount of nonperforming loans. Development of China's domestic capital markets continues in the Reference case, providing macroeconomic stability and ensuring that its large domestic savings are used more efficiently. China's economic expansion slows substantially toward the end of the projection period as a result of demographic factors related to its aging population and shrinking work force. From 2010 to 2030, China's real GDP grows by 6.6 percent per year in the Reference case but slows to an average of 4.0 percent per year from 2030 to 2040.”

“Many of the other economies of non-OECD Asia have benefited from trade ties with, and are largely dependent on, China. For those that depend on exports (including Hong Kong, Indonesia, Singapore, and Taiwan), China's strong economic rebound is likely to support growth in the near term. Many also trade

heavily with the United States, Japan, and OECD Europe, however, meaning that their economic performance is intertwined with demand from the advanced economies. In the long term, growth prospects in non-OECD Asia remain favorable. Excluding China and India, real GDP in non-OECD Asia is projected to grow by an average of 4.3 percent per year from 2010 to 2040...

It is important to note that such estimates have often been wrong in the past and failed to predict the rate of growth in given countries. This may prove to be the case for India – one of the potentially most important economies and energy importers in the IOR. Its prospect for growth became substantially more uncertain in 2012 and 2013. At the same time, China has so far broadly met such growth projections and “Other Asia” includes a basket of countries whose economic growth may do nearly as much to increase the demand for Gulf energy exports through the IOR as China.

Non-OECD Developing Economies: Africa and Middle East

The estimates of economic growth for Africa – which include the East African countries in the IOR – are relatively high in spite of a considerable level of regional instability and violence. This highlights the fact that some key measures of risk do not always affect economic growth and investment opportunities. At the same time, this growth in East Africa generally affects far smaller and less developed national economies than in Asia, and will have significantly less impact on total investment, trade, and demand for energy.

In Africa, economic prospects for different countries vary widely across the continent. Oil exporters in northern Africa and most of sub-Saharan Africa continue to grow strongly. Nevertheless, both economic and political factors—such as low savings and investment rates, lack of strong economic and political institutions, limited quantity and quality of infrastructure and human capital, negative perceptions on the part of international investors, protracted civil unrest and political disturbances, and the impacts of various diseases—present formidable obstacles to the economies of a number of African countries. In the *IEO2013* Reference case, Africa's combined real GDP increases by 4.6 percent per year on average from 2010 to 2040.

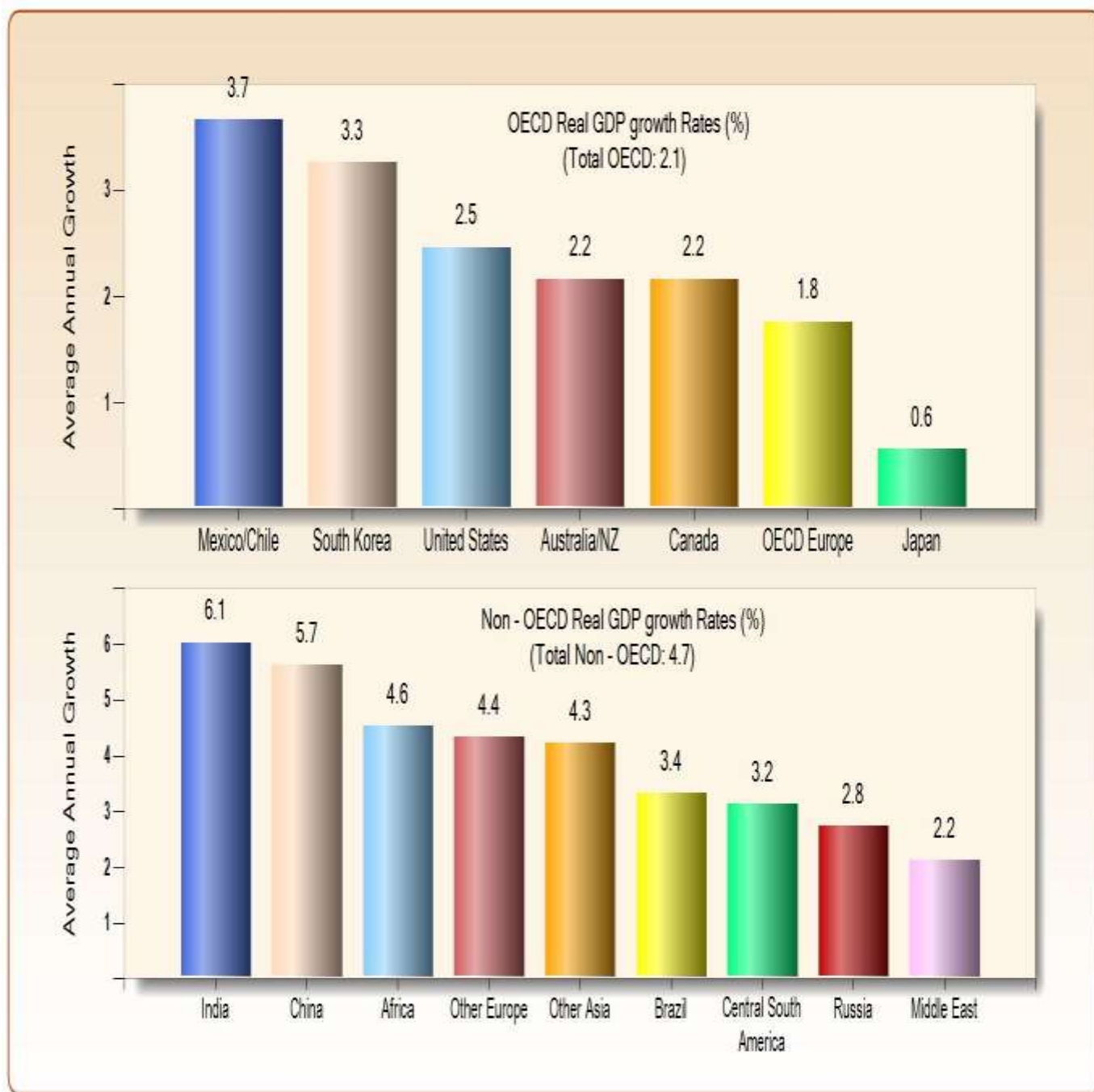
Somewhat ironically, the Middle East – the IOR's main source of energy exports, was projected to experience low economic long before the seriousness of the political upheavals in nations like Bahrain, Egypt, Syria, Iraq, and Yemen became fully apparent. It is also important to note that no mid to long-term economic modeling includes the risk of war in spite of the fact that every Subregion in the IOR – and much of the developing world –has seen a steady pattern of international and internal conflict/civil war since the end of World War II. This caveat is particularly important given the tensions between Iran and its Arab neighbors in the Gulf, and the risks of another round of fighting between India and Pakistan that are analyzed later in this study.

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The slowest growing non-OECD region is the Middle East, where the average annual growth rate is 2.2 percent over the projection period. The Middle East region is challenged by continuing geopolitical instability that discourages foreign investment, as well as heavy reliance on commodity exports for economic growth. From 2003 to 2008, rising oil production and prices helped boost economic growth in the oil-exporting countries of the Middle East, many of which also benefited from spillover effects on trade, tourism, and financial flows from the region's oil exports.

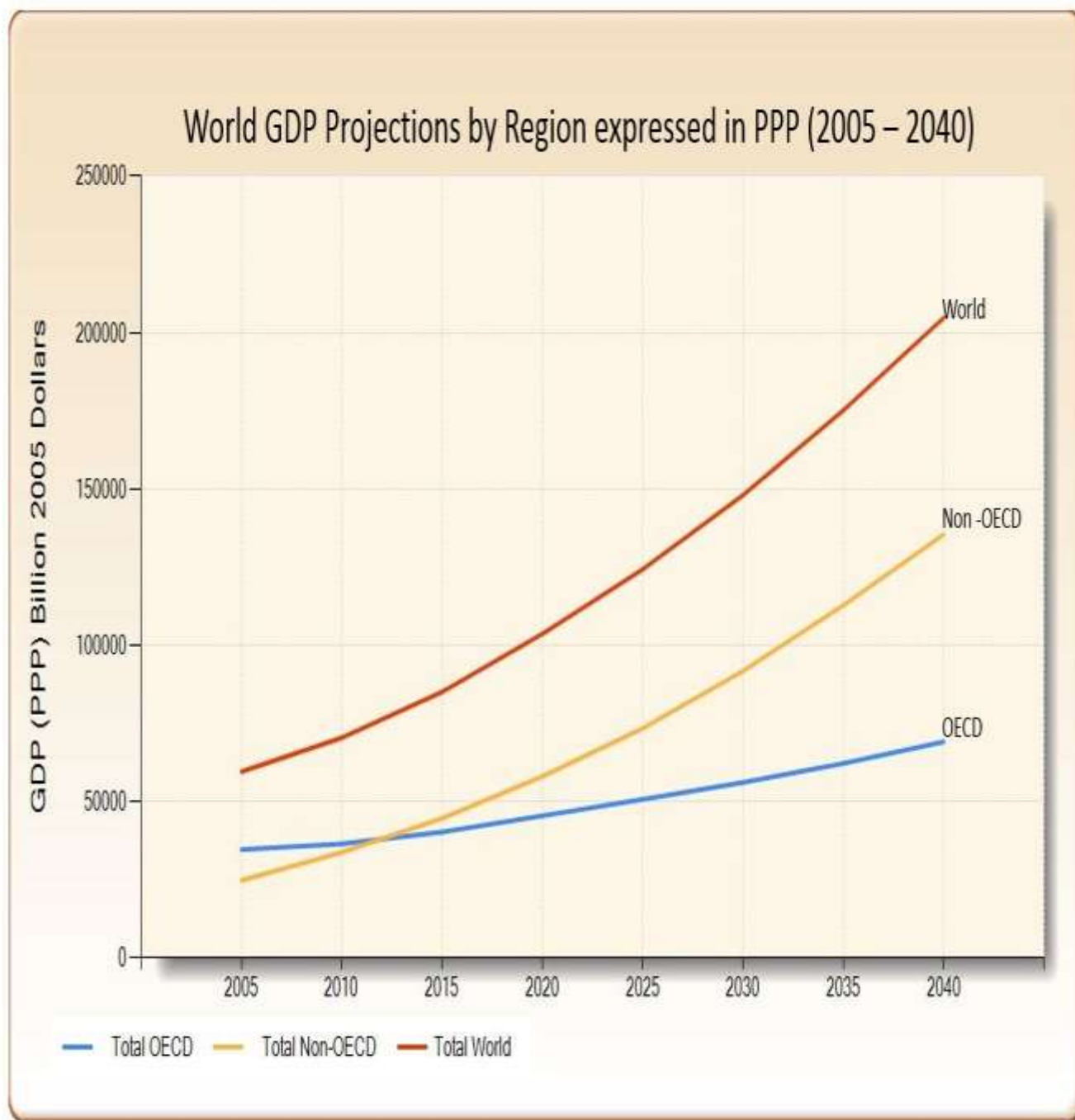
In the short run, with relatively high world oil prices and rebounding demand for the region's export commodities, prospects for economic growth remain favorable. However, the medium to long term presents many challenges. Political turmoil and domestic unrest threaten to depress consumer confidence and investment. Demographic issues and the dependence of many Middle East countries on commodity exports for growth also are key challenges for regional economic growth prospects, with reliance on oil and natural gas revenues continuing through much of the projection period.”

Figure III.1: OECD (Developed Country/Region) Growth Rates vs. Non-OECD (Developing Country/Region): 2010-2040



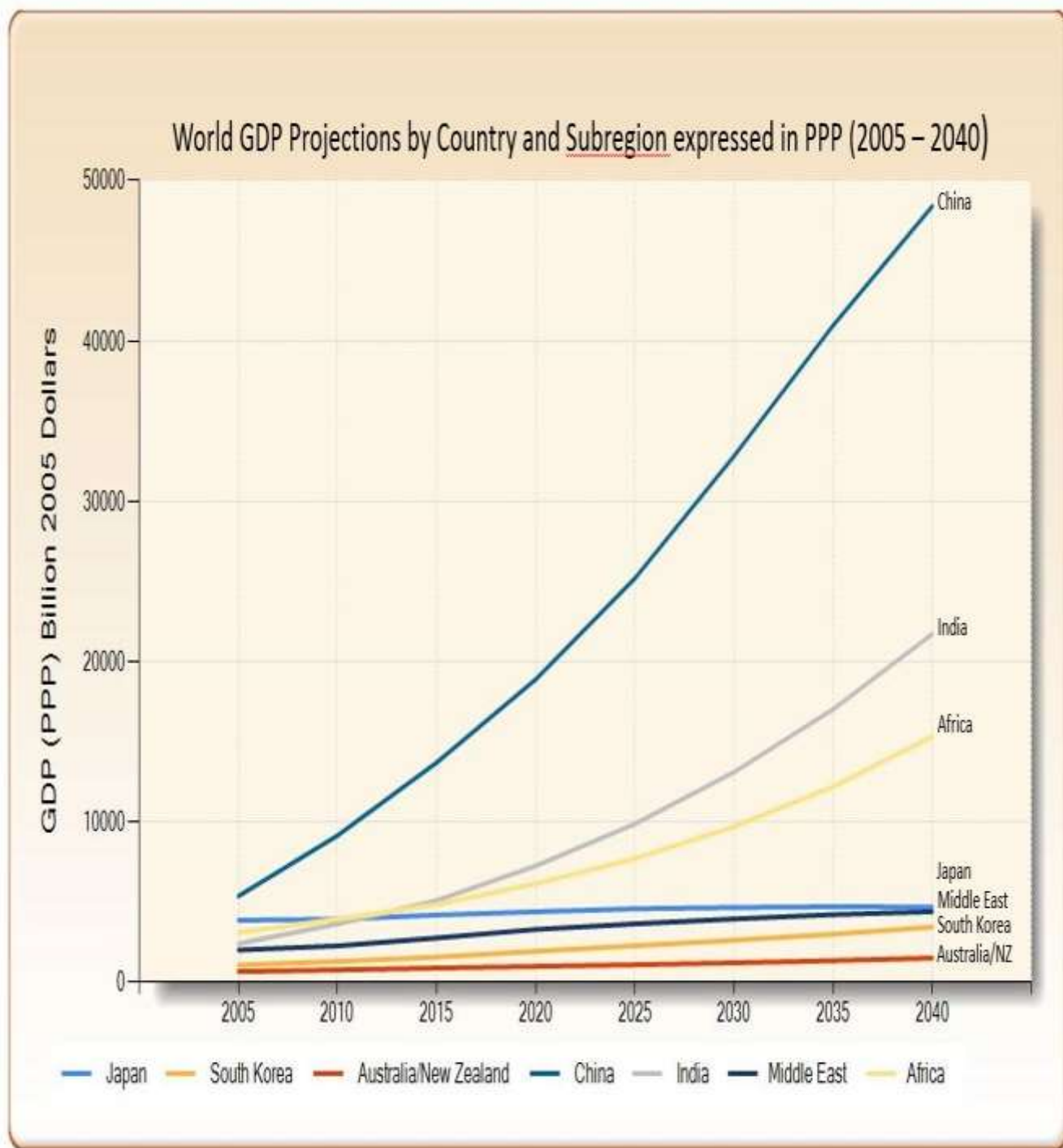
(Source: EIA International Energy Outlook 2013)

Figure III.2: World GDP Projections by Region in PPP 2005 - 2040



(Source: EIA IEO 2013 Statistical Data)

Figure III.3: World GDP Projections by Country and Subregion in PPP: 2005 - 2040



(Source: EIA IEO 2013 Statistical Data)

Estimating the Impact of Global Energy Trends

There are major uncertainties in every aspect of what may well be the most important “tectonic” shifts in the IOR over the next two decades. Forecasting trends for any nation inside or outside the IOR presents serious risks over even the next half decade. There are enough data, however, to provide broad strategic vectors regarding shifts in energy in spite of all the uncertainties involved. Much will depend on the stability of key oil states in the Gulf, the rate of future growth in Asia economies outside the IOR, major changes in oil and gas technology, and in alternative fuels and forms of energy efficiency.

Any effort to provide meaningful estimates and models for trends so complex requires a scale of effort that only governments and international organizations can credibly approach – although individual studies and analysts often provide major insight into key aspects of the issues involved. Three different groups make credible attempts at the massive scale of data collection and detailed computer simulation and modeling necessary to make and forecasts of these trends: The International Energy Agency (IEA), the Energy Information agency of the Department of energy (EIA), and the Organization of Petroleum Exporting Countries. (OPEC).¹⁷

None of these models or forecasts can reliably predict the future any more than other models of such complex and uncertain trends and data. They can, however, do a good job of estimating what is currently known about such trends, and all broadly agree on the broad trends in their projections.

They also agree that there will be a steady increase in world energy demand, including demand for the liquid fuel exports that are so critical to the present global impact of the IOR and the strategic importance of Gulf petroleum exports to nations inside and outside the IOR. These trends in overall energy balance by type of fuel are shown in **Figure III.4** to **Figure III.6**, and have a massive impact on the impact on the Gulf and trade flows through the IOR, particularly to and from Asia.

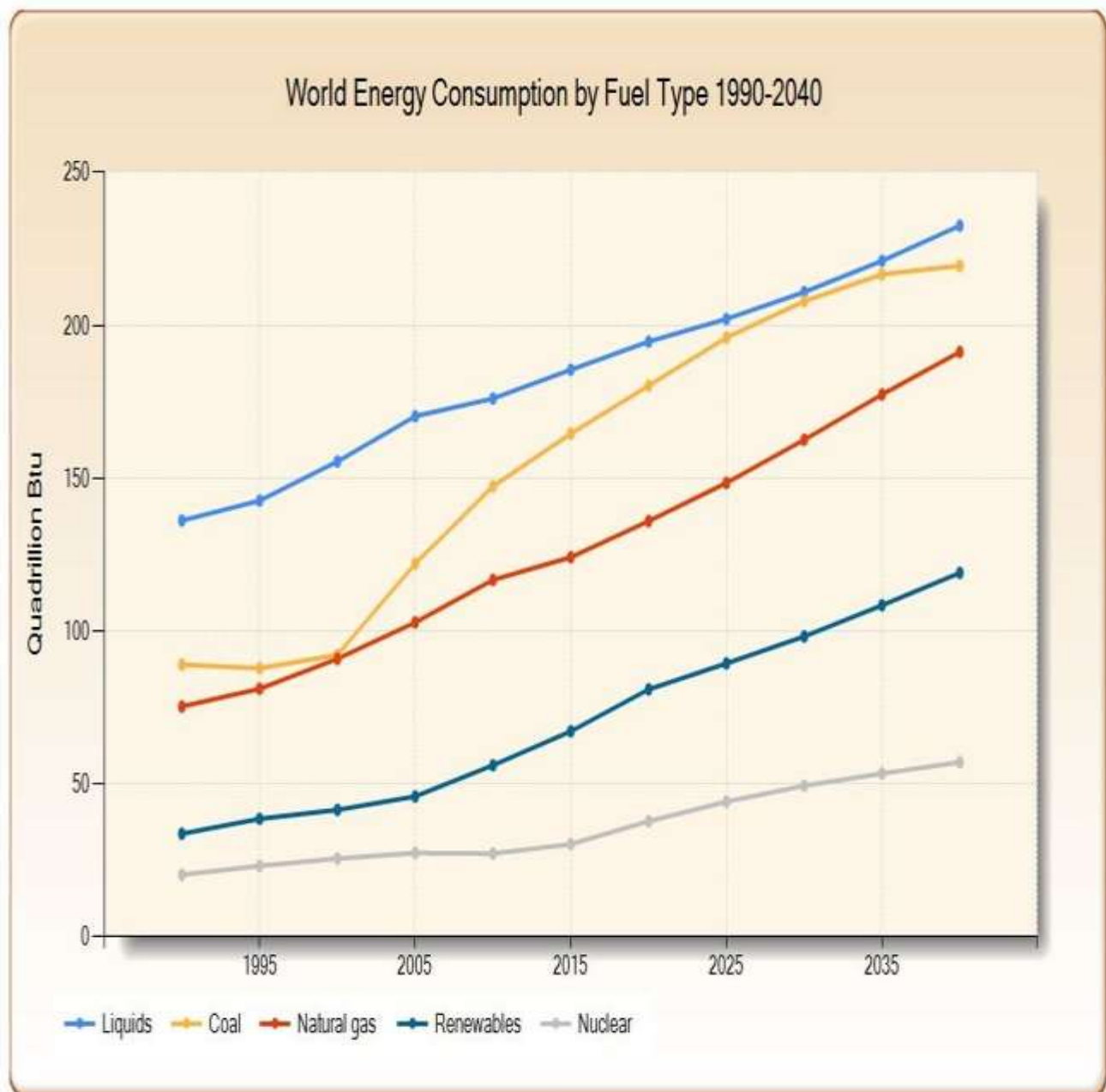
The IEO makes the following summary projection for world energy consumption by source:¹⁸

The use of all energy sources increases over the time horizon of the *IEO2013*. Given expectations that world oil prices will remain at levels that are high relative to historical experience throughout the projection, petroleum and other liquid fuels are the world's slowest-growing source of energy.

Liquids consumption increases at an average annual rate of 0.9 percent from 2010 to 2040 (Figure 20), whereas total energy demand increases by 1.5 percent per year (Figure 19). Nuclear power and renewables are the fastest-growing sources of world energy, both increasing at an average annual rate of 2.5 percent

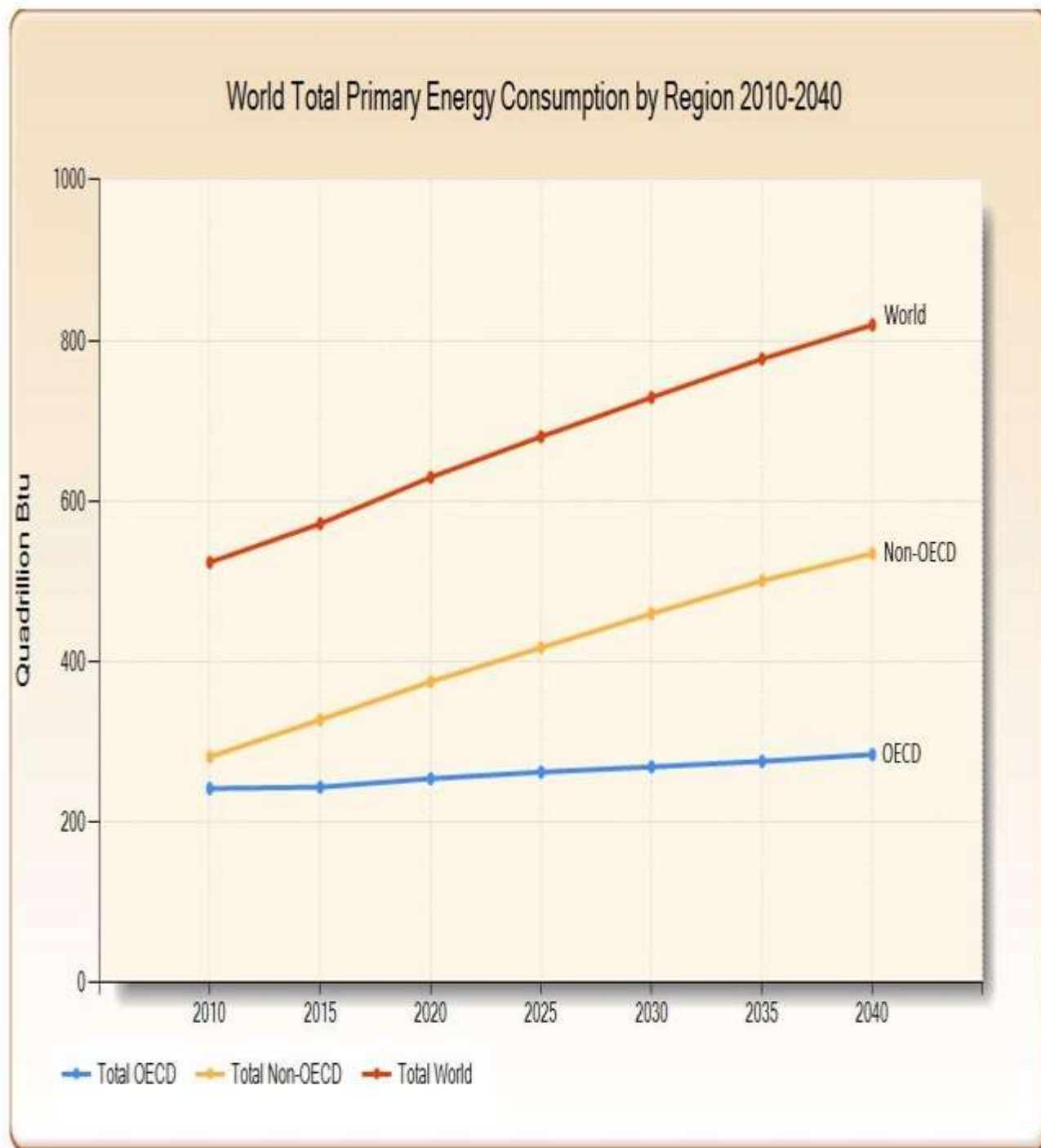
...Concerns about energy security, the impact of fossil fuel emissions on the environment, and sustained high world oil prices support expanded use of nuclear power and renewable energy over the projection. Government policies and incentives improve the prospects for non-fossil forms of energy in many countries around the world in the outlook.

Figure III.4: World Energy Consumption by Fuel Type 1990-2040



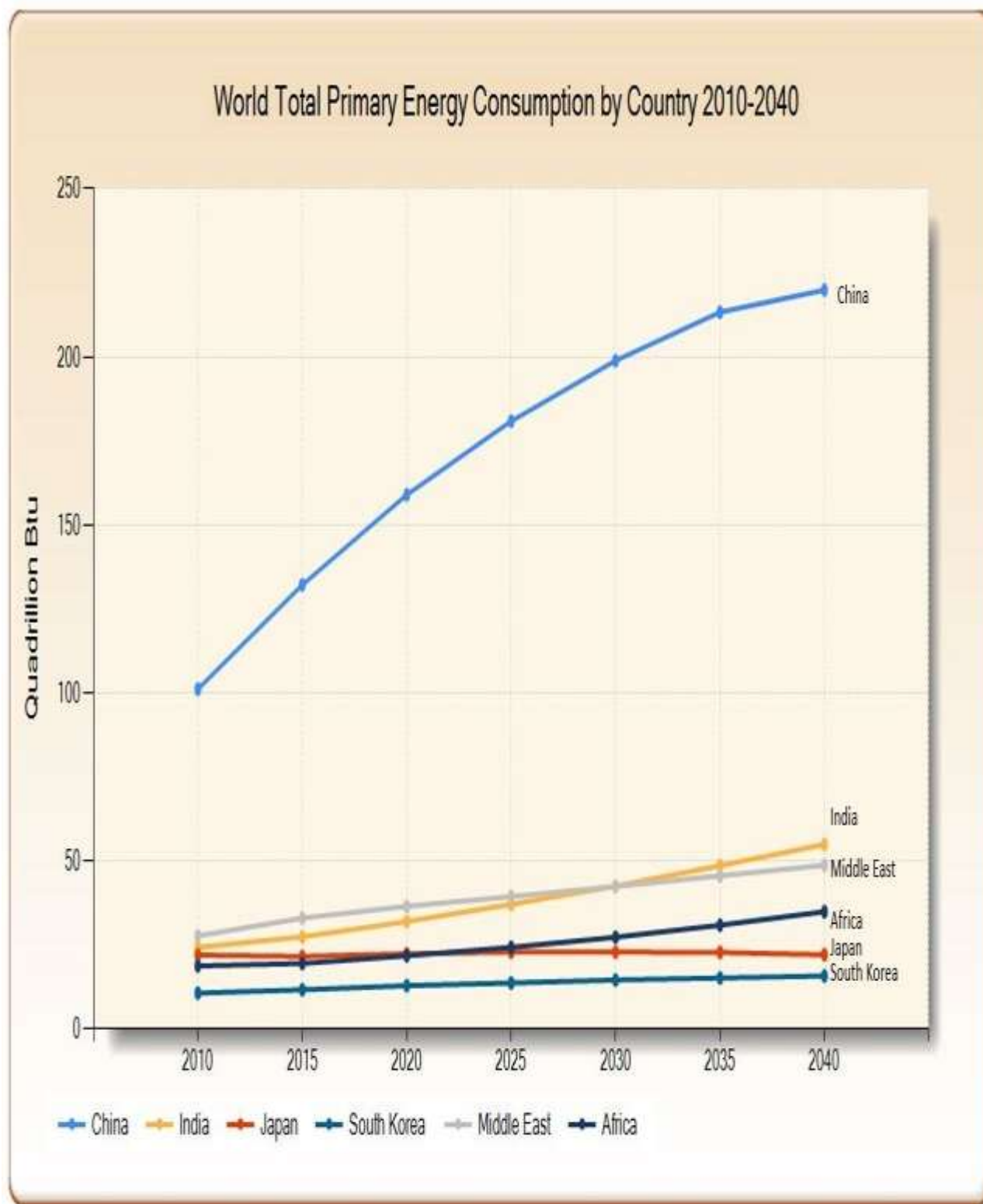
(Source: EIA IEO statistical Data 2013)

**Figure III.5: World Total Primary
Energy Consumption by Region (in BTUs): 2010- 2040**



(Source: EIA IEO 2013 Statistical Data)

Figure III.6: World Total Primary Consumption by Country 2010-2040



(Source: EIA TEO 2013 Statistical Data)

The Impact of IOR Energy Trends

The detailed patterns in global and regional trade patterns are difficult to project, as work by the World Trade Organization's *The World Trade Report 2013: Factors Shaping the Future of World Trade* make all too clear.¹⁹ It is clear, however, that Asia continues to emerge as major force in world trade and world energy imports. Asian exports increased by an average of 11% a year during 2005-2012, and imports increased by 12%.²⁰ The WTO estimates that Asia's total merchandise exports increased from \$739 billion in 1990 to \$1,858 billion in 2000 and \$5,539 billion in 2013, and this would not have been possible if total Middle Eastern exports -- dominated by petroleum -- had not increased from \$138 billion in 1990 to \$269 billion in 2000 and \$1,251 billion in 2013.²¹

A substantial part of the increase in external imports came in the form of petroleum export from the Gulf, and particularly from the Southern Gulf or GCC states. Some experts estimate that East Asia alone now accounts for 57% of the South Gulf's external trade, and it seems clear that that this volume of trade will increase steadily in a future where China's current oil consumption may increase by as much as 67% by 2030.

These shifts are making fundamental alterations in the strategic trade patterns in the IOR, as Asia becomes a steadily more dominant importer of Gulf oil, gas, and product. It has led China, India, and other Asian to see the flow of petroleum exports across the Indian Ocean as a critical strategic interest and -- as Chapter IX details -- led China and other Asian powers to see the security of its Gulf petroleum imports as vital strategic interest in shaping its military forces.

China already shows an interest in establishing a military presence in the IOR and participating in military exercises in the Gulf, while other Asian and IOR countries are concerned over China's steadily expanding sea-air-missile forces. So far, it seems unlikely that closer Gulf relations with Asia so far seem unlikely to cause the Gulf to shift away from its strategic partnership with the United States but much depends on how the US views its own expanding energy resources, the value of its strategic partnerships in the region, and maintains its commitments and deployment of US forces.

Far more is involved than the shifts in the pattern of Gulf petroleum exports. Developing economies throughout the world are becoming more dependent on stable global patterns of petroleum exports, and nations like the United State are becoming steadily greater "indirect" importers of Gulf oil through their imports of Asian goods that can only be manufactured if Gulf oil flow to Asia.

For all the changes in energy resources and in new sources of liquid fuels and gas, Gulf stability and the stable flow of petroleum exports will be vital to the global economy through at least 2040, and increasingly include product and gas exports to both other IOR states and Asia.

The US Energy Information Agency (EIA), which is part of the US Department of Energy (DOE), projects that,²²

"EIA's International Energy Outlook 2013 (IEO2013) projects that growth in world energy use largely comes from countries outside of the Organization for Economic Cooperation and Development (OECD). Energy use patterns for countries inside the OECD are relatively stable between 2010 and 2040 as primary energy use is projected to grow by 0.5% per year, roughly the same rate as population growth in those countries...In non-OECD countries, faster growing economies and changing habits in highly concentrated populations drive significant increases in energy use. Energy use in non-OECD countries is projected to grow by 2.2%

per year, and the share of non-OECD energy use is expected to rise from 54% of total world energy use in 2010 to 65% in 2040.

Between 2010 and 2040, IEO2013 shows that primary energy use per capita is expected to change little from its 2010 level of 196 million British thermal units (MMBtu) in the OECD but grows from 50 MMBtu to 73 MMBtu per capita in non-OECD countries. In addition to already being home to most of the world's population in 2010, the non-OECD countries are also expected to experience most of the world's population growth through 2040. Population growth is most pronounced in African countries, but energy use per capita is low across the continent and is projected to stay almost constant through 2040. India also accounts for a large portion of world population growth—adding more than twice as many people as expected to be added in the entire group of OECD countries between 2010 and 2040. Unlike African countries, India's energy use per capita is expected to grow during the period.

In 2040, the total gross domestic product (GDP), measured in purchasing power parity (PPP), of non-OECD countries is projected to be much higher than the GDP of OECD countries, but the amount of energy used per unit of GDP is virtually the same. At the same time, the ratio of GDP relative to population remains much higher in OECD countries. This higher GDP-to-population ratio allows citizens in OECD countries to spend more resources on energy-consuming services that provide productivity, leisure, and comfort, and keeps energy consumption on a per capita basis much higher in the OECD. As the economies in the non-OECD countries continue to experience relatively fast growth, those countries will also be able to spend more for energy-consuming services.”

On the basis of the public data available on each set of forecasts, and from other sources, three separate sets of trends will shape the future IOR energy issues.

- *The first such trend is the effort to meet domestic demand for energy within IOR countries.* Here, the current trends are clear. Only the Gulf sub-region has the resources to meet its future energy needs with anything like today's expenditure levels and technology. Most states have long failed to develop their own limited energy resources, and even create an effective electric power grid to meet current needs and even short-term needs for economic growth and development. Some countries, such as Pakistan, have grossly underinvested in power in spite of extremely costly investments in nuclear power.

These problems are generally only one of state barriers to effective investment and development, but they are all too real. They also play a key role in energy forecasting. As is the case with slowly developing nations throughout the world, the slow rate of economic growth and energy consumption in many IOR countries sharply reduces the demand for oil exports, eases the flow of exports outside the region, and limits the rise in petroleum prices.

- The second such trend is the search for pipelines that can move oil and gas directly along land routes or reduce the risks of moving through energy chokepoints. The pipelines now generally bypass the IOR, moving from Russia to Asia or Europe, and out of the Caspian and Central Asia. This is largely a function of the fact that Russia is both a major exporter and dominates many current pipeline networks as an inheritance from the FSU. China is, however, seeking to create its own networks.

The pipeline systems emerging out of the IOR are limited. The Arab Gulf states do have pipelines to the Red Sea or that bypass the Strait of Hormuz, but their capacity is limited and they go to ports within the IOR. The only active major pipeline out of the Gulf states that does not pass through the Indian Ocean and its chokepoints is the Iraqi line through Turkey to Cheyan, a port on the Mediterranean. Iran does, however, export limited amounts of gas through a pipeline to Turkey.

All other pipelines to the Mediterranean have been shut because of past wars or conflicts. Iran has sought to expand its pipelines to Turkey and Pakistan, but faces major problems because of sanctions and pipeline costs. Plans for pipelines from Central Asia to Pakistan and India have been discussed for decades, but again present major cost and security problems -- problems that will increase if unconventional gas technology increase supply and lowers gas costs outside the region.

- The third and most critical trend is the increasing volume of petroleum production and exports coming out of the Gulf Subregion of the IOR. According to EIA, IEA, and most other projections, these increases will be the only significant increases in petroleum and other liquids production through 2040.

The EIA reference case for example, indicates that Gulf production will increase by 10 million barrels per day (MMBD) between 2011 and 2040 in spite of massive exports. East African oil production will increase from 2.7 MMBD to a maximum of 3.5 MMBD – falling far short of the increase in domestic demand. India will at best increase production by 0.2 MMBDF, going from 0.9 to 1.1 MMBD in 2040.²³ (Table G1, p 247)

As for Asia, China may be able to increase production from 4.3 MMBD in 2011 to 5.6MMBD in 2040, but this will be a small fraction on the increase demand. Australia and New Zealand can credibly increase production from 0.6 MMBD in 2011 to 0.9MMBD in 204, but the increase is only 0.3 MMBD. As for the rest of Asia, the other OECD states will at best continue to produce only 0.2 MMBD, and all the other states in Asia, including Pakistan, Bangladesh, Sri Lanka and all East Asian states will experience a slow but steady drop in total production from 2.8 MMBD in 2011-2015 to only 1.9 MMBD in 2035.²⁴

The Impact of Gulf Petroleum Production and Exports

It is the increases in Gulf petroleum production and exports that will do most to shape the shifts taking place in the IOR that affect outside states, particularly those in East Asia. These trends are as uncertain as the broader trends discussed earlier, but they involve a more stable historical base and there is less uncertainty in terms of technology.

A summary picture of the US Energy Information Agency (EIA) projection of key trends is shown in **Figure III.7**. There are good reasons to focus on the EIA estimate. Many of the details of OPEC estimates are not made public and IEA public reporting does not provide the full range of input data and estimates necessary to fully interpret its results. The EIA modeling is more transparent and its full details are available in its annual *International Energy Outlook*. The latest version of this report was issued on July 25, 2013, and is available on the Internet at <http://www.eia.gov/forecasts/ieo/>, and <http://www.eia.gov/forecasts/ieo/pdf/0484%282013%29.pdf>.

This report provides the following summary of the trends in Gulf petroleum production:

Saudi Arabia, Iran, and Iraq combined have a large share of the world's oil reserves and resources that are relatively easy to produce. Saudi Arabia, for many decades the only holder of substantial spare oil production capacity, has played a critical role as the major swing supplier in response to disruptions in other supply sources and to economic fluctuations affecting oil demand. Both Iraq and Iran have the reserves and other resources needed to raise their capacity and production well above current levels if they can successfully address some of the internal and external "above-ground" challenges that have kept their respective oil sectors from realizing their potential for more than 30 years.... The difficulty in determining the extent to which each of the countries will be able to overcome the particular hurdles that impede supply growth adds to the challenge of projecting country-specific production levels in the OPEC Middle East region.

In addition to the usual uncertainties surrounding oil supply projections; producers in the OPEC Middle East region are likely to continue playing a key role in the balancing of global demand and supply. For this reason, their output levels may be negatively correlated, as higher realizations of capacity and production in one country will lower the amounts of capacity and production in other countries that are needed to balance global markets. Future developments, including the development of tight oil resources, which is a widely discussed topic in the international oil community, have significant potential to affect the reliance on OPEC liquids supplies and the behavior of key Middle East OPEC producers over the next several decades.

Saudi Arabia

Saudi Arabia's oil revenues traditionally have exceeded the amounts required to fund its government expenditures, enabling it to vary production levels in response to global supply or demand developments over the past 25 years without significant concern about the revenue implications of such actions. More recently, social and economic programs funded by the Saudi government have expanded substantially. While Saudi Arabia maintains large financial reserves, revenue needs may become a more important consideration as the government considers its future responses to a situation of persistent, high growth in supply from other key OPEC or non-OPEC producers, or a sustained downturn in demand.

Iraq

Iraq has established an official oil production target of 12.0 million barrels per day in 2017 [37], a huge increase compared with its 2012 production level of 3.0 million barrels per day. It is unlikely to come close to reaching that target, which would exceed the amount of global incremental liquids production needed to meet projected global demand growth to 2017 in the *IEO2013* Reference case. Political disputes and infrastructure limitations are likely to continue hampering output growth in the short run. In addition, terrorism, the poor investment climate, and other problems could limit Iraq's production over the projection period. However, if those problems can be overcome, major improvements in production and export infrastructure could enable Iraq to sustain high production growth rates through 2040.

Iran

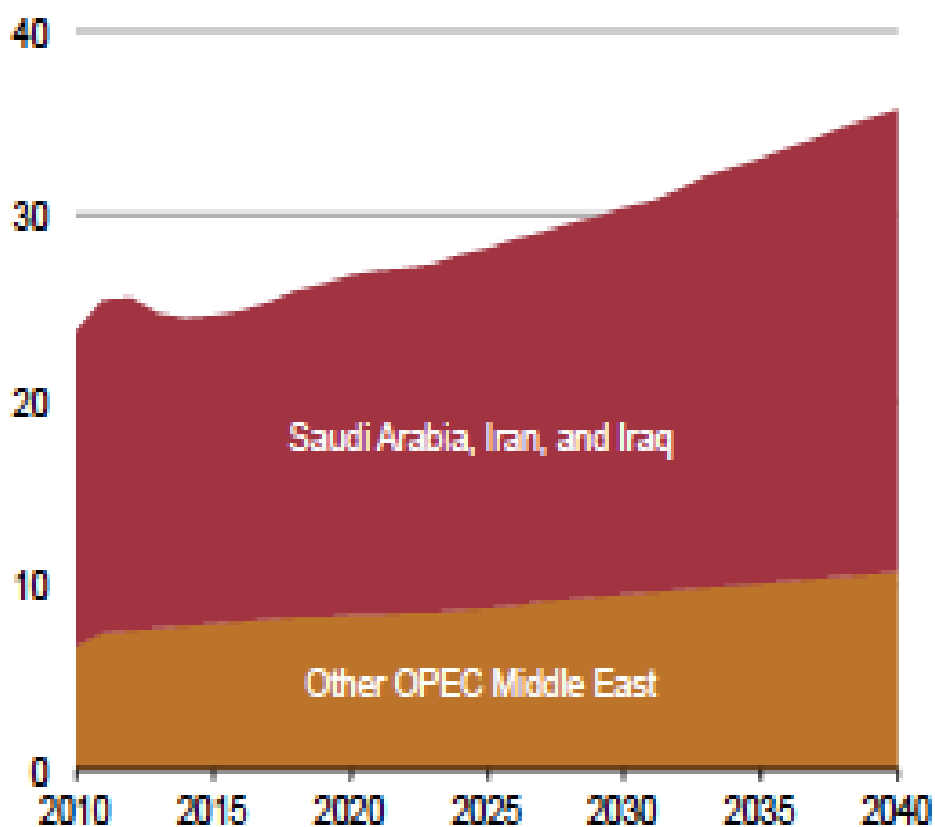
Iran's liquids production, which reached a peak of 6.1 million barrels per day in 1974, has been well below that level since 1979 [38]. After averaging an estimated 4.0 million barrels per day from 2001 to 2010, Iran's production has declined further. A series of international sanctions targeting Iran's oil sector have led foreign companies to cancel a number of new projects and upgrades at existing projects.

Iran faces continued depletion of its production capacity, as its fields have relatively high natural decline rates (between 8 and 13 percent per year). Additional factors hampering investment include unfavorable foreign investment requirements, underinvestment, and gaps in professional expertise and technology for certain projects. U.S. sanctions on financial institutions that handle payments made for oil exports from Iran, coupled with actions by the European Union to cease imports from Iran and prevent it from accessing insurance from European Union companies for its oil shipments, caused a further reduction in Iran's oil exports in 2012. Without some agreement between Iran and the international community to end the sanctions, it will be increasingly difficult for Iran to maintain its production, let alone increase it, notwithstanding its endowment of readily accessible resources.

Kuwait

Other producers make smaller, but important, contributions to supply. For example, nearly all of Kuwait's current reserves and production are in mature fields, but prospects could improve with the success of Project Kuwait, a plan proposed in 1998 to attract foreign participation and increase oil production capacity from four northern oil fields: Raudhatain, Sabriya, al-Ratqa, and Abdali. The four fields contain a mix of heavy and light oil resources. Additionally, it may be possible to boost oil production in Kuwait from the partitioned neutral zone (PNZ) that the country shares with Saudi Arabia, which could hold as much as 5 billion barrels of oil [39]. Qatar's liquids production is poised to increase over the projection period through the application of GTL technology, which produces liquid fuels such as low-sulfur diesel and naphtha from natural gas.

Figure III.7: OPEC Middle East Liquids Production by Country Grouping
(In million barrels per day)



Liquid fuels production in Middle East OPEC in four Reference case scenarios, 2011 and 2040 (million barrels per day)

Country	2011	2040				2040 production range
		Scenario 1	Scenario 2	Scenario 3	Scenario 4	
Saudi Arabia	11.1	15.5	10.2	13.8	6.0	9.5
Iran	4.2	5.9	3.9	8.1	8.1	4.2
Iraq	2.6	3.7	11.0	3.3	11.0	7.7
Other Middle East OPEC	7.5	10.7	10.7	10.7	10.7	–
Total Middle East OPEC	25.4	35.8	35.8	35.8	35.8	–

Source: EIA, *International Energy Outlook, 2013*, DOE/EIA-0484 (2013, July 2013, pp. 31-32).

Scenarios for Estimating Gulf Production and Its Impact on the IOR

The EIA provides four different scenarios for estimating future production – each of which illustrates the dangers in trying to make country specific predictions relative to the overall importance of the Gulf Subregion of the IOR in meeting Asian and global demand:²⁵

There is a great deal of uncertainty attached to long-term projections of global petroleum and other liquids supply. It is clear, however, that the countries with most of the world's largest and most flexible liquids resources are located within Middle East OPEC. In particular, Saudi Arabia, Iran, and Iraq have large domestic petroleum resources that can be produced at relatively low cost. Assuming that key OPEC producers persist in efforts to manage world oil prices through supply adjustments, one or more of the three major producers will function as OPEC's swing supply. There is considerably more uncertainty in projecting country specific levels of production, as there are many possible scenarios for future liquids production in Saudi Arabia, Iran, and Iraq.

In this discussion, four alternative scenarios for their liquid fuels production, consistent with their combined production in the Reference case, are considered. In the *IEO2013* Reference case, total OPEC Middle East liquids production increases from 25.4 million barrels per day in 2011 to 35.8 million barrels per day in 2040. Using the Reference case assumptions, the implied combined production of Saudi Arabia, Iran, and Iraq rises from 17.9 million barrels per day in 2011 to 25.1 million barrels per day in 2040...

The following scenarios are used to demonstrate how widely Saudi Arabia, Iran, and Iraq liquids production could vary, underscoring the uncertainty associated with the outlook for long-term liquids production in any single country.

Scenario 1: Past as prologue

In this scenario, Saudi Arabia, Iran, and Iraq are assumed to continue to provide the share of their combined petroleum production that they held in 2011 throughout the projection period. That is, Saudi Arabia supplied 62 percent of the petroleum produced from the three countries in 2011 and it is assumed to provide 62 percent of the supply from these three countries through 2040.

The result is that Saudi Arabian production rises from 11.1 million barrels per day in 2011 to 15.5 million barrels per day in 2040. Iran's share of production from the three countries was 24 percent in 2011 and, in this scenario; its liquids production in 2040 would reach 5.9 million barrels per day.

The remaining 15 percent is ascribed to Iraq, and results in 3.7 million barrels per day of liquids production in 2040. In this business-as-usual scenario Saudi Arabia continues to dominate OPEC Middle East production, and Iraq makes only minimal advances.

Scenario 2: Iraq success

In scenario 2, Iraq is assumed to be able to restore its petroleum production infrastructure and resolve the many aboveground issues that have negatively impacted the industry for more than two decades. In this case, Iraq's production rises to 8.0 million barrels per day by 2030 and then to 11.0 million barrels per day in 2040, from 2011 production of 2.6 million barrels per day.

The remainder is prorated to Iran and Saudi Arabia based upon each country's share of combined 2011 production. That is, Iran accounted for 28 percent of combined Iran and Saudi Arabian liquids production in 2011; Saudi Arabia 72 percent. In this case, production in Saudi Arabia is lower than that of Iraq in 2040 at 10.2 million barrels per day.

Scenario 3: Iran success

This scenario is similar to scenario 2, but substituting Iran as the growth story. In this case, Iran is assumed to have resolved its aboveground issues, including resolution of international sanctions and it attracts the investment necessary to restore and expand the oil production industry. Here, Iran is able to restore production to its 1974 annual peak of 6.1 million barrels per day in 2030 and then production increases to 8.1 million barrels per day by 2040.

The remaining production is allotted according to the Iraq and Saudi Arabia shares of their combined 2011 production. In this case, Saudi Arabia's share of the 2011 Iraq-Saudi Arabian combined production is 81 percent; Iraq's share 19 percent. As a result, Saudi production would increase to 13.8 million barrels per day. Iraq's 2040 production rises to only 3.3 million barrels per day, only slightly higher than its 2011 production and far from its stated ambitions.

Scenario 4: Iraq success, Iran success, and Saudi Arabia takes the rest

This final scenario envisions production increasing strongly in both Iraq and Iran, with Saudi Arabia willing to reduce its own liquids output to hold the level of OPEC production at the level projected in the *IEO2013* Reference case. Here, Iraq's production profile is the same as in scenario 2, increasing to 8.0 million barrels per day in 2030 and then to 11.0 million barrels per day in 2040.

Iran's production profile is the same as in scenario 3, increasing production to 6.1 million barrels per day in 2030 and then further to 8.1 million barrels per day by 2040.

Saudi Arabia produces the remaining part of the Reference case production for the three countries. In this case, Saudi Arabian liquids production in 2040 is 6.0 million barrels per day, slightly more than half its 2011 liquids output.

...These scenarios illustrate the considerable variation in future production that is possible within the three most petroleum-rich countries in the Middle East consistent with the combined total of production from these countries indicated for the *IEO2013* Reference case. Moreover, it demonstrates how difficult it is to estimate production for these large resource holders, given the variety of aboveground issues that can affect the ability or desire to increase a nation's output.

In 2040, Saudi Arabia alone has production that ranges between 6.0 million barrels per day (in scenario 4) and 15.5 million barrels per day (in scenario 1), a range of 9.5 million barrels per day. Although the range of supply outlooks for Iraq and Iran is smaller than that of Saudi Arabia, there is still a fairly wide range of possible production for the two countries.

This analysis suggests there is substantial flexibility in future liquids supply from Saudi Arabia, Iran, and Iraq, but the uncertainty associated with any long-term outlook of production remains high. The scenarios do not assess the likelihood of any one of the futures outlined could be realized. There are considerable aboveground issues that could alter production from any one of the three countries. For instance, given the cost of Saudi Arabia's substantial social programs and subsidies, it is highly unlikely that the government would allow a decrease in production to the 6.0 million barrels per day outlined in scenario 4. It is equally difficult to envision Iraq production barely rising from its 2011 level as posited in scenario 3. Still, the wide range of production possibilities illustrates the number of different possible futures in production from these three countries.

In spite of all the uncertainties involved, the EIA still estimates that Gulf production will rise steadily in all of its scenarios, and do so even though EIA makes an optimistic estimate of the increasing role of other liquids in global supply. For example, the EIA reference case indicates the Gulf production will rise from 23.4 MMBD in 2010 (27% of total world production) to 24.8 MMBD in 2015 (27%), 27.0 MMBD in 2020 (28%), 28.1 MMBD in 2025 (28%), 30.3 MMBD in 2030 (29%), 32.8 MMBD in 2035 (30%) and 35.7 MMBD in 2040 (31%).²⁶

To put these rises in Gulf production in perspective, the EIA estimates that Chinese production will only rise from 4.3 MMBD to 5.6 MMBD, Japan and South Korea will stay at 0.2 MMBD, East African production will remain negligible, Indian production will rise from 0.9 MMBD to 1.1 MMBD, Australia and New Zealand will rise from 0.7 MMBD to 0.9 MMBD, and other Asian production will drop from 2.9 MMBD to 2.0 MMBD. Virtually all of the sustained increase will come from a rise in alternative fuel supplies.²⁷

Iranian Oil Production and Exports, Sanctions, and the P5+1

It is important to note that the EIA longer-term projections and these scenarios did not address the issue of sanction on Iran and the impact of any P5+1 agreement with Iran. The EIA issued a separate forecast in December 2013 that showed serious cuts in Iranian production as a result of sanctions and that did not project any increase in the short term. The trends involved are shown in **Figure III.8**, and the EIA described the near term trends as follows:²⁸

The U.S. Energy Information Administration (EIA) does not anticipate an immediate impact on global liquid fuels supply following the November 24 agreement between Iran and the five permanent members of the United Nations Security Council (the United States, United Kingdom, France, Russia, and China) plus Germany (P5+1) on Iran's nuclear program. The agreement does not directly allow for additional Iranian oil sales, although it does suspend sanctions on associated insurance and transportation services to those countries already granted import waivers.

The imposition of sanctions on associated insurance and transportation services by the European Union (E.U.) had a significant effect on Iran's exports when implemented in July 2012, but Iran has been able to create arrangements that allow it to export limited quantities of oil to several countries. EIA does not anticipate those countries significantly increasing their oil imports from Iran, so without an easing of sanctions covering Iran's ability to sell additional oil, the country is unlikely to significantly increase its production or exports in the short term.

Iran's total liquids production and exports declined significantly as a result of sanctions imposed on its energy sector, and the recent agreement is not expected to significantly impact the existing sanctions regime for at least the next six months, according to official U.S. Department of State statements. EIA estimates Iranian crude oil production was 2.8 million barrels per day (bbl/d) in November 2013, down from an annual average of 3.7 million bbl/d in 2011 and 3 million bbl/d in 2012. Crude oil exports averaged just 1.1 million bbl/d over the first nine months of 2013, down from 2.5 million bbl/d in 2011 and 1.5 million bbl/d in 2012, according to the International Energy Agency.

Existing United States and E.U. sanctions target Iran's petroleum exports and imports, prohibit large-scale investment in the country's oil and gas sector, and cut off Iran's access to European and U.S. sources of financial transactions. Additional sanctions target the Central Bank of Iran, while the E.U. imposed an embargo on Iranian oil and in July 2012 banned European Protection and Indemnity (P&I) Clubs from providing Iranian oil carriers with insurance and reinsurance.

European insurers underwrite the majority of insurance policies for the global tanker fleet, covering about 95% of tankers worldwide. The insurance ban particularly affected Iranian oil exports as lack of adequate insurance impeded sales of Iranian crude to all of its customers. Iranian exports dropped to less than 1.0 million bbl/d in July 2012 as Japanese, Chinese, South Korean, and Indian buyers encountered difficulties in finding insurance alternatives.

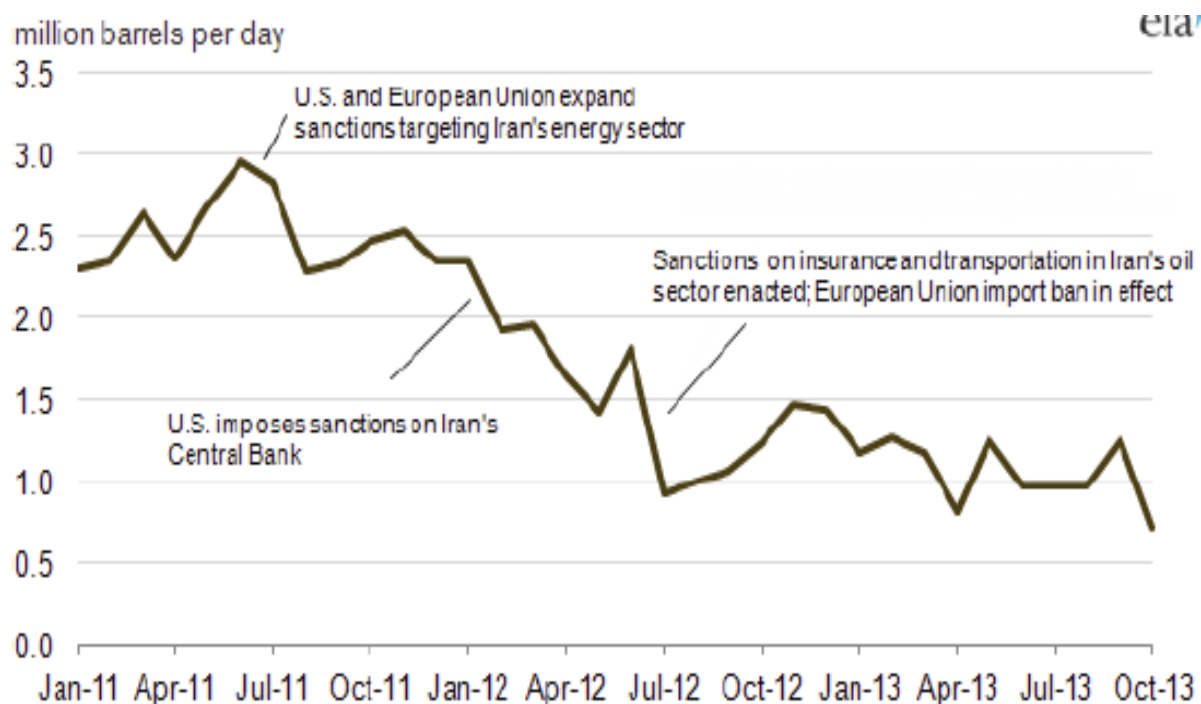
By August and September of 2012, Iranian exports recovered somewhat as Japan, South Korea, and India began to issue sovereign guarantees for vessels carrying Iranian crude oil and condensate, and China and India began to accept Kish P&I Club—an Iranian insurer—guarantees on the vessels that shipped oil to their refineries. While the recent agreement suspends the shipping insurance ban, many of the countries currently importing Iranian oil are already using alternative insurers, thereby limiting Iran's ability to significantly increase exports.

In 2012, Iran's net oil export revenues were significantly lower than the \$95 billion generated in 2011. The upper bound estimate of Iran's net oil export revenues in 2012 was \$69 billion, assuming that Iran was able to receive hard currency payments for all of its estimated exports and did not offer discounts despite the application of sanctions by the United States and the E.U. This upper bound estimate may significantly overstate the country's actual net oil export revenues. Oil exports make up 80% of Iran's total export earnings and 50-60% of government revenue, according to The Economist Intelligence Unit.

These projections also do not attempt to take account of the impact of the military balance in the Arabian Gulf. With the recent P5+1 agreement with Iran, controlling and dismantling Iran's

nuclear weapons potential program, the conventional military balance in the Gulf may remain the principle determinant of balance of forces. Iran has been focusing to build capabilities in four fields: surface-to-surface missiles; anti-shipping warfare; proxy warfare, and asymmetric warfare. These could all have a major impact on both Iranian production and the overall flow of Gulf exports in some scenarios.

Figure III.8: EIA Estimate of Iranian Oil Production: January 2011-October 2013



Source: EIA, "Iran's oil exports not expected to increase significantly despite recent Negotiations," *Today in Energy*, December 10, 2013.)

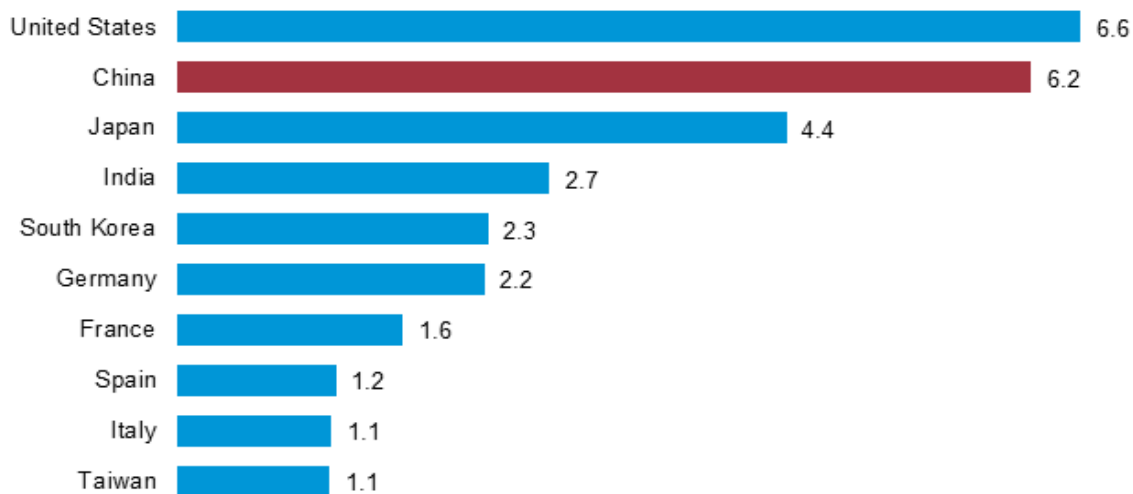
The Petroleum "Pivot to Asia" and its Impact on IOR Security

As **Figure III.9** shows, Gulf oil exports make up a critical portion of the energy imports from key states like China, India, Japan, and South Korea – whose exports of manufactured goods are critical to the US economy, that of the EU, and most of the other countries in the world. The EIA estimates that roughly two-thirds of Gulf exports now go to the Asia-Pacific region.

Figure III.9: Gulf vs. Other Sources of Petroleum Imports in Key Gulf Countries – Part One

Top ten annual net oil importers, 2013

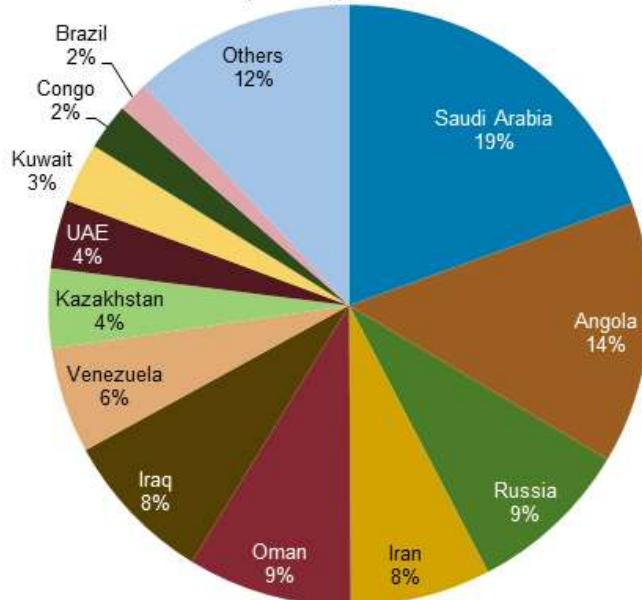
millions barrels per day



Note: Estimates of total production less consumption. Does not account for stockbuild.

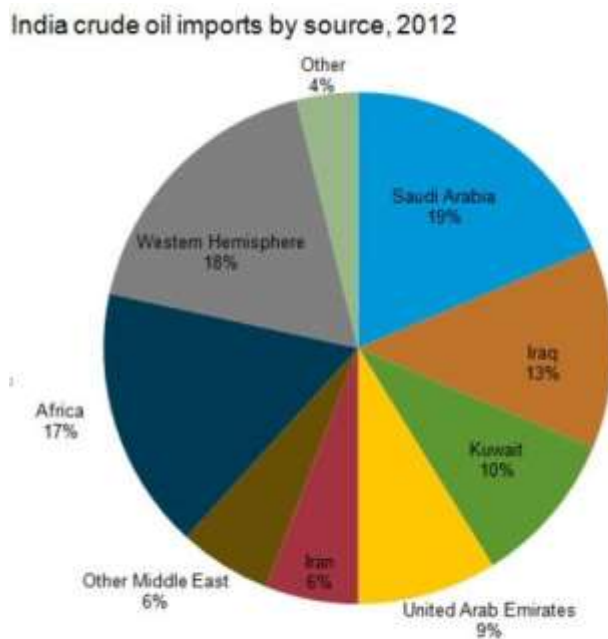
Source: U.S. Energy Information Administration, *Short Term Energy Outlook*, January 2014.

China's crude oil imports by source, 2013



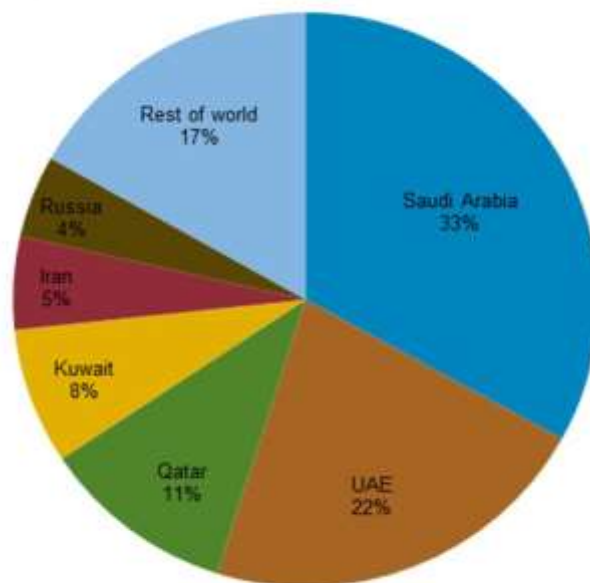
Source: FACTS Global Energy, Global Trade Information Services.

Figure III.9: Gulf vs. Other Sources of Petroleum Imports in Key Gulf Countries – Part Two



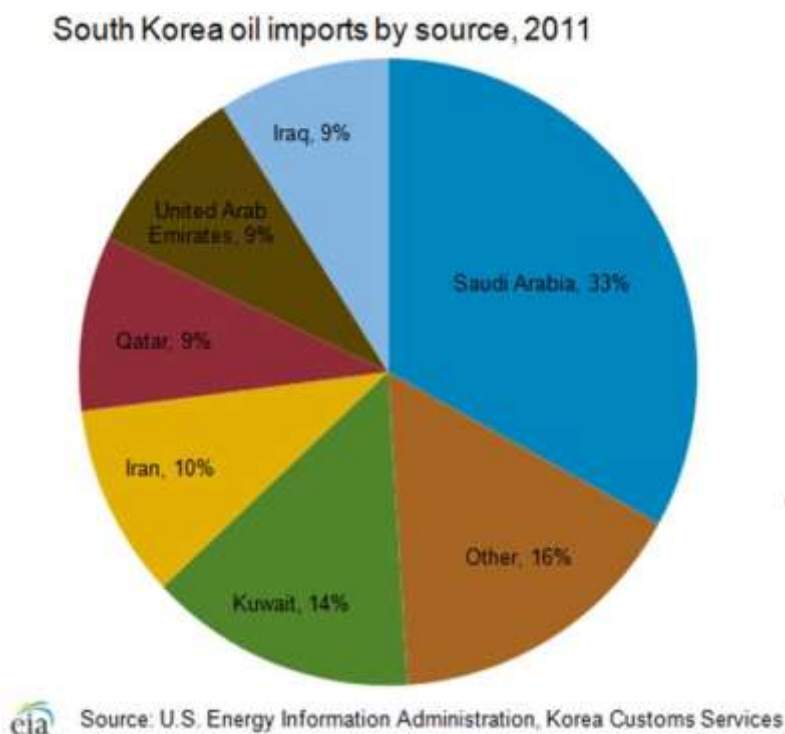
Source: U.S. Energy Information Administration, International Energy Statistics, Lloyd's List Intelligence.

Japan's crude oil imports by source, 2012



Sources: Global Trade Atlas, METI

Figure III.9: Gulf vs. Other Sources of Petroleum Imports in Key Gulf Countries – Part Two



Source: Provided by DOE/EIA, December 2013; and http://www.eia.gov/countries/analysisbriefs/China/images/crude_oil_imports_source.png

The Impact of Increases in Asia Demand for IOR Petroleum and Other Liquids

Asia's current dependence on Gulf petroleum exports will increase steadily with time. The increase in Gulf production and exports through the IOR will be accompanied by a radical increase in the flow of Gulf petroleum exports to Asia. While U.S. and European demand shaped the flow of Gulf oil exports through the IOR in the past, South and East Asian states that dominate this flow and Asia will become steadily more dependent on Gulf petroleum exports to or through the IOR.²⁹ This will have a major impact on the overall flow of shipping in the IOR and in the importance of both maritime security and the region's strategic chokepoints.

There are many uncertainties in any estimate of how sharp the rise will be in Asian dependence, or to predict the future of either alternative liquids or the extent transportation technology will remain dependent on petroleum. It seems highly unlikely, however, that massive changes could penetrate heavily into global or Asia markets, and the EIA seems optimistic in estimating the impact of increases in energy efficiency, conservation, and alternative liquid fuels.

Virtually all energy projections indicate that nations like India and China – as well as Asia's developed states like Japan and South Korea will experience a sharp increase in strategic

dependence at a time when the US will may be able to depend largely on North American production and European demand will remain relatively constant in comparison with Asia and will benefit from increase production in North Africa and areas like the Caspian.

The EIA estimate is broadly similar to IEA and OPEC forecasting in indicating that Asia, and particularly the emerging economies in Non-OECD Asia – such as China and India – will increase demand for world petroleum and other liquid fuels consumption from 87 million barrels per day in 2010 to 97 million barrels per day in 2020, and 115 million barrels per day in 2040, in spite of a prediction that prices will rise steadily after 2020.³⁰

The importance of the rise in Asia petroleum demand, and its impact on the IOR, is shown in **Figure III.10**. This Figure not only shows how much non-OECD Asia will drive the rise in demand and supply, shows that almost all of this rise in demand must be met from outside the region and from the Gulf.³¹

The EIA summarizes the reason for this growing Asian dependence on IOR petroleum as follows:
32

Non-OECD Asia is the largest source of growth in worldwide liquids consumption in the *IEO2013* Reference case, increasing by 19.3 million barrels per day from 2010 to 2040 (Figure 26). Within non-OECD Asia, China has the largest absolute growth in demand from 2010 to 2040 (10.5 million barrels per day), and India has the second largest (5.0 million barrels per day). India has the fastest regional GDP growth in the *IEO2013* Reference case, which translates into the fastest regional growth in liquids demand (3.1 percent per year), although the absolute growth in India's liquids consumption is smaller than China's. In 2010, India's liquids fuel use was 35 percent of China's 9.3 million barrels per day; in 2040 India's liquids consumption is 42 percent of China's 19.8 million barrels per day.

As China's economy moves from dependence on energy-intensive industrial manufacturing to a more service-oriented economy, the transportation sector becomes the most important source of growth in liquid fuels use. China more than doubles its liquids consumption compared with the 2010 level, and it supplants the United States as the world's largest consumer of liquid fuels in the Reference case after 2035.

In India, petroleum consumption is heavily oriented toward diesel fuel, which represented about 42 percent of product volume in 2012. Diesel, which is used in transportation, irrigation, manufacturing, and electricity generation, has historically received significant government subsidies. In an effort to reduce budget and trade deficits, the Indian government raised diesel prices by 14 percent in late 2012, its largest price hike ever.

...With liquids consumption growth rapidly outpacing production, non-OECD Asia has increasingly relied on imports from the Persian Gulf. In 1990, 33 percent of non-OECD Asia's oil imports came from the Middle East; in 2010, 48 percent came from the Middle East [27]. This trend will likely continue in the future, with producers in Russia and Central Asia also increasing production in the eastern regions of the two countries to meet new Asian demand. Liquids demand in the Middle East also grows substantially in the *IEO2013* Reference case, increasing by 3.2 million barrels per day from 2010 to 2040 as a result of strong population growth rates, which are second only to Africa, and rising incomes. Liquids-intensive industrial demand also plays a major role in the region, with consumption in the chemical sector leading

Industrial demand growth. Delays in petroleum subsidy reforms outside Iran also support higher regional consumption, coupled with per capita income growth that supports a significant expansion within the transportation sector. In the later years of the projection, it is likely that some subsidy reform will occur and begin to slow the growth in demand for liquids.

The IEA makes similar estimates. The Executive Summary of the IEA report a notes that global energy demand for oil exports will rise steadily in spite of any shifts in North American – China will increase its use of oil by as much as 66% between 2011 and 2030 and India will increase dependence by more than 100%. Moreover, the world will become even more dependent on the Gulf after 2020,³³

Growth in oil consumption in emerging economies, particularly for transport in China, India and the Middle East, more than outweighs reduced demand in the OECD, pushing oil use steadily higher in the New Policies Scenario. Oil demand reaches 99.7 mb/d in 2035, up from 87.4 mb/d in 2011, and the average IEA crude oil import price rises to \$125/barrel (in year-2011 dollars) in 2035 (over \$215/barrel in nominal terms). The transport sector already accounts for over half of global oil consumption, and this share increases as the number of passenger cars doubles to 1.7 billion and demand for road freight rises quickly.

The latter is responsible for almost 40% of the increase in global oil demand: oil use for trucks – predominantly diesel – increases much faster than that for passenger vehicles, in part because fuel-economy standards for trucks are much less widely adopted. Non-OPEC oil output steps up over the current decade, but supply after 2020 depends increasingly on OPEC. A surge in unconventional supplies, mainly from light tight oil in the United States and oil sands in Canada, natural gas liquids, and a jump in deepwater production in Brazil, push non-OPEC production up after 2015 to a plateau above 53 mb/d, from under 49 mb/d in 2011. This is maintained until the mid-2020s, before falling back to 50 mb/d in 2035.

Output from OPEC countries rises, particularly after 2020, bringing the OPEC share in global production from its current 42% up towards 50% by 2035. The net increase in global oil production is driven entirely by unconventional oil, including a contribution from light tight oil that exceeds 4 mb/d for much of the 2020s, and by natural gas liquids. Of the \$15 trillion in upstream oil and gas investment that is required over the period to 2035, almost 30% is in North America.

...Iraq makes the largest contribution by far to global oil supply growth. Iraq's ambition to expand output after decades of conflict and instability is not limited by the size of its resources or by the costs of producing them, but will require coordinated progress all along the energy supply chain, clarity on how Iraq plans to derive long-term value from its hydrocarbon wealth and successful consolidation of a domestic consensus on oil policy. In our projections, oil output in Iraq exceeds 6 mb/d in 2020 and rises to more than 8 mb/d in 2035. Iraq becomes a key supplier to fast-growing Asian markets, mainly China, and the second-largest global exporter by the 2030s, overtaking Russia. Without this supply growth from Iraq, oil markets would be set for difficult times, characterized by prices that are almost \$15/barrel higher than the level in the New Policies Scenario by 2035.

Some other projections indicate that Chinese demand for oil is projected to grow by 3.6% annually between 2012 and 2030, and by 1.29% between 2030 and 2040. Indian demand for oil is expected to grow by 2.6% per annum between 2012 and 2040.

By contrast, Japanese oil demand has been declining since 2005, due to government efficiency targets, movement toward alternative fuel sources, and an ageing population. Although the Fukushima disaster seems poised to move Japan incrementally away from nuclear energy, Japan's oil consumption is still projected to shrink annually by 0.4% between 2012 and 2040.

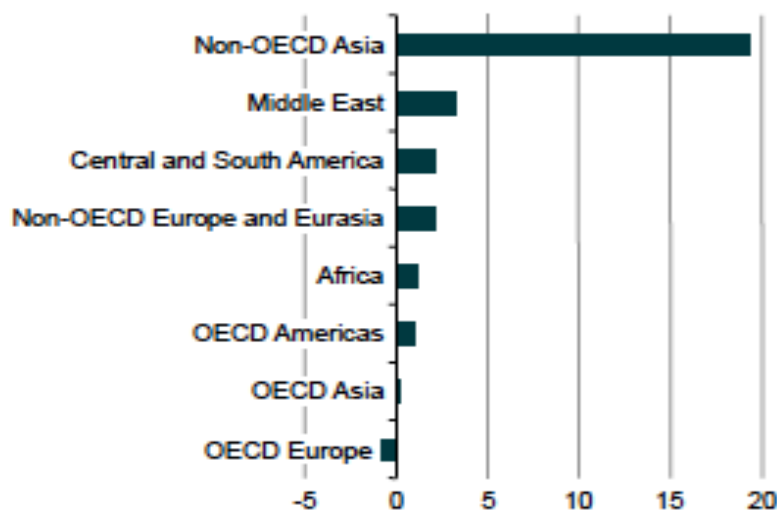
Virtually all forecasts also indicate that a massive shift will take place in the flow of IOR petroleum exports to meet increasing Asian demand at a time the growth in European demand will be limited and the US and other American states will become far less dependent on exports from outside the America.

This shift will greatly increase its strategic importance of one sub-region in the IOR to both Asia and the world economy, as well as the importance of the security and stability of maritime traffic in the region. It will reshape Gulf petroleum exports, the flow of tankers from the Gulf to key IOR countries like India and the flow of petroleum to East Asia. At the same time, will reshape the flow of imports to the IOR area, and particularly to the petroleum exporting states – steadily increasing their dependence on the flow of Asia exports.

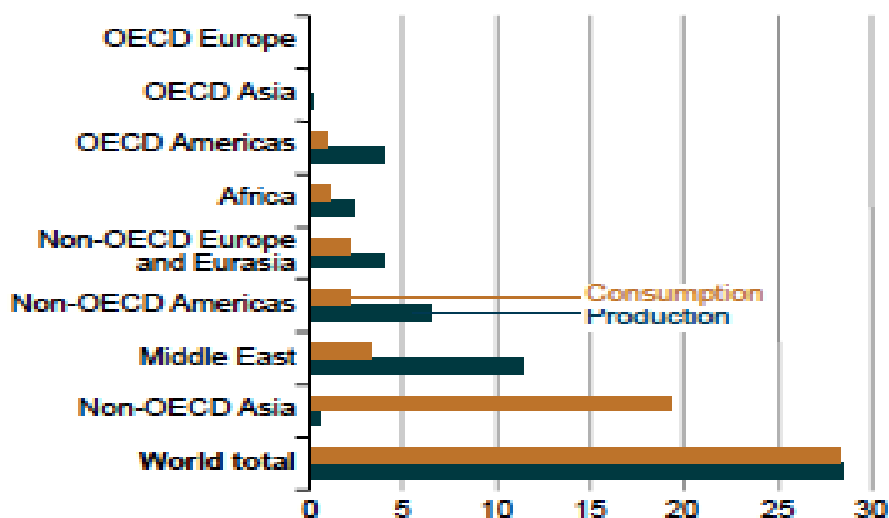
Equally important, it raises key issues regarding the role of the U.S., China, and East Asian powers like Japan and Australia in provide the air-sea-missile forces that will secure the flow of oil, gas, and petroleum products or potentially compete for influence and military power. Once again,

virtually all forecasts now indicate that the US will become far less dependent on Gulf and IOR energy exports through at least 2035 while China and other Asian powers will become far more dependent.

Figure III.10: Change in world liquids consumption by region, 2010-2040



Change in world liquids production and consumption by region, 2010-2040 (million barrels per day)



Source: EIA, *International Energy Outlook, 2013*, DOE/EIA-0484 (2013, July 2013, pp. 23 and 27)

Smaller, but Significant Increases in Asia Demand for IOR Rising Asian Gas Production

The impact that the trends in natural gas production, and trade, will have on the IOR are more uncertain, given the rapidly changing technologies involved and the uncertainty in estimating gas reserves. **Figure III.11** is probably broadly correct, however, in estimating that most of the estimated increase in gas production comes from within the Gulf. Rises in Australian and New Zealand trade will play a role in meeting East Asia demand, but India, other Asia, and East African trade will make only small increases or decline.

Figure III.12 puts these trends in a broader global context. It provides a series of charts showing a striking rise in Gulf gas production, the lack of any significant rise in East African production, rises in Russian and Central Asian production that will feed key gas pipelines to both Europe and Asia and bypass the IOR, and finally the extent to which a high technology and relatively wealthy state like China could increase gas supply through exploiting unconventional natural gas resources.

The EIA estimates shown in **Figure III.10** and **Figure III.11** reflect growth in two different Subregions of the IOR. The first is in Australia, New Zealand and Oceania that will do much to reduce their energy imports:³⁴

Natural gas production in the Australia/New Zealand region grows from 1.9 trillion cubic feet in 2010 to 6.7 trillion cubic feet in 2040 in the Reference case, an average rate of 4.3 percent per year. In 2010, Western Australia, including the Northwest Shelf area of Australia's Carnarvon Basin, accounted for around 63 percent of total production in the Australia/New Zealand region [79], with much of the production used as feedstock at the Northwest Shelf LNG liquefaction facility. Other areas and basins in Australia provided another 28 percent of the region's total production in 2010. New Zealand's natural gas production accounted for around 9 percent of the 2010 regional total.

Coal bed methane from the Bowen-Surat Basin in eastern Australia accounted for between 10 percent and 11 percent of Australia's total natural gas production in 2010 [80], and its share grows as it provides natural gas supplies to satisfy the area's demand growth and to feed proposed LNG export projects. Several companies also are pursuing tight gas and shale gas resources in Australia. Both the Perth and Canning basins in the state of Western Australia may hold economically producible resources of tight gas and shale gas. As in the United States, fracture stimulation of oil and gas wells has been common since long before the current interest in shale gas production. In Western

Australia almost 800 wells have been stimulated by hydraulic fracturing since 1958, including several in the Perth Basin in 2011 and 2012 [81] as part of shale gas exploration efforts there. The Canning Basin has received less attention to date, as it is more remote and will require greater infrastructure investment to bring producible resources, if any, to market. On the other hand, shale gas development in Australia is most active in the Cooper Basin, which lies mainly in the state of South Australia and closer to existing oil and gas infrastructure and to Australia's demand centers.

The second major increase in production again comes from the Gulf Subregion, but aside from Qatar, the EIA much of it will be used domestically:

Four major natural gas producers in the Middle East—Qatar, Iran, Saudi Arabia, and the United Arab Emirates—together accounted for 85 percent of the natural gas produced in the Middle East in 2010. With more than 40 percent of the world's proved natural gas reserves, the Middle East accounts for 21 percent of the total increase in world natural gas production in the *IEO2013* Reference case, growing from 15.9 trillion cubic feet in 2010 to 31.5 trillion cubic feet in 2040 (Figure 54).

The strongest growth ...from 2010 to 2040 in the Reference case comes from Iran, where natural gas production increases by 5.4 trillion cubic feet, followed by Qatar (4.9 trillion cubic feet of new production) and Saudi Arabia (2.3 trillion cubic feet). Although Iraq is the region's fastest-growing supplier of natural gas, with average increases of 11.6 percent per year over the projection, it remains a relatively minor

contributor to regional natural gas supplies. In 2040, Iraq's natural gas production totals 1.2 trillion cubic feet, or about 4 percent of the Middle East total.

Iran has the world's second-largest reserves of natural gas, after Russia, and is currently the Middle East's largest natural gas producer. Iran is also the Middle East's largest user of reinjected natural gas for enhanced oil recovery operations. In 2010 Iran reinjected more than 1 trillion cubic feet of natural gas, or 15 percent of its gross production, and in 2020 it is projected to use 3.7 trillion to 7.3 trillion cubic feet of natural gas per year for reinjection [82]. The higher estimate is almost equal to the total for Iran's marketed natural gas production in 2020 in the *IEO2013* Reference case. The actual figure for reinjection use, whatever it turns out to be, will have a significant impact on Iran's marketed natural gas production in the future.

Natural gas production in Saudi Arabia grows by an average of 1.9 percent per year, from 3.1 trillion cubic feet in 2010 to 5.4 trillion cubic feet in 2040. The Saudi Arabian national oil company, Saudi Aramco, has made several natural gas finds in the Persian Gulf that are not associated with oil fields. Three gas fields, the Karan, Arabiyah, and Hasbah, are expected to begin producing in the next 5 years, adding at least 1.3 trillion cubic feet of production when fully operational. Both Arabiyah and Hasbah are offshore, and both are sour natural gas fields, making them relatively expensive to produce, especially in the context of low domestic natural gas prices set by the government. The *IEO2013* Reference case assumes that

Saudi Arabia's policy of reserving natural gas production for domestic use will persist throughout the projection period, and that no natural gas will be exported. Thus, in the long term, production is more dependent on domestic demand growth and domestic prices than on resource availability.

In contrast there is little growth in conventional natural gas production in East Africa, India, and the rest of the IOR, while demand will increase significantly in China and India. However, China will be able to make major increases in production by shifting to unconventional natural gas resources.

In 2010, East Africa produced just 0.1 trillion cubic feet of natural gas. Over the last few years, however, several new natural gas discoveries have been made in the Rovuma Basin off the coast of Mozambique and Tanzania. Anadarko Petroleum began exploration of the Rovuma Basin in 2006, and several other companies have since invested and made discoveries in the area as well. Recent offshore discoveries in Mozambique and Tanzania hold an estimated 85 trillion cubic feet and 18 trillion cubic feet of recoverable natural gas resources, respectively. In order to commercialize the resources, Anadarko and another company, Eni, have proposed separate LNG liquefaction facilities for Mozambique. In addition, BG and Statoil are discussing the possibility of a joint facility in Tanzania. The Anadarko proposal, which currently is the most advanced, is for a facility capable of exporting 0.5 trillion cubic feet per year initially, with room to increase the capacity to a total of 1.4 trillion cubic feet if more natural gas becomes available for the project

...Both Japan and South Korea have limited natural gas resources and, consequently, very limited current and future production. Both countries receive the vast majority of their natural gas supplies in the form of imported LNG. In 2010, natural gas production in Japan and South Korea accounted for only 4 percent and 2 percent of their natural gas consumption, respectively. The presence of substantial deposits of methane hydrates in both Japan and South Korea has been confirmed, and both countries are investigating how those resources could be safely and economically developed. However, the *IEO2013* Reference case does not include methane hydrate resources in its estimates of natural gas.

Natural gas production in non-OECD Asia increases by 9.7 trillion cubic feet from 2010 to 2040 in the *IEO2013* Reference case, with China accounting for 70 percent of the growth and India 12 percent (Figure 26). From 2010 to 2040, China has the largest increase in natural gas production in non-OECD Asia, from 3.3 trillion cubic feet in 2010 to 10.1 trillion cubic feet in 2040, for an average annual increase of 3.8 percent. Much of the increase in the later years comes from tight gas, shale gas, and coal bed methane reservoirs

China already is producing small volumes of coal bed methane and significant volumes of tight gas. However, the actual volumes of tight gas are unknown, as China does not report it separately. China is trying to encourage the development of coal bed methane resources. Toward that goal, it has been offering producers a subsidy of roughly \$1 per million Btu since 2008 and may increase it to just over \$3 per million Btu [91]. In addition, there has been great interest in China's potential for shale gas production. China held its first auction for shale gas exploration blocks in June 2011, awarding contracts for four blocks, and in December

2012 it awarded another 19 shale gas blocks in a second auction [92]. In addition, China is considering offering a subsidy of around \$2 per million Btu for shale gas produced before 2015 [93].

Natural gas production in India grows at an average annual rate of 1.6 percent over the projection period, from 1.8 trillion cubic feet in 2010 to 3.0 trillion cubic feet in 2040. Production at the Dhirubhai-6 block in the Krishna Godavari Basin began in April 2009 and was a major factor in increasing India's natural gas production by more than 60 percent between 2008 and 2010.

However, India faces several production challenges. A large portion of its current production comes from aging western offshore fields; production from the Krishna Godavari Basin has failed to meet earlier expectations for volumes [94]; and while India has been encouraging exploration of potential coal bed methane deposits, initial results have been discouraging and actual production is likely to fall short of the government estimate of 0.1 trillion cubic feet by 2013-2014 [95].

India does have several basins that are prospective for shale gas, and in the later years of the *IEO2013* Reference case production from shale resources makes a significant contribution to India's total natural gas production. According to most of the early estimates India's shale resources are much smaller than those in China or North America, and India appears to be progressing toward their development much more slowly [96].

Outside China and India, non-OECD Asian natural gas production grows at a relatively modest average annual rate of 0.6 percent. The two largest producers in the region, Malaysia and Indonesia, both face declining production from many older fields and must make substantial investments to maintain current production levels. While other countries are looking toward potential shale gas resources to underpin future production growth, Indonesia is focusing on its coal bed methane resources. As of late 2012,

Indonesia had awarded 50 production-sharing contracts for coal bed methane areas [97]. The sector has attracted investment from a variety of companies, including large international oil and natural gas companies, smaller regional companies, and local Indonesian companies. At least three projects are expected to be producing commercial volumes in 2013. In 2011, the Indonesian firm Medco Energi signed an agreement to sell small volumes of coal bed methane from its Sekayu development to a local power generator beginning in 2012 [98]. Dart Energy, an Australia-based company that specializes in coal bed methane, expects to make the first sales of natural gas from its Sangatta project in 2013 [99]. Vico Indonesia, a BP-Eni joint venture, also expects first sales of natural gas from its Sanga-Sanga project in 2013, although first production from the project began in 2011 [100].

Given these data and estimates, it seems likely that gas production and exports from the Gulf Subregion in the IOR will grow, but have far less global economic effect, and strategic effect on the IOR, than the growth in petroleum liquids and other exports. The EIA summarizes the export impact of IOR gas production as follows:

Net exports of natural gas from the Middle East grow at an annual rate of 3.0 percent, as flows from the region increase from 2.7 trillion cubic feet in 2010 to 6.7 trillion cubic feet in 2040...

An important factor in the increase, particularly with regard to brisk growth in volumes in the near term, is the rise of LNG supplies from Qatar, which went from exporting its first LNG in 1999 to being the largest LNG exporter in the world in 2009. Qatar's LNG exports continue to increase through 2040. Its total LNG export capacity reached 77 million tons (3.6 trillion cubic feet) per year in early 2011 with the completion of the last in a line of six large-volume liquefaction trains under construction since 2008. Each train has the capacity to produce the equivalent of 360 billion cubic feet of natural gas per year for export...

Qatar's natural gas exports grow by an average of 10.7 percent per year from 2010 to 2015 in the Reference case, and then slow to an average increase of 1.1 percent per year after 2015. Because of a current moratorium on further development from the North Field, no new LNG projects are being initiated. Qatar enacted the moratorium in 2005 in order to assess the effect of the ongoing increase in production on the North Field before committing to further production increases... If Qatar decides to lift the moratorium on North Field development in 2014, its stated development priority is to ensure that it can meet long-term domestic natural gas needs for power generation, water desalination, and local industry. Only after those needs are met will it consider further increases in exports, and any increases are expected to come primarily from optimization of

current facilities.

Despite possessing the second-largest reserves of natural gas in the world, Iran continues to struggle with the formation of an export program that will result in significant commercialization of its resources. The country shares the North Field/South Pars Field with Qatar and has many export projects under consideration through the development of its portion of those reserves.

Nonetheless, the country as of 2010 was just barely a net exporter, delivering slightly higher volumes of natural gas to Turkey than it received from Turkmenistan (resulting in net exports of 0.1 trillion cubic feet). Although its first LNG export plant is under construction, Iran is without international partners and without an obvious source for obtaining liquefaction technology. Other export projects continue to be discussed, but as a result of international sanctions and internal politics there has been little progress on most projects. The *IEO2013* Reference case shows moderate flows from Iran, so that by 2040 the country is a net exporter of 1.6 trillion cubic feet per year.

Elsewhere in the Middle East, Yemen, Oman, and Abu Dhabi in the United Arab Emirates (UAE) also currently export LNG, although the potential for growth in exports from those and other countries in the Middle East appears to be limited by the growth of their domestic demand. Significant volumes of LNG have been imported by Kuwait and also by Dubai in the UAE, which completed construction of an LNG import facility in November 2010 and received its first cargo a month later... Both Oman and the UAE also are currently importing natural gas via pipeline from Qatar. The *IEO2013* Reference case projects a similar trend for smaller producers in the Arabian Peninsula region as a whole, including Kuwait, Oman, the UAE, and Yemen. As a group they exported less than 0.2 trillion cubic feet of natural gas on a net basis in 2010, and the volume of their net imports rises throughout the projection to a total of 1.3 trillion cubic feet in 2040.

In short, IOR gas exports from the Gulf Subregion will play a growing role in meeting world demand, but have nothing like the impact of the export of petroleum liquids.

Figure III.10: EIA Estimate of Trends in IOR-Related Natural Gas Production/Consumption 2010-2040 (trillion cubic feet) Parts I, II and III

(In trillions of cubic feet)

Region/Country	2010	2015	2020	2025	2030	2035	2040
Australia/New Zealand	1.9	2.7	3.8	4.9	5.6	6.3	6.7
India	1.8	1.6	1.7	1.8	2.1	2.6	3.0
Other Asian Production	4.2	3.9	3.8	3.7	3.7	3.8	3.9
East Africa	0.1	0.2	0.5	0.5	0.6	0.7	0.8
Iran	5.2	6.4	7.5	8.5	9.4	10.1	10.6
Iraq	0.0	0.1	0.1	0.3	0.6	0.8	1.2
Saudi Arabia	3.1	3.2	3.6	4.0	4.5	4.9	5.4
Other Middle East	0.3	0.3	0.3	0.2	0.2	0.2	0.2

Source: EIA, *International Energy Outlook, 2013*, DOE/EIA-0484 (2013, July 2013, pp. 283-286.

Figure III.11: EIA Estimate of Key Trends in World Gas Production and Consumption: 2010-2040: Part I

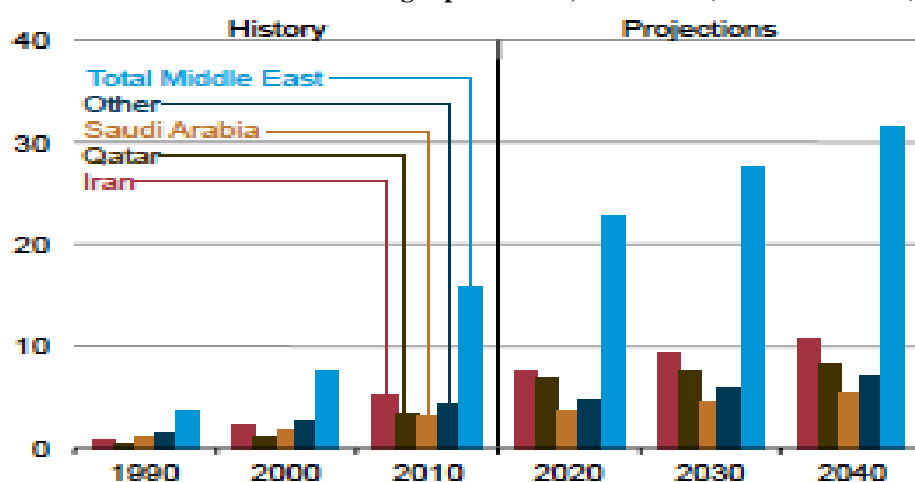
World natural gas production by region and country in the Reference case, 2010-2040 (trillion cubic feet) (p. 50)

	History	Projections						Average annual percent change, 2010-2040
Region/country	2010	2015	2020	2025	2030	2035	2040	
OECD								
United States*	21.2	23.9	26.5	28.4	29.7	31.3	33.1	1.5
Canada	5.4	5.0	5.4	5.9	6.4	7.0	7.6	1.1
Europe	10.4	9.0	8.1	8.0	8.6	9.2	9.9	-0.2
Australia/New Zealand	1.9	2.7	3.8	4.9	5.6	6.2	6.7	4.3
Rest of OECD	2.1	1.7	1.8	1.9	2.3	3.0	3.8	2.1
Total OECD	41.0	42.3	45.6	49.1	52.5	56.7	61.2	1.3
Non-OECD								
Russia	20.9	21.6	23.6	26.3	29.4	32.1	33.3	1.6
Europe and Central Asia	5.8	7.4	8.4	9.3	10.3	11.4	12.3	2.6
Iran	5.2	6.4	7.5	8.5	9.4	10.1	10.6	2.4
Qatar	3.4	6.0	6.9	7.3	7.6	7.9	8.3	3.0
Rest of Middle East	7.3	7.7	8.4	9.5	10.5	11.4	12.6	1.8
North Africa	5.8	5.7	6.2	6.2	6.4	6.8	7.4	0.8
Rest of Africa	1.6	2.3	3.1	4.0	4.8	5.6	6.3	4.8
China	3.3	3.8	4.2	5.2	6.7	8.5	10.1	3.8
Rest of Asia	11.5	11.1	11.4	11.8	12.5	13.5	14.4	0.8
Central and South America	5.4	6.4	7.4	7.9	8.5	9.5	10.4	2.2
Total non-OECD	70.2	78.5	87.1	96.0	106.2	116.8	125.6	2.0
Total world	111.1	120.8	132.7	145.1	158.7	173.5	186.8	1.7
Discrepancy ^b	-1.8	0.4	0.6	0.9	0.5	0.8	0.6	

*Includes supplemental production, less any forecast discrepancy.

^bBalancing item. Differences between global production and consumption totals result from independent rounding and differences in conversion factors derived from heat contents of natural gas that is produced and consumed regionally.

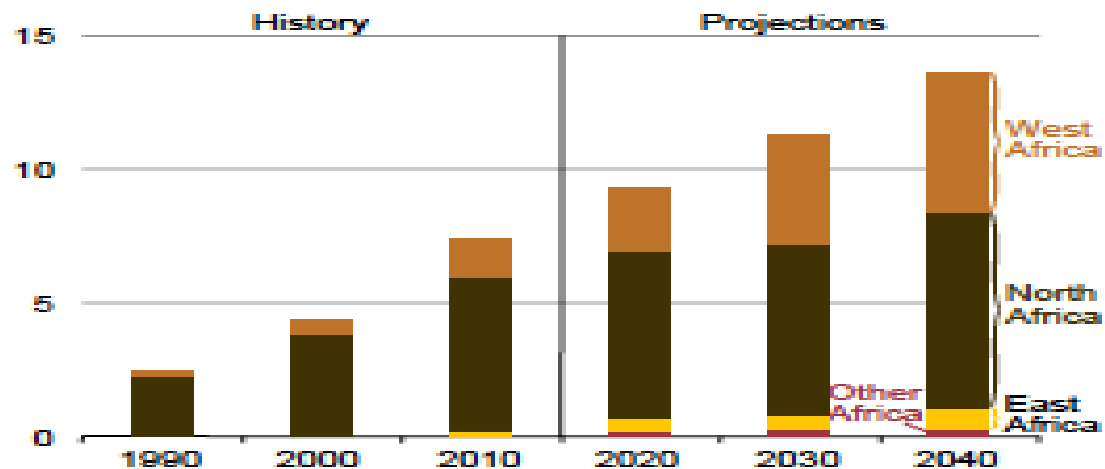
Middle Eastern increases in natural gas production, 1990-2040 (trillion cubic feet)



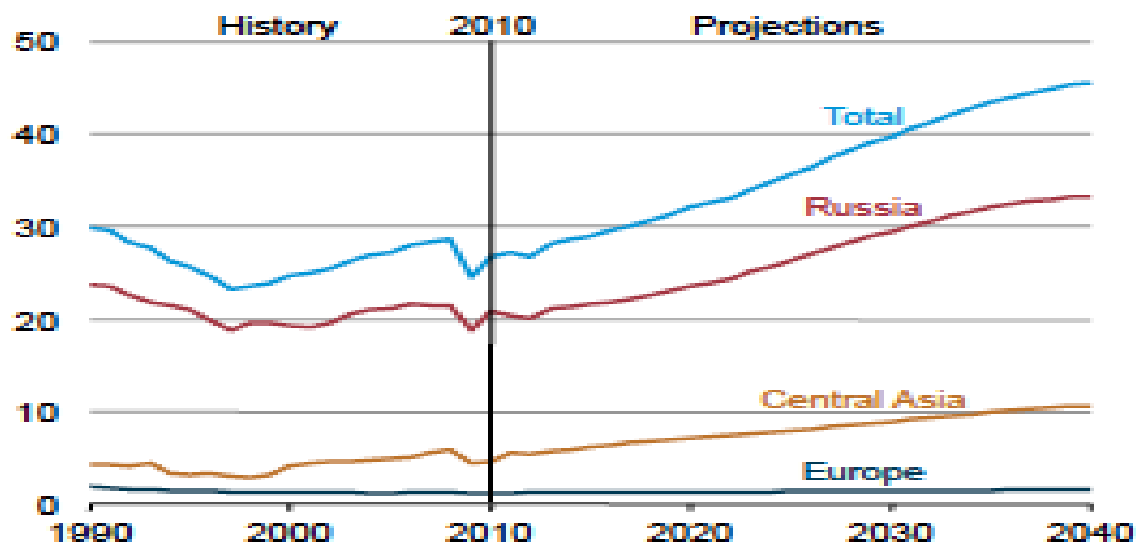
Source: EIA, *International Energy Outlook, 2013*, DOE/EIA-0484 (2013, July 2013, pp. 50-52).

Figure III.11: EIA Estimate of Key Trends in World Gas Production and Consumption: 2010-2040: Part II

Lack of Increased Production in East Africa



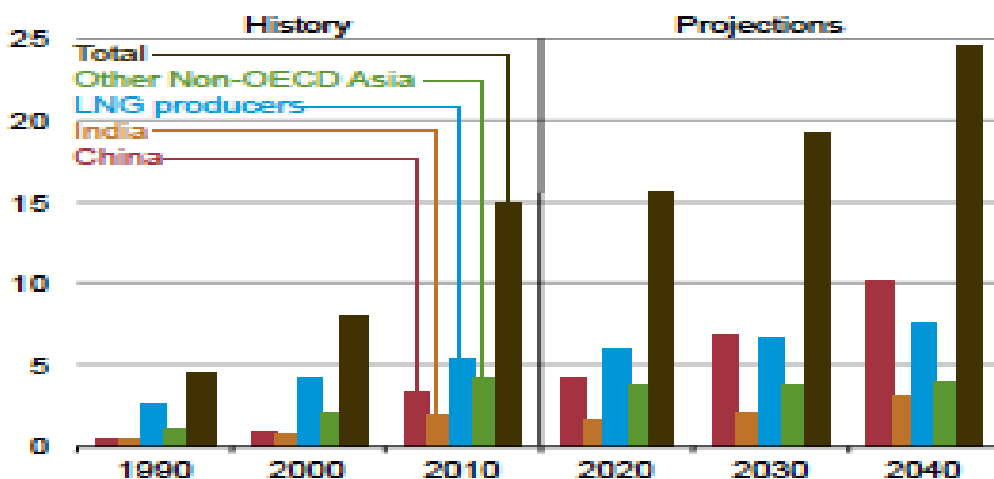
Rise of Russia and Central Asia as Gas Exporters



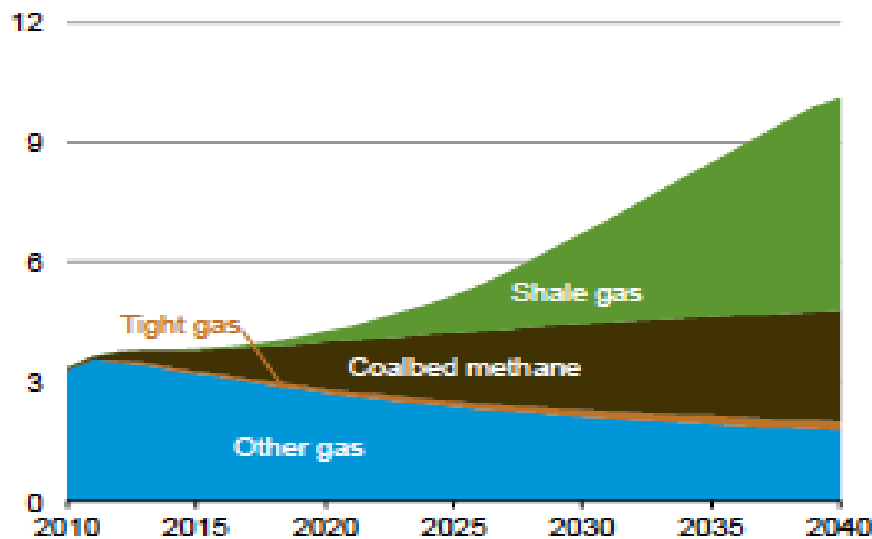
Source: EIA, *International Energy Outlook, 2013*, DOE/EIA-0484 (2013, July 2013, pp. 53-54).

Figure III.11: EIA Estimate of Key Trends in World Gas Production and Consumption: 2010-2040: Part III

Asian Dependence on Asian LNG Producers



Possible Chinese Increase in Gas Production Using Unconventional Means



Source: EIA, *International Energy Outlook, 2013*, DOE/EIA-0484 (2013, July 2013, pp. 54.)

American Strategy in the IOR and US “Energy Independence”

The extent to which the changes in the flow of energy exports affect the role of US power projection forces in the IOR region is a key strategic question for both the security and stability of the IOR, and for East Asian powers like Australia, China, Japan, and South Korea will be.

The new US strategy that the Department of Defense announced in January of 2012 gave equal importance maintaining the security of the Middle East and Asia. It never made any reference to a “pivot” to Asia, but rather described the need to maintain the security of the Middle East and Gulf region to deal with threat like terrorism and Iran, and to a limited rebalancing of US forces in Europe to Asia that later background briefings indicate would be roughly equivalent to some 5-10 percent of US air and naval forces – many of which would be based in the US and on the West coast or Hawaii, rather than forward in the Pacific. These statements were repeated in broad terms in both the US department of defense budget requests for FY2013 and FY2014.

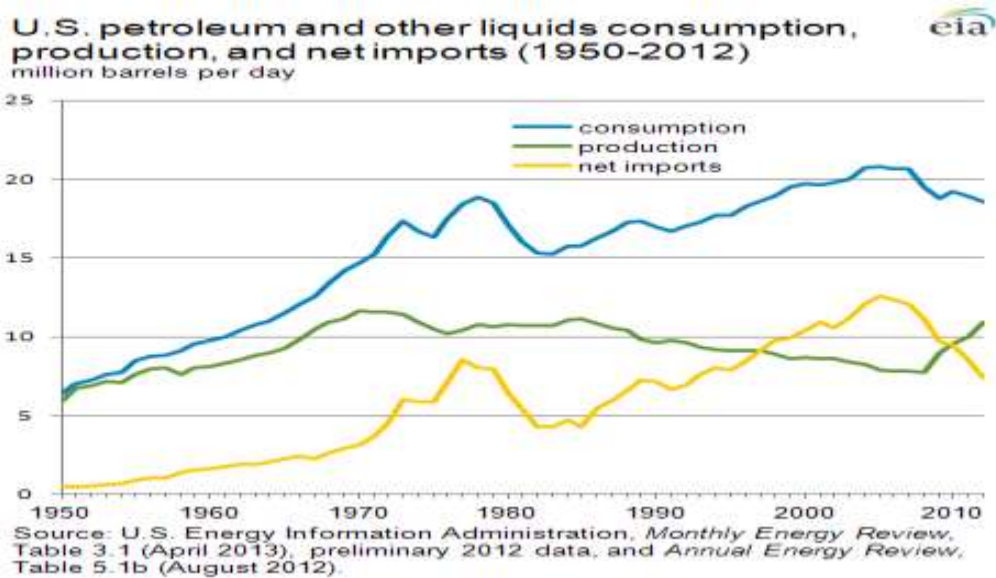
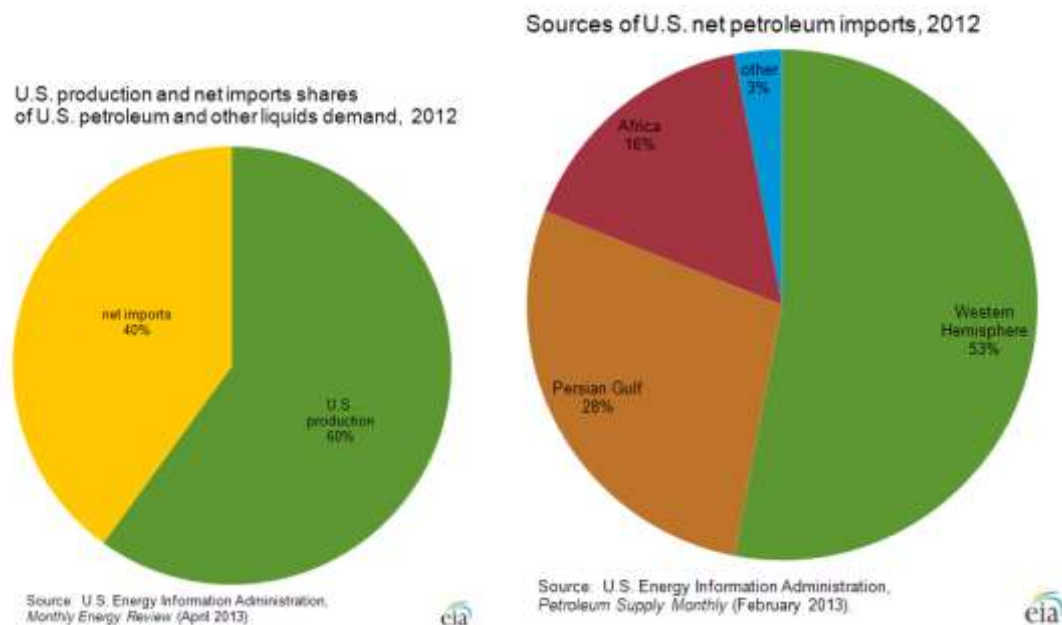
It seems unlikely that any near term changes will take place in this aspect of US military capability and strategy. As **Figure III.12** shows, the US remains heavily dependent on energy imports in the near term, including imports from the Persian Gulf and IOR region.³⁵

- The EIA reports that the United States imported 11.0 MMbd of crude oil and refined petroleum products in 2012, and exported 3.2 MMbd of crude oil and petroleum products, so net imports (imports minus exports) equaled 7.4 MMbd. The United States imported 2.1 MMbd of petroleum products such as gasoline, diesel fuel, heating oil, jet fuel, and other products while exporting 3.1 MMbd of products, making the United States a net exporter of petroleum products.
- Over 50% of U.S. crude oil and petroleum products imports came from the Western Hemisphere (North, South, and Central America, and the Caribbean, including U.S. territories) during 2012. About 29% came from the Gulf countries of Bahrain, Iraq, Kuwait, Qatar, Saudi Arabia, and United Arab Emirates. The largest sources of net crude oil and petroleum product imports were Canada and Saudi

Almost all sources agree, however, that US import dependence will be sharply reduced in the future. As later Figures show, the EIA projects United States will benefit from major increases in both unconventional oil and unconventional gas production, and in gradually converting some gas to liquid fuels for transportation purposes. At the same time, these figures shows that much of the projected US energy independence is based on the assumption that the US will benefit from major new energy production and exports from Canada. The US will remain import dependent on liquid fuel imports for its transportation sector indefinitely into the future, and its domestic supply will only increase if it continues to pay world market prices.

Even in the best case estimates, it will be at least a decade before the United States can achieve energy “independence,” even in the sense of increasing its own production to the point where its key imports will consist of liquid fuels and much of its imports can come from Canada. This still, however, raises critical issues for America’s allies in the Gulf, the rest of the IOR, Asia, and Europe. The key question is whether the US will continue to project power in ways that dominate the IOR region, how it will shape its strategic partnerships, and whether – over time – this will create a power vacuum affecting the role of China and increasingly import dependent states like Japan and South Korea.

Figure III.12: Trends in US Petroleum Import Dependence for the IOR and other Regions: 1950-2012



Source: EIA, *How dependent are we on foreign oil?*, May 10, 2013, http://www.eia.gov/energy_in_brief/article/foreign_oil_dependence.cfm

The Impact of Increased American Production of Petroleum and Other Liquids

The EIA, IEA, and virtually every other source project that United States will benefit from both increased oil production and major increases in gas production that it can easily substitute for oil in virtually every sector except transportation.

As **Figure III.13** shows, the EIA projected in April 2013 that,³⁶

Prospects for growth in petroleum and other liquid fuels production in the Americas are particularly strong, reflecting contributions from deep-water pre-salt resources in Brazil, bitumen in Canada, and tight oil in the United States. The result is a net gain in non-OPEC production from the Americas of 7.2 million barrels per day by 2025—an increase that balances liquids production with consumption in the hemisphere as demand growth is tempered by efficiency gains, especially in the U.S. transportation sector.

In the *IEO2013* Reference case, the Americas become a net exporter of liquids by the end of the projection period. There is potential for even more production growth in the Americas from both the United States, as discussed in the *Annual Energy Outlook 2013 (AEO2013)* High Oil and Gas Resource case, and from OPEC's Venezuela, which has large reserves of extra-heavy oil but does not aggressively develop new fields under the current policies assumption of the *IEO2013* Reference case. U.S. production of liquid fuels surpasses that of Russia by 2015. There are a number of factors (including accounting conventions for how liquid fuels are measured) that determine the timing, extent, and significance of such a development....

Nonpetroleum liquid resources remain a small but increasing source of liquids supply in the *IEO2013* Reference case. Production of nonpetroleum liquids, such as biofuels, CTL, and GTL, is spurred by sustained high prices in the Reference case (Figure 32). However, biofuels development also relies heavily on country-specific programs or mandates [23]. World production of nonpetroleum liquids, which in 2010 totaled only 1.6 million barrels per day (less than 2 percent of total world liquids production), increases to 4.6 million barrels per day in 2040, when it accounts for about 4 percent of total world liquids production.

At the same time, the EIA estimated that US would still be the second largest petroleum consumer in the world although the EIA projects that the rate of increase in demand will drop over time as transportation becomes more efficient and substitutes are found for petroleum liquids,³⁷

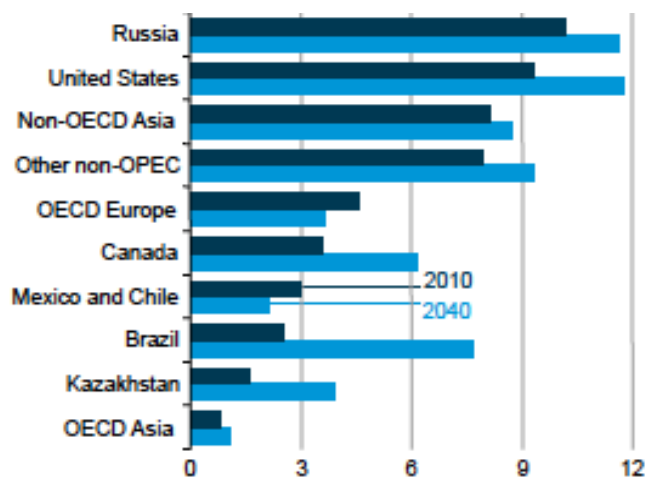
The United States is the largest liquid fuels consuming nation in the OECD, and it remains so through 2040. Over the course of the projection, increases in vehicle fuel economy offset growth in transportation activity in the United States, resulting in a decline in the use of petroleum and other liquids even as consumption of liquid biofuels increases. Biofuels, including biodiesel blended into diesel, E10, E15, and higher ethanol blends used in flex-fueled vehicles, account for 6 percent of all U.S. petroleum and other liquids consumption by energy content in 2040.

Total liquid fuels consumption in the United States rises from 18.9 million barrels per day in 2010 to 19.5 million barrels per day in 2020, after which it falls to 18.7 million barrels per day in 2030 and 18.6 million barrels per day in 2040.

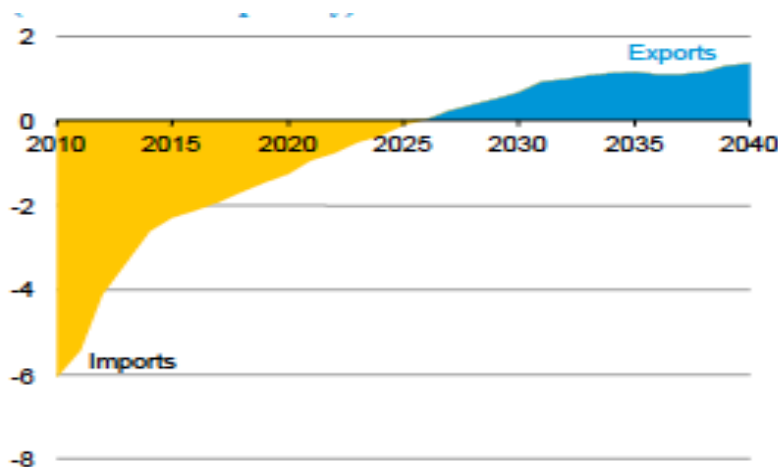
Moreover, it is important to note that while the EIA projects that North America as a whole may become independent of the need to import petroleum and other liquid fuels, it makes no such projection for the United State alone.

Figure III.13: EIA Estimate of Key Shifts in World Petroleum Affecting United States Import Dependence: 2010-2040

Non-OPEC liquids production by region and country, 2010 and 2040 (million barrels per day)



OECD and non-OECD Americas net imports and exports of liquid fuels, 2010-2040 (million barrels per day)



Source: EIA, *International Energy Outlook, 2013*, DOE/EIA-0484 (2013, July 2013, pp. 24 and 28).

The Impact of Increase US Gas Production

US import dependence will also be affected by the major increases the EIA and virtually every other source of energy forecasts project in US and other American gas production. Gas can substitute for petroleum in most aspects of US energy demand other than transportation, and this will further reduce US need for petroleum imports.

The key EIA projections are shown in **Figure III.14** and the EIA summarized the trends in US and other North American gas production as follows:³⁸

Natural gas production in the OECD Americas grows by 56 percent from 2010 to 2040. The United States, which is the largest producer in the OECD Americas and in the OECD as a whole, accounts for three-quarters of the total regional production growth, with an increase from 21.2 trillion cubic feet in 2010 to 33.1 trillion cubic feet in 2040. U.S. shale gas production grows from 4.9 trillion cubic feet in 2010 to 16.7 trillion cubic feet in 2040, more than offsetting declines in production of natural gas from other sources. In 2040, shale gas accounts for 50 percent of total U.S. natural gas production in the *IEO2013* Reference case, tight gas accounts for 22 percent, and Lower 48 offshore production accounts for 9 percent. The remaining 19 percent comes from coal bed methane, Alaska, and other associated and nonassociated Lower 48 onshore resources.

One of the keys to U.S. production growth is advanced production technology, especially the combined application of horizontal drilling and hydraulic fracturing techniques that have made the country's vast shale gas resources accessible. Rising estimates of shale gas resources have been the primary factor in nearly doubling the estimated U.S. technically recoverable natural gas resource over the past decade, and U.S. shale gas production has continued to grow despite low natural gas prices. As North American natural gas prices have remained low and liquids prices have risen with international crude oil prices, U.S. shale drilling has concentrated on liquids-rich shales such as the Bakken formation in North Dakota and the Eagle Ford formation in Texas.

Natural gas production in Canada grows by 1.1 percent per year on average over the projection period, from 5.4 trillion cubic feet in 2010 to 7.6 trillion cubic feet in 2040. As in the United States, much of the production growth comes from growing volumes of tight gas and shale gas production. Four proposed LNG liquefaction and export facilities would use feedstock gas from the Montney tight gas and Horn River shale gas formations in western Canada. If all four facilities were built and operated at their initial proposed capacity, Canada would need to supply 1.2 trillion cubic feet per year to support them—less than the decline in net pipeline exports of natural gas from Canada to the United States in the Reference case.

Currently, in addition to small but growing volumes of shale gas, Canada also produces small volumes of natural gas from coalbeds and significant volumes from tight reservoirs. In 2010, almost 40 percent of Canada's natural gas production came from tight reservoirs...Most of the country's coal bed methane production is in the province of Alberta, which had more than 11,000 producing coal bed methane wells and 260 billion cubic feet of coal bed methane production in 2010...In 2001, coal bed methane activity in the province consisted of no more than a few test wells.

Mexico's natural gas production remains fairly flat in the mid-term but more than doubles in the later years of the projection, as production from shale gas resources grows. Total natural gas production increases from 1.8 trillion cubic feet in 2010 to 3.5 trillion cubic feet in 2040. Like Canada and the United States, Mexico is thought to have substantial shale gas resources, the most prospective of which are extensions of the successful Eagle Ford Shale in the United States. However, because the shale resources in Mexico are not as well explored as those in the rest of North America, there is more uncertainty surrounding estimates of their size and producibility. Mexico also faces substantial difficulties in attracting the investment and technology improvements needed to increase natural gas production generally and production from shale resources specifically.

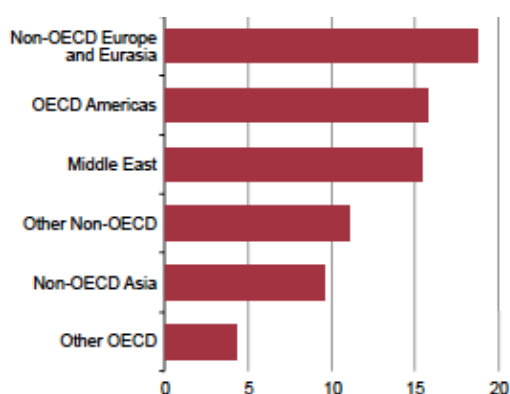
It should be noted that much of this projected increase comes from gas production technologies where it still is not possible to predict the sustained rate of recovery, price, or environmental impacts. The EIA also notes that the US will make major increases in demand that could pose a significant future need for imports if current forecasts of increase gas production are not correct.³⁹

Annual natural gas consumption in the OECD Americas region rises steadily to 41.6 trillion cubic feet in 2040, ...including increases of 4.2 trillion cubic feet from 2010 to 2020 (1.4 percent per year) and 8.2 trillion cubic feet from 2020 to 2040 (1.1 percent per year), and accounts for 60 percent of the total increase for OECD countries and 17 percent of the total increase for the world over the projection period. Although natural gas consumption grows at faster rates in other regions, OECD Americas remains the world's largest regional consumer of natural gas through 2040.

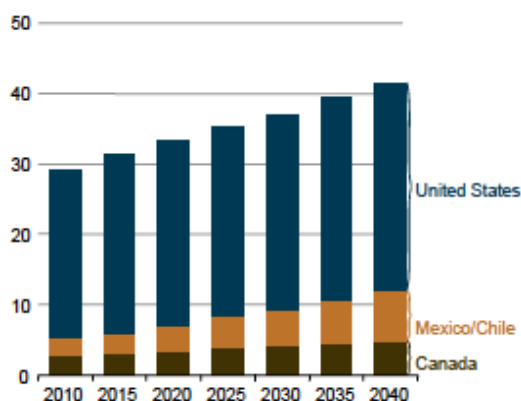
The United States—the world's largest consumer of natural gas—has the region's highest projected annual consumption growth in absolute terms... U.S. natural gas consumption increases by 5.8 trillion cubic feet through 2040, accounting for 46 percent of the region's total growth. Projections for combined annual natural gas consumption in Mexico and Chile include absolute growth in the two countries of 4.7 trillion cubic feet (38 percent of total regional growth), followed by Canada (2.0 trillion cubic feet, or 16 percent of the OECD Americas total).

Figure III.14: EIA Estimate of Key Shifts in World Gas Production Affecting United States Import Dependence: 2010-2040

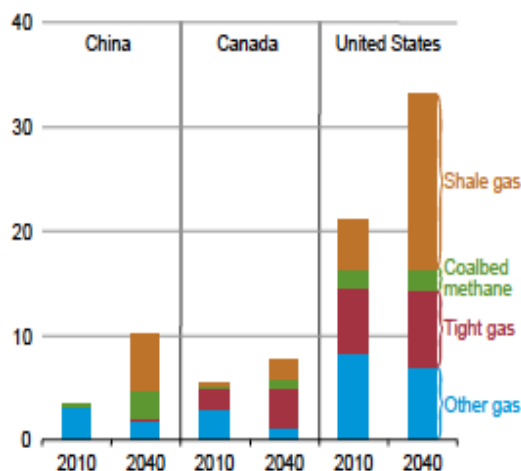
World increase in natural gas production by country grouping, 2010-2040 (trillion cubic feet)



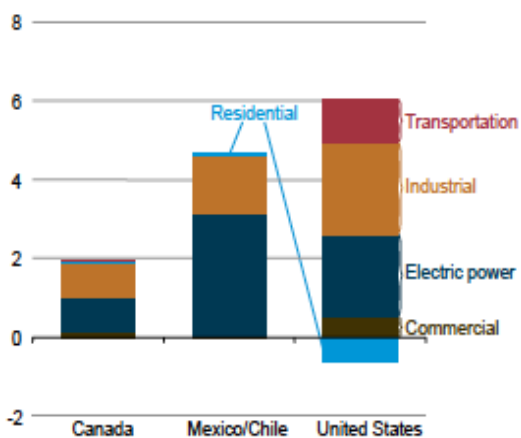
OECD America's natural gas consumption by country, 2010-2040 (trillion cubic feet)



Natural gas production in China, Canada, by country grouping, 2010-2040 (trillion cubic feet)



OECD America's natural gas consumption by country, 2010-2040 (trillion cubic feet)



Source: EIA, *International Energy Outlook, 2013*, DOE/EIA-0484 (2013, July 2013, pp. 42 and 44)

US Official Estimates of Energy Dependence on Imports, the IOR, MENA Oil, and the Gulf

This complex mix of trends in increased US oil and gas production explain why the EIA has issued estimates of US import dependence that show continued US strategic dependence on oil imports to 2040 – and that this dependence will begin to increase again after 2030. Changes in technology and the nature of reserves make any such estimates uncertain, but the current EIA estimates of the range of possible US dependence on petroleum and other liquids imports made in 2013 and 2014 are shown in **Figure III.16**. The data on gas imports are shown in **Figure III.17**.

The 2013 EIA Estimate for Liquids Imports

The EIA reference case estimate issued in the spring of 2013 indicated that the decline in US oil and energy liquids imports would still leave the US strategic dependent on imports and the security of world oil flows through 2040. The *EIA Annual Energy Outlook* for 2013 stated that,⁴⁰

In the Reference case, U.S. net imports of petroleum and other liquids decline through 2019, while still providing approximately one-third of total U.S. supply. The net import share of U.S. petroleum and other liquids consumption continues to decline in the Reference case, falling to 34 percent in 2019 before increasing to 37 percent in 2040.

...however, the EIA also projects cases where import dependence could be far lower or the US could even export liquids. It is also important to note that the International Energy Agency has separately estimated that the US could be a net exporter of natural gas by 2020 and effectively self-sufficient in terms of its net energy needs by 2035. These IEA estimates drew on estimates of the impact on US energy supply of recent improvements in drilling technique that allow the US to access first shale gas and later harder-to-reach oil deposits, along with gradual increases in efficiency and renewable energy generation.

The Executive Summary to the IEA report issued earlier in 2013 stated that,⁴¹

The recent rebound in US oil and gas production, driven by upstream technologies that are unlocking light tight oil and shale gas resources, is spurring economic activity – with less expensive gas and electricity prices giving industry a competitive edge – and steadily changing the role of North America in global energy trade. By around 2020, the United States is projected to become the largest global oil producer (overtaking Saudi Arabia until the mid-2020s) and starts to see the impact of new fuel-efficiency measures in transport. The result is a continued fall in US oil imports, to the extent that North America becomes a net oil exporter around 2030. This accelerates the switch in direction of international oil trade towards Asia, putting a focus on the security of the strategic routes that bring Middle East oil to Asian markets.

... In the Reference case Blue), U.S. net imports of petroleum and other liquids decline through 2019, while still providing approximately one-third of total U.S. supply. The net import share of U.S. petroleum and other liquids consumption continues to decline in the Reference case, falling to 34 percent in 2019 before increasing to 37 percent in 2040.

In the Low/No Net Imports case, the United States ends its reliance on net imports of liquid fuels in the mid-2030s, with net exports rising to 8 percent of total U.S. liquid fuel production in 2040. In contrast, in the High Net Imports case, net petroleum import dependence is above 44 percent in 2040, which is higher than the Reference case level of 37 percent but still well below the 2005 level of 60 percent.

In the High Oil and Gas Resource case, changes due to the supply assumptions alone cause net import dependence to decline to 7 percent in 2040, with U.S. crude oil production rising to 10.2 million barrels per day in 2040, or 4.1 million barrels per day above the Reference case level. Tight oil production accounts for more than 77 percent (or 3.2 million barrels per day) of the difference in production between the two cases. Production of natural gas plant liquids in the United States also exceeds the Reference case level.

The 2014 EIA Estimate for Liquids Imports

The EIA projections in the Annual Energy Outlook 2014 (AEO2014) showed a potential drop in Reference Case estimate of US dependence from 37% in the 2013 projections to 32% in the 2104 projections. The EIA report noted that the projections had the following outcomes,⁴²

Reference case focus on the factors that shape U.S. energy markets through 2040, under the assumption that current laws and regulations remain generally unchanged throughout the projection period. The early release provides a basis for the examination and discussion of energy market trends and serves as a starting point for analysis of potential changes in U.S. energy policies, rules, or regulations or possible technology breakthroughs. Readers are encouraged to review the full range of cases that will be presented when the complete AEO2014 is released in 2014, exploring key uncertainties in the Reference case.

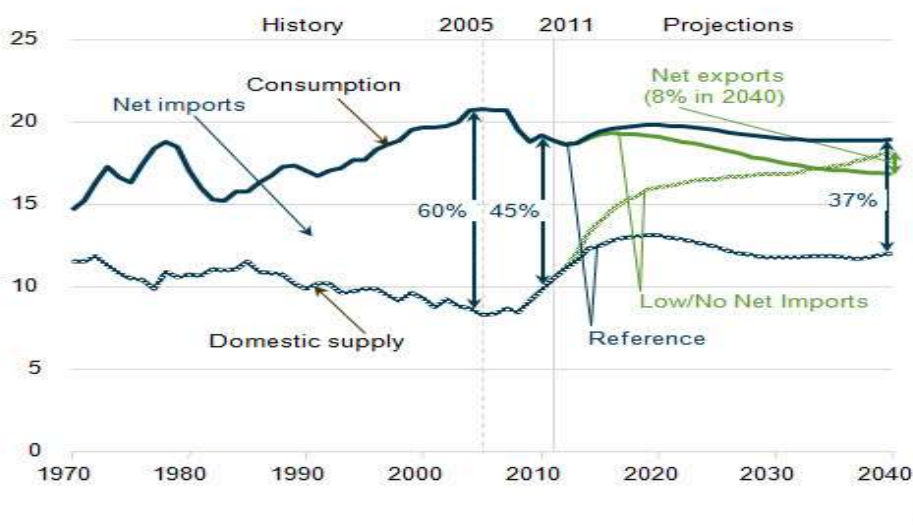
Major highlights of the AEO2014 Reference case include:

- Growing domestic production of natural gas and crude oil continues to reshape the U.S. energy economy, with crude oil production approaching the historical high achieved in 1970 of 9.6 million barrels per day...Ongoing improvements in advanced technologies for crude oil and natural gas production continue to lift domestic supply and reshape the U.S. energy economy. Domestic production of crude oil (including lease condensate) increases sharply in the AEO2014 Reference case, with annual growth averaging 0.8 million barrels per day (MMb/d) through 2016, when it totals 9.5 MMb/d
- ...While domestic crude oil production is expected to level off and then slowly decline after 2020 in the Reference case, natural gas production grows steadily, with a 56% increase between 2012 and 2040, when production reaches 37.6 trillion cubic feet (Tcf). The full AEO2014 will include cases that represent alternative oil and natural gas resource and technology assumptions.
- Low natural gas prices boost natural gas-intensive industries Industrial shipments grow at a 3.0% annual rate over the first 10 years of the projection and then slow to 1.6% annual growth for the rest of the projection. Bulk chemicals and metals-based durables account for much of the increased growth in industrial shipments in AEO2014. Industrial shipments of bulk chemicals, which benefit from an increased supply of natural gas liquids, grow by 3.4% per year from 2012 to 2025 in AEO2014, as compared with 1.9% in the Annual Energy Outlook 2013 (AEO2013) Reference case. The projection assumes growing competition from abroad that flattens output growth in energy-intensive industries after 2030.
- The higher level of industrial shipments leads to more natural gas consumption (including lease and plant fuel) in the U.S. industrial sector, increasing from 8.7 quadrillion British thermal units (Btu) in 2012 to 10.6 quadrillion Btu in 2025 in AEO2014, compared to 9.8 quadrillion Btu in 2025 in AEO2013

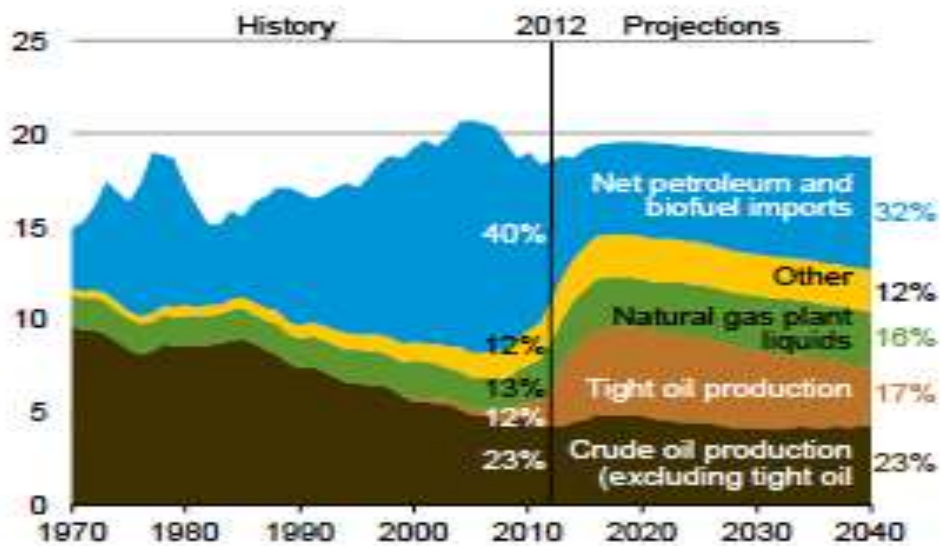
Figure III.15: Comparative Estimates of US Dependence on Total Petroleum and Other Liquids Imports: 1970-2040

FY2013 International Energy Outlook Estimate

Figure 1. Net import share of U.S. liquids supply in two cases, 1970-2040 (million barrels per day)



FY2014 Annual Energy Outlook 2014 Early Release Estimate: U.S. petroleum and other liquid fuels supply by source, 1970-2040 (million barrels per day) ⁴³



Sources: US Energy Information Administration, *Annual Energy Outlook 2013 Early Release Overview*, May 2, 2013, http://www.eia.gov/forecasts/aeo/chapter_executive_summary.cfm#tightoil and US Energy Information Administration, *Annual Energy Outlook 2014 Early Release Overview*, December 7, 2013, <http://www.eia.gov/forecasts/aeo/er/pdf/0383er%282014%29.pdf>.

US Estimates for Gas Imports

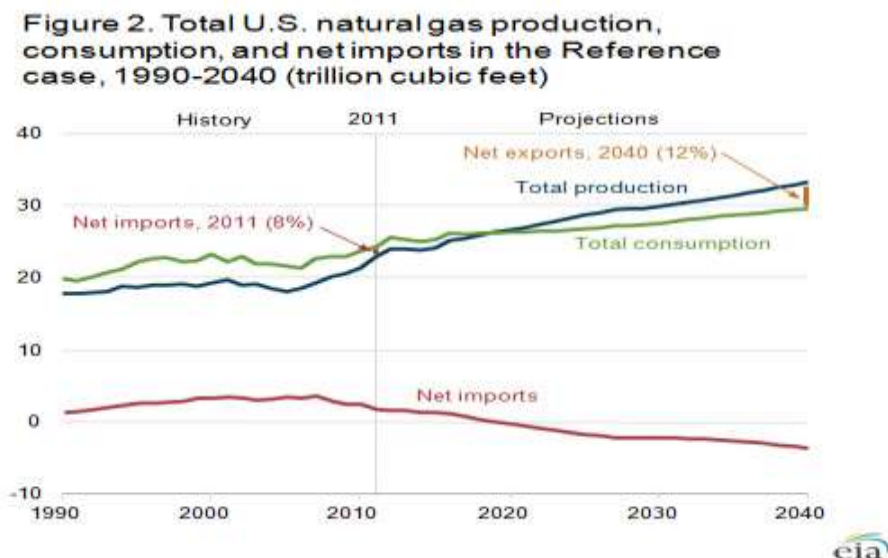
As has been touched upon earlier, the EIA estimates for 2014 were even more favorable than those in 2013, and advances in gas technology seemed more likely to make the US a net exporter of gas. Both these estimates and the range of uncertainties in estimating US gas output, however, are shown in **Figure III.17**.

Even if these more favorable predictions of cuts in US import dependence should prove accurate, this will not affect the US force at least the next decade or make the US immune to the global impact of any threat to future energy exports through the Gulf and IOR.

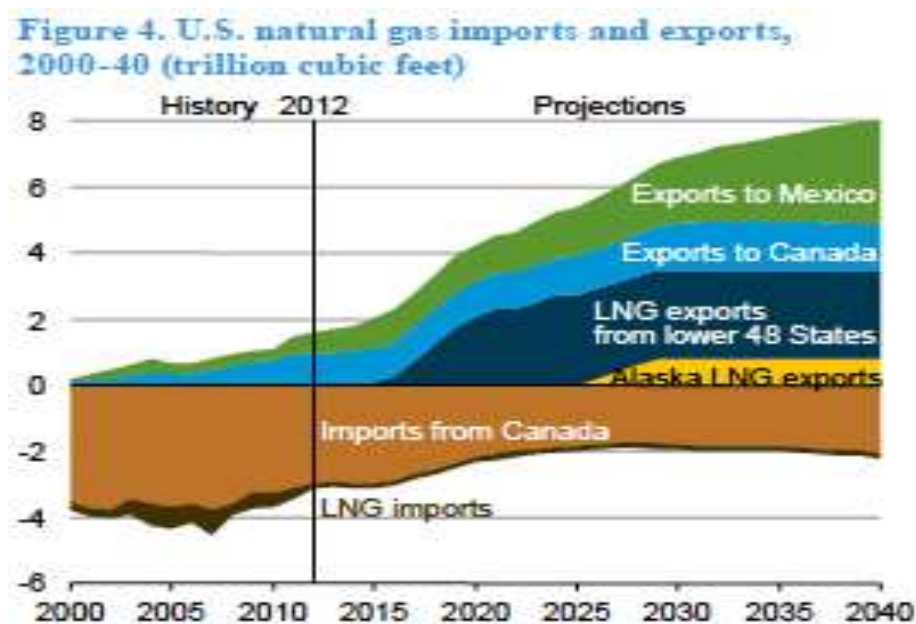
Like wheat and other global commodities, the strategic importance of oil exports is not dependent on whether petroleum goes from one nation to another at any given time, but is dependent on the supply of the overall global market and balance of supply and demand.

Figure III.16: Estimated US Dependence on Total Gas Imports: 2010-2040⁴⁴

2013 Projections in AEO13⁴⁵



2014 Projections in AEO/ER 2014⁴⁶



Source: US Energy Information Administration, *Annual Energy Outlook 2013 Early Release Overview*, May 2, 2013, http://www.eia.gov/forecasts/aeo/chapter_executive_summary.cfm#tightoil, and DOE/EIA, U.S. Energy Information Administration, *Annual Energy Outlook 2014 Early Release Overview*, December, 2013, <http://www.eia.gov/forecasts/aeo/er/pdf/0383er%282014%29.pdf>.⁴⁷

The Broader Nature of US Strategic Dependence on Oil Imports

More broadly, US strategists face the same broader issues as other industrialized states and major importers. US strategic interest are not shaped simply US energy needs, but rather how the secure and stable flow of world energy exports affects the world economy. Both the EIA and IEA agree that the world economy will become steadily more dependent on Gulf energy exports through 2035-2040. As has been noted earlier, it must be stressed that the US is becoming steadily more dependent on the overall health of the global economy, and is an indirect importer of oil through its imports of Asia and other manufactured goods – imports that are not calculated by either EIA or IEA.

US strategic interests are not dependent on where the United States gets its imports from, or U.S. direct dependence on energy imports, but U.S. dependence on the stability and health of the global economy, or whether America remains a major future direct importer of oil. US experts understand that even in the most optimistic case, the U.S. economy will still face the need to pay world energy prices in a crisis, and that the United States was increasing its dependence on trade and the health of the global economy by an average of 2 to 3% a year.⁴⁸

If a crisis occurs in the Gulf it will pay the increased world market price for all its oil – including domestic production and oil imports from other areas – as well as the other related increase in energy costs that come out of a war or crisis in the Gulf, and any reduction or expected reduction in global supply will increase such costs. Moreover, the US is projected to become even more dependent on a global economy -- and imports of manufactured goods -- that require the secure flow of Gulf energy exports to Europe and Asia.⁴⁹

To put this in perspective, the CIA *World Factbook* estimated in January 2014 that the United States had a total GDP of \$16.2 trillion in 2012. It imported \$2.3 trillion worth of goods, only 8.2% of which was oil. Other industrial goods accounted for 24.7%, capital goods accounted for 30.4%, and finished consumer goods accounted for accounted for 31.8% – a total of over 87%.⁵⁰

This indirect dependence on the stable flow of energy exports to other countries was far greater than U.S. direct dependence on petroleum imports, and goods from Asia and European states dependent on Gulf oil and gas imports accounted for well over 48%. In real world terms, even total U.S. energy independence in terms of direct imports would be strategically irrelevant compared to U.S. dependence on indirect imports.

As a result, US policymakers face the same challenge as Asian, European, and other policymakers: The global economy is critically dependent on the stable flow of Gulf oil exports. The politics of calling for “energy independence” have little – if any – impact on either US threat perceptions or plans for the defense of the Gulf. In practice, US national security planners accept the fact that the Gulf is and will remain is the location of a strategically vital share of the world’s petroleum resources.

Accordingly, even if optimistic forecasts of cuts in direct US energy imports eventually prove to be correct, this will not affect the critical strategic importance of the Gulf to the US for the foreseeable future. Long after 2020, US consumers will still have to pay global prices for their energy needs in any energy emergency coming out of a crisis in the Gulf. US strategists will also have to consider the fact that the US is currently bound to share any remain access to exports with its partners in the IEA, and the US economy will be critically dependent on the fact that US trading

partners (particularly those in East Asia, according to the IEA) will then be even more dependent on Gulf oil supplies.

Where the decline in US import dependence could have a major impact on the IOR is a future where US domestic policies and pressures continue to put acute pressure on the US federal budget and on US defense spending. In such a contingency, the US politics of “energy independence” could become more important than US strategic considerations.

The current US budget crisis has already led to major cuts in US military spending. If these continue at their current rate, they are likely to lead to significant cuts in total US military forces and the forces the US projects into the Pacific, the Middle East, and the IOR. Moreover, these political pressures will be compounded by the impact of the Budget Control Act and Sequestration unless Congress act on a Department of Defense request to ease its long term budget impact, and by continuing US problems with cost escalation.

If the current politics of the US political crisis over entitlements spending, the federal deficit, and the federal debt continue to put pressure on US national security spending, they may lead to enough cuts in US air and sea forces over the coming decade so that the US “rebalancing to Asia” ends by reducing the air and sea forces that US can project into the IOR in 2022 to levels lower than in 2012.

In practice, much of the US response to the drop in US import dependence will also depend on how the military balance in the IOR evolves, US perceptions of the risks in the region, the scale of US competition or cooperation with China, and the extent to which the US search for strategic partnerships in the Gulf and East Asia affect the cost of US power projection. Regardless of the strategic importance of the energy flows through the IOR, the US may come to feel that the cost-benefits of playing the role of global policeman half way around the world to help secure Asian strategic interests are not favorable enough to sustain the current US strategy and commitments to the IOR.

This is particularly likely if the more favorable forecasts of US and American energy supplies become the reality, and if the US fails to produce a stable solution to its current budget crisis and US politics come to focus on “independence” rather than strategic risks.⁵¹

If the US Falters or Withdraws

The analysis of security issues throughout this study shows that much depends on the role of one outside power – the United States – in using its forces to maintain stability in the IOR. It also shows that the US remains committed to the defense of the Gulf and maintaining a major presence in the Indian Ocean region. There has been considerable confusion over the level of US commitment because of speeches referring to a “pivot to Asia,” US and P5+1 negotiation with Iran, claims of US energy independence, and the impact of sequestration and US defense budget cuts.

The new US strategic guidance issued in January 2012, however, gave the same priority to the Middle East as to the “rebalancing to Asia” – the phrase used in all US strategic documents and budget requests and one that refers to a 5-10% shift in US forces away from NATO Europe and to the US west coast and Pacific. This has been regularly reaffirmed in US budget guidance through FY2014, by USCENTCOM commanders, and by Secretary of Defense Hagel in a press release issued on December 7, 2013 during a trip to the Gulf:

Secretary Hagel made it clear that the US negotiations with Iran were part of long standing P5+1 effort to halt Iran's nuclear weapons programs. He said the US was involved in 6 month process to see if it could work through its differences with Iran and that it was his opinion that this represented a wise opportunity to probe in great detail the possibilities to see if Iran was serious about following through on its commitments in the nuclear area. As for the Gulf and IOR, Hagel said that,⁵²

"Nothing has changed in terms of our defense posture in this region as a result of the deal. The only reason we are at this point is because of the pressure from sanctions, the diplomatic isolation and unity of international community, those need to maintain to have continued progress.

"Going forward, the Department of Defense will place even more emphasis on building the capacity of our partners in order to complement our strong military presence in the region. Our goal is for our allies and partners in this region to be stronger and more capable in dealing with common threats... We won't change any military posture during that 6 months. We will keep same partnerships as before we entered into 6 months. We are entering this clear-eyed. Whether we get to where we hope, we will see."

"As we strengthen our bilateral relationships throughout the Gulf, we are also committed to advancing multilateral cooperation between our allies and partners, especially through the Gulf Cooperation Council. Nations are stronger when they work together against common threats. Closer cooperation between the GCC and the United States is in all of our interests."

..."We have a ground, air, and naval presence of more than 35,000 military personnel in and immediately around the Gulf... Two years after our drawdown from Iraq, the U.S. Army continues to maintain more than 10,000 forward-deployed soldiers in the region, along with heavy armor, artillery, and attack helicopters, to serve as a theater reserve and a bulwark against any aggression."

"We have deployed our most advanced fighter aircraft throughout the region, including F-22's, to ensure that we can quickly respond to contingencies. Coupled with our unique munitions, no target is beyond our reach."

"We have deployed our most advanced intelligence, surveillance and reconnaissance assets to provide a continuous picture of activities in and around the Gulf... And we have fielded an array of missile defense capabilities –including ballistic missile defense ships, PATRIOT batteries, and sophisticated radar."

"As part of our efforts to ensure freedom of navigation throughout the Gulf, we routinely maintain a naval presence of over 40 ships in the broader region – including a carrier strike group – and conduct a range of freedom-of-navigation operations. These operations include approximately 50 transits of the Strait of Hormuz over the past six months."

"We have ramped up our minesweeping capabilities and added five coastal patrol ships to our fleet here earlier this year. We are working on a \$580 million construction program to support the expansion of 5th Fleet capabilities."

"Yesterday, I visited the Navy's new afloat forward staging base, the USS Ponce, a unique platform for special operations, as well as humanitarian assistance and disaster relief, in areas where we do not have a permanent, fixed presence. I'll also be meeting with U.S. personnel stationed at the Combined Air Operations Center in Qatar – where we have representatives from our GCC partners training and working together."

The US also is transferring over \$70 billion worth of arms to Arab Gulf and neighboring Arab states. At the same time, other US officials noted that the US could rapidly deploy massive amounts of air and cruise missile power, could base B-2 stealth bombers forward in areas like Diego Garcia, was upgrading much of its tactical airpower to F-35 stealth strike fighters, was introducing the Littoral Combat Ship to deal with threats like Iran, had offered THAAD anti-missile defenses to states like Qatar and the UAE, and that Secretary Clinton had offered the same "extended deterrence" guarantees to the Gulf states that the US had once offered to Europe during the Cold War – an offer that remained on the table.

Other officials noted that the US had stepped up its partnering and exercise activity with the Gulf States, and that moving US aircraft and ships to the West Coast and Pacific meant they could be used in the IOR and Gulf as well as the Pacific and reduced US dependence on the Suez Canal. They also noted that France and the UK had strengthened their exercise and partnership activities as well.

At least for the near and mid-term, US military forces will serve the dual role of providing both internal and external stability for GCC regimes. Their presence acts to protect GCC states from the perceived threat from Iran and ensures that shipping lanes remain open to bring GCC energy to world markets. According to the EIA, the United States received a total of 20% of oil imports from the Gulf in 2012, with 13% coming from Saudi Arabia, which indicates that the region will remain important to US direct oil needs in the medium term.

If in the long-term, however, the United States shifts its military focus away from the Gulf, China could represent another military power to secure sea-lanes, assuming Beijing continues the rapid increases in naval spending of the past two decades. Additionally, any decline in the US military presence in the Gulf may encourage China to invest heavily in naval forces to protect its access to resources and global markets.

At the same time, any such shift raises key issues regarding the role of the U.S., China, and East Asian powers like Japan and Australia in provide the air-sea-missile forces that will secure the flow of oil, gas, and petroleum products or potentially compete for influence and military power. Once again, virtually all forecasts now indicate that the US will become far less dependent on Gulf and IOR energy exports through at least 2035 while China and other Asian powers will become far more dependent.

There is little current prospect that other IOR powers – including India – can become the dominant military forces in the entire IOR region. Today, the combination of US air and sea forces – coupled the US strategic partnerships with states in the region – makes the US the preeminent military force in the IOR. The US has no peer competitors in the region, Indian naval progress has been limited, the Arab Gulf states are security partners of the US, and Britain and France have steadily cut their power projection capabilities east of the Mediterranean and continue to do so.

In short, the practical question is whether the US will continue to project its current level of power as its strategic interests diminish and those of key Asian powers rise. It is whether China will emerge as a key IOR power, and if so, whether it will cooperate with the US and other Asian states or seek to become a leading power in the region --- possibly cooperating with Pakistan and other regional states to counter US power projection capabilities and enhance its ability to sustain its air and sea forces In the IOR.

It is also whether other energy importing states like Japan, South Korea, and Singapore develop a combination of air-sea power projection forces to counterbalance China. And finally, it is whether India can individually -- or in some new set of strategic partnerships -- emerge as a key air-sea power in the region.

Maritime Traffic and Petroleum

These issues affecting the future export of energy, and strategic dependence on these exports, interact with the importance the IOR has to world maritime traffic and particularly to the flow of petroleum exports. Intraregional trade is far less important to Asia and the World than the

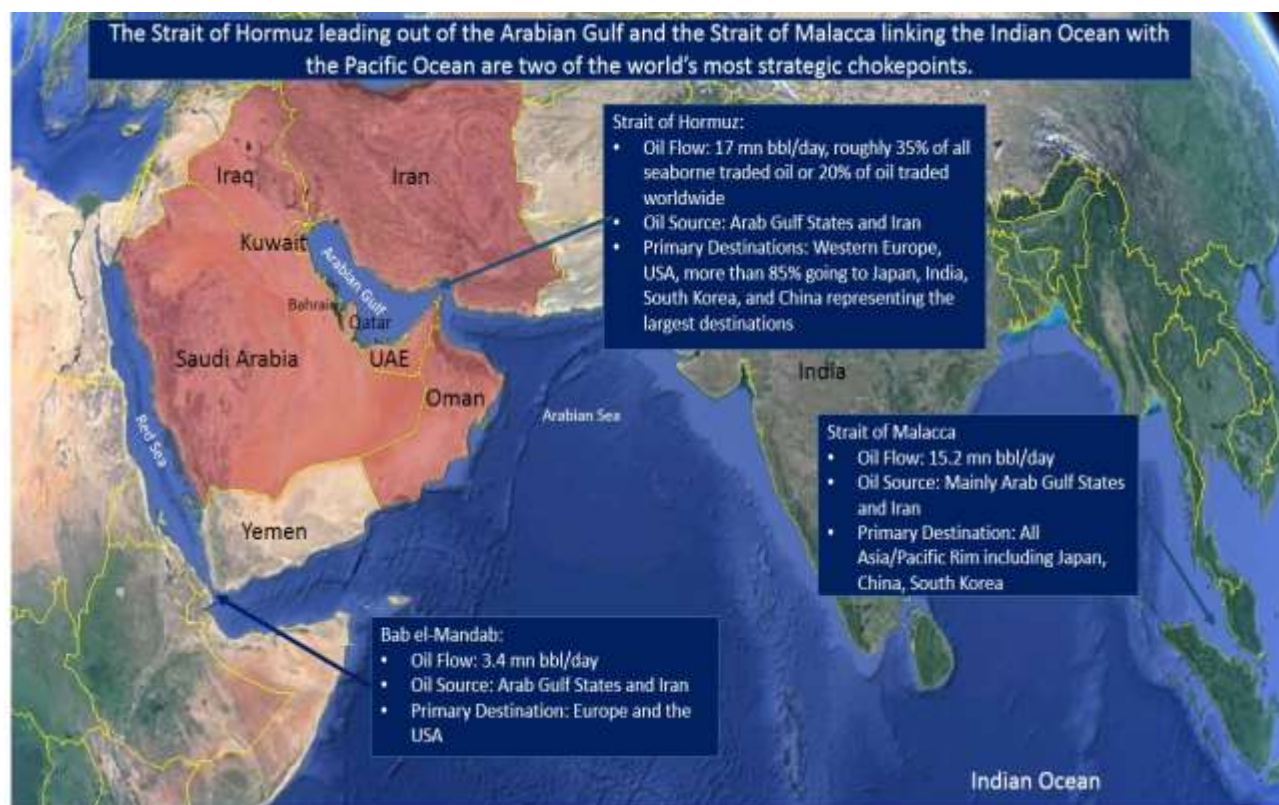
movement of goods by sea and air between countries in the IOR and Europe, Asia, and the United States.

Quite aside from the security of shipments and movement within the India Ocean, its strategic security is determined largely by the security of overflight rights and four critically important waterways that access the IOR. These waterways include the Suez Canal (Egypt), Bab el Mandeb (Djibouti-Yemen), Strait of Hormuz (Iran-Oman), and Strait of Malacca (Indonesia-Malaysia). The decision by the International Hydrographic Organization in the spring of 2000 to delimit a fifth ocean, the Southern Ocean, removed the portion of the Indian Ocean south of 60 degrees south latitude.

The impact of these choke points is summarized in **Figure III.18**. Maritime traffic through the IOR must move through “chokepoints” that are critical to the movement of goods as well as combat ships, and particularly because key alternative for moving bulk cargo are only beginning to reflect key changes to the world economy.

Major East-West rail and on road traffic from China to Europe is developing and opening new routes from China through Russia to Europe, but capacity is still low. Tensions in the states in South Asia, Central Asia, the Caspian, and Eastern Europe limit the growth of rail, road, and pipeline structures – although capacity is increasing in all these areas – including Russian pipelines to China and the opening of first major pipelines from Central Asia to China.

Figure III.17: The IOR and Key Maritime Chokepoints – Part One



Source: Dr. Abdullah Toukan, February 8, 2014

Figure III.17: The IOR and Key Maritime Chokepoints – Part Two

Important World Oil Transit Chokepoints

Name	2006E oil flow (bbl/d)	Width at Narrowest Point	Oil Source Origin	Primary Destination	Past Disturbances	Alternative Routes
The Strait of Hormuz	16.5 – 17 million	21 miles	Gulf Nations including Saudi Arabia, Iran and UAE	Japan, The United States, Western Europe, other Asian countries	Sea mines were installed during the Iran-Iraq War in the 1980s. Terrorist threats post September 11, 2001.	745 miles long East-West Pipeline through Saudi Arabia to the Red Sea
The Strait of Malacca	15 million	1.7 miles	Gulf Nations, West Africa	All Asia/Pacific consumers including Japan and China	Disruptions from piracy are a constant threat, including a terrorist attack in 2003. Collisions and oil spills are also a problem. Poor visibility from smoke haze.	Reroute through the Lombok or Sunda Strait in Indonesia. Possible pipeline construction between Malaysia and Thailand.
The Suez Canal/Suwayh Pipeline	4.5 million	1,000 feet	Gulf Nations especially Saudi Arabia, and Asia.	Europe and The United States	Suez Canal was closed for eight years after the Six Day War in 1967. Two large oil tankers ran aground in 2007 suspending traffic.	Reroute around the southern tip of Africa (the Cape of Good Hope) additional 6,000 miles.
Bab el Mandab	3.3 million	38 miles	The Gulf Nations	Europe and The United States	US Cole attack in 2000; French oil tanker in 2002, both attacks off the coast of Aden, Yemen.	Nonround traffic can use the East-West oil pipeline through Saudi Arabia. Reroute around the southern tip of Africa (the Cape of Good Hope) additional 6,000 miles
The Turkish Straits	2.4 million	0.5 mile	Caspian Sea Region	Western and Southern Europe	Numerous past shipping accidents due to the straits' unique geography. Some terrorist threats were made after September 11, 2001	No clear alternative; potential pipelines discussed including a 173 mile pipeline between Russia, Bulgaria, and Greece.
The Panama Canal	0.5 million	110 feet	The United States	The United States, and other Central American countries	Suspected terrorist target.	Reroute around Straits of Magellan, Cape Horn and Drake Passage; additional 8,000 miles

(Source: http://www.dia.doe.gov/ameu/cab/WORLD_Oil_Transit_Chokepoints/background.html)

Strait of Hormuz and Pipeline Options

The latest US Energy Information Agency (EIA) analysis of world energy movements indicates that at least 17 million barrels of oil, plus large amounts of product and LNG, move through the Strait of Hormuz at the northwestern entrance to the IOR each day. The EIA notes that,⁵³

Flows through the Strait in 2011 were roughly 35 percent of all seaborne traded oil, or almost 20 percent of oil traded worldwide. More than 85 percent of these crude oil exports went to Asian markets, with Japan, India, South Korea, and China representing the largest destinations. In addition, Qatar exports about 2 trillion cubic feet per year of liquefied natural gas (LNG) through the Strait of Hormuz, accounting for almost 20 percent of global LNG trade. Furthermore, Kuwait imports LNG volumes that travel northward through the Strait of Hormuz. These flows totaled about 100 billion cubic feet per year in 2010.

The extent to which the world is currently dependent on the flow of Gulf oil through the IOR is also indicated by the fact that there are only two functional pipeline systems from the Gulf that avoid the IOR. These two pipeline systems include the pipeline from the Gulf region in Saudi Arabia to the port of Yanbu on the Red Sea.⁵⁴

The Petrolina (East-West) Pipeline system from Abqaiq in the oil fields near Saudi Arabia's Gulf Coast to Yanbu on the Red Sea – is a 750 mile dual pipeline system that already used to near capacity and is dependent on the security of the Red Sea and Suez Canal. EIA notes that,⁵⁵

...the system consists of two pipelines with a total nameplate capacity of about 4.8 million bbl/d. The 56-inch pipeline has a nameplate capacity of 3 million bbl/d and its current throughput is about 2 million bbl/d. The 48-inch pipeline had been operating in recent years as a natural gas pipeline, but Saudi Arabia recently converted it back to an oil pipeline. The switch could increase Saudi Arabia's spare oil pipeline capacity to bypass the Strait of Hormuz from 1 million bbl/d to 2.8 million bbl/d, which is only attainable if the system is able to operate at its full nameplate capacity.

The other pipeline goes from Iraq to the port of in Turkey, and is subject to regular interruptions and is highly vulnerable to the political unrest in Iraq. IEIA describes this pipeline as follows:⁵⁶

Iraq has one major crude oil pipeline, the Kirkuk-Ceyhan (Iraq-Turkey) Pipeline that transports oil from the north of Iraq to the Turkish Mediterranean port of Ceyhan. This pipeline pumped about 0.4 million bbl/d in 2011, far below its nameplate capacity of 1.6 million bbl/d and it has been the target of sabotage attacks. Moreover, this pipeline cannot send additional volumes to bypass the Strait of Hormuz unless it receives oil from southern Iraq via the Strategic Pipeline, which links northern and southern Iraq. Currently, portions of the Strategic Pipeline are closed, and renovations to the Strategic Pipeline could take several years to complete.

The new Abu Dhabi pipeline from Habshan, a collection point for Abu Dhabi's onshore oil fields, to the port of Fujairah on the Gulf of Oman, to the IOR has a future capacity of 1.8 MMBD, but is now coming into service at point where increases in Gulf production mean it will not reduce the movement of oil and product through the Strait.⁵⁷

Westward Flow Through the Sumed Pipeline and Suez Canal

The westward flow of oil and petroleum products out of the IOR fluctuates by year and according to market conditions. EIA calculates that the flow of crude oil and products through the Suez Canal and Sumed Pipeline at the Western end of the Red Sea ranged from 3.0 MMBD to 4.7 MMBD during 2007-2011, and the flow of crude oil alone through the Bab el Mandab at the Eastern entrance ranged from 2.7 MMBD to 4.6 MMBD. The Suez Canal and SUMED Pipeline can be by passed, but only by sending ships around the Horn of South Africa – a journey that can take up to two weeks and increases shipping costs.⁵⁸

Eastern Flow Through the Strait of Malacca

Much of flow to the east goes the Strait of Malacca. This strait is located between Indonesia, Malaysia, and Singapore, at the eastern side of the IOR is a critical trade route between the Indian Ocean and the South China Sea and Pacific Ocean, and critical to the flow of oil exports from the Arab Gulf to Asian markets—like China, Japan, South Korea, and the Pacific Rim.

The EIA reports that, “Oil shipments through the Strait of Malacca supply China and Indonesia, two of the world's fastest growing economies. It is the key chokepoint in Asia with an estimated 15.2 million bbl/d flow in 2011, compared to 13.8 million bbl/d in 2007. Crude oil makes up about 90 percent of flows, with the remainder being petroleum products.”⁵⁹

If cargo vessels are included, more than 100,000 vessels transit the Strait of Malacca each year. EIA states that, “If the Strait were blocked, nearly half of the world's fleet would be required to reroute around the Indonesian archipelago through Lombok Strait, located between the islands of Bali and Lombok, or the Sunda Strait, located between Java and Sumatra.”

China is creating a new pipeline system of an oil and gas pipeline to bypass the Strait of Malacca from ports in Myanmar in the Bay of Bengal to connect with refineries and other pipelines in the Yunnan province, but the oil pipeline will only have a capacity of some 440,000 bbl/d. Given the increase in China's petroleum demand, this will do little more than help serve one Chinese regional market and have little strategic effect on energy security.

Other Trade Flows in the IOR

Other trade flows are important, but do not present the same strategic issues. Air shipment is already often cheaper for high value items than dealing with the costs imposed by time and handling in going by sea. Substituting shipment by air for shipment by sea for heavier cargoes other than impractical movements of bulk cargo.

However, the ship of critical minerals from South Africa to Europe can move around the Horn at minimal cost and the cost rise in cargos from other states on the Southeast coast of Africa is limited. Similarly, ships moving from ports in these areas to Australia would avoid the Strait of Malacca and shipments to ports in Asia could avoid the Strait of Malacca at a relatively limited cost in dollars and time.

The risks to investments in regional states and economic activity in local waters will be determined by the stability of given states and limited local conflicts in most foreseeable scenarios and not affected by chokepoints or shaped by IOR-wide considerations. Moreover, the only other critical aspects of the IOR to the rest of the world consist of strategic minerals the move along routes to the south of high-risk areas from the Horn of Africa to Myanmar. The CIA notes that,⁶⁰

Fishing fleets from Russia, Japan, South Korea, and Taiwan also exploit the Indian Ocean, mainly for shrimp and tuna. Large reserves of hydrocarbons are being tapped in the offshore areas of Saudi Arabia, Iran, India, and western Australia. An estimated 40% of the world's offshore oil production comes from the Indian Ocean. Beach sands rich in heavy minerals and offshore placer deposits are actively exploited by bordering countries, particularly India, South Africa, Indonesia, Sri Lanka, and Thailand.

IV. THE GULF SUB-REGION

The previous chapters have shown the extent to which Iran and the Arab Gulf states can produce and move oil, gas, and product by sea or pipeline has a massive impact on the economy of virtually every developed and trading state and increasingly on the developed and more advanced economies in nations of Asia – whose exports affect the security and stability of the economy of virtually every other developed state.

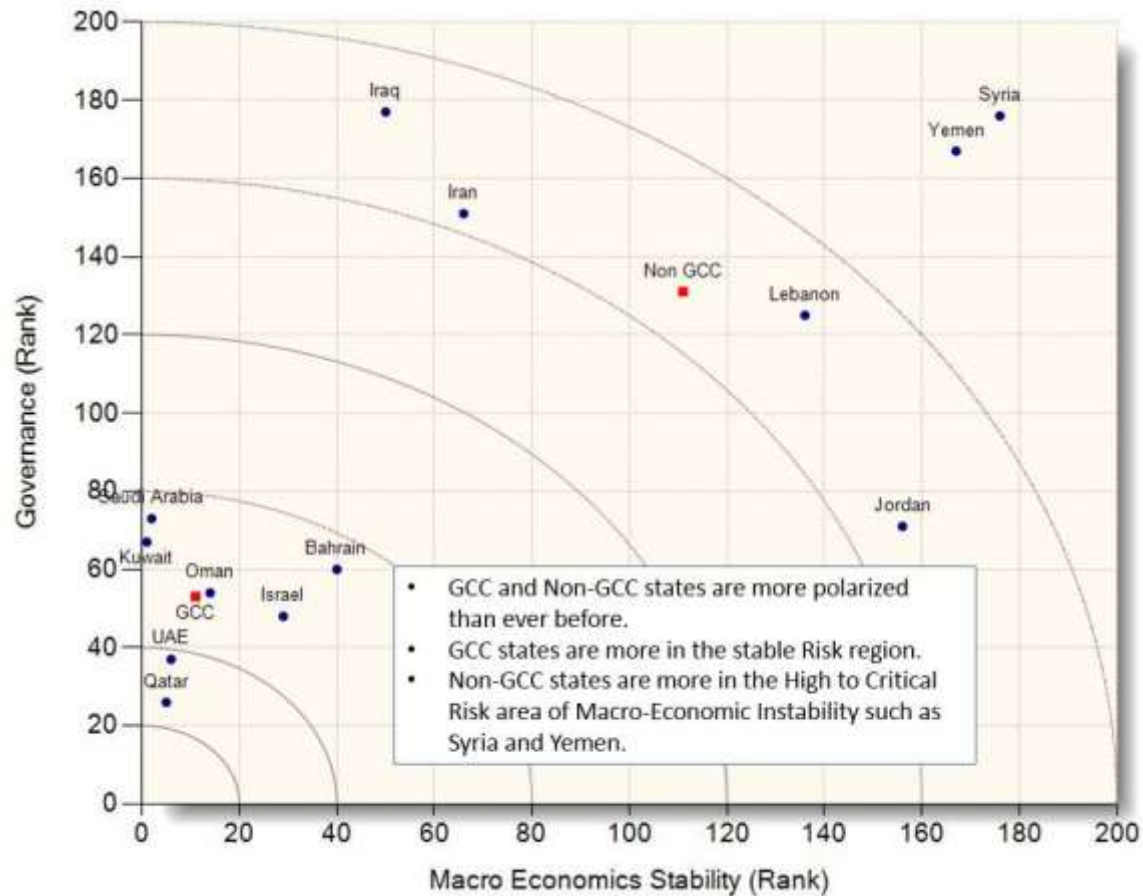
The Gulf Subregion includes Iran, Iraq, the Southern Gulf states, Yemen, and Jordan. As **Figure IV.1** shows, the Southern Gulf States -- Bahrain, Kuwait, Oman, Qatar, UAE, and Saudi Arabia – are low risk states in terms of governance and economics. In broad terms, petroleum wealth is a key factor in providing this level of stability. **Figure IV.2** shows that all the Southern Gulf states have the wealth to be low risk states.

At the same time, internal instability is a problem in in Bahrain and Iran, and a critical problem in in Iraq and Yemen. The risks affecting the Gulf states also cannot be decoupled from the political upheavals and violence in the rest of the Middle East. The interaction between the unrest in Iraq, civil war in Syria, instability in Lebanon, and combination of economic and refugee problems in Jordan presents a significant and growing risk from the West – although it is not part of the IOR.

The key power struggle in the Subregion that affects the Gulf Subregion, the rest of the IOR, and states outside the IOR is the struggle between Iran and an alliance of the US and Arab powers. This struggle involves a potential nuclear arms race as Iran's nuclear programs develop to the point where it will have a break out capability, a dual between Iran's growing asymmetric warfare forces in the Gulf and those of the GGC and the US, and a broader struggle for influence in Iraq, Syria, and Lebanon.

As the following chapter shows, there is another set of risks posed by the instability in the Red Sea and Somalia Subregion. Several of the states in Subregion suffer from serious internal instability and the risk of civil conflict. Egypt is a key case in point because of its role in establishing the security of the Suez Canal and SUMED pipeline, but Somalia, the Sudan, and Eritrea are all unstable enough to pose at least low-level future potential threats to maritime traffic through the Red Sea.

Figure IV.1: Economic and Governance Risks in the Gulf Subregion



Source: Dr. Abdullah Toukan, 10.2.14

Figure IV.2: The Southern Gulf States: An Overview- Part One

Bahrain

Population

Population: 1.2 million
 Religions/Sects: 70% Shia Islam, 11% Sunni Islam, 9% Christian, 10% other.
 Ethnic Groups: 46% Bahraini, 54% other.
 Median age: 31.4 years.
 Percent Age Zero to 24: 25.9%

Governance:

The World Bank **governance index** for 2013 rates Bahrain as being in the 11th percentile for accountability, 15th percentile for political stability and violence, 69.4 percentile for effectiveness of governance, 73rd percentile for regulatory quality, 61st percentile for quality of rule of law, and 68th percentile for control of corruption.⁶¹ Transparency International ranked Bahrain as 57th in world out of 175 in terms of overall corruption.⁶²

Economics

GDP in \$US Billions: 33.03
 GDP Per Capita in \$US: \$28,700
 GDP Per Capita (World Ranking): 52
 Poverty Level (Percent): CIA Factbook
 World Bank Ease of Doing Business Rating: The World Bank ranked Bahrain 46th in the world in ease of doing business in 2014. It has ranks 99th in ease of starting a business, 4th in dealing with construction permits, 52nd in getting electricity, 32nd in registering property, 130th in getting credit, 115th in protecting investors, 7th in paying taxes, 81st in trade across borders, 122nd in enforcing contracts, and 27th in resolving insolvency.⁶³

Kuwait

Population

Population: 2.6 million
 Religions/Sects: 70% Sunni Islam, 30% Shia Islam, 15% other.
 Ethnic Groups: 45% Kuwaiti, 35% other Arab, 9% South Asia, 4% Iranian, 7% other.
 Median age: 28.8 years.
 Percent Age Zero to 24: 41%

Governance:

The World Bank **governance index** for 2013 rates Kuwait as being in the 29th percentile for accountability, 52nd percentile for political stability and violence, 53rd percentile for effectiveness of governance, 52nd percentile for regulatory quality, 10th percentile for quality of rule of law, and 53rd percentile for control of corruption.⁶⁴ Transparency International ranked Bahrain as 57th in world out of 175 in terms of overall corruption.⁶⁵

Economics

GDP in \$US Billions: 150.9
 GDP Per Capita in \$US: \$239,900
 GDP Per Capita (World Ranking): 26
 Poverty Level (Percent): CIA Factbook
 World Bank Ease of Doing Business Rating: The World Bank ranked Kuwait 104th in the world in **ease of doing business** in 2014. It has ranks 152nd in ease of starting a business, 133rd in dealing with construction permits, 559th in getting electricity, 90th in registering property, 130th in getting credit, 80th in protecting investors, 11th in paying taxes, 112th in trade across borders, 119th in enforcing contracts, and 94th in resolving insolvency.⁶⁶

*Figure IV.2: The Southern Gulf States: An Overview- Part Two***Oman****Population**

Population: 3.15 million.
Religions/Sects: 75% Ibadhi Muslim, 25% other.
Ethnic Groups: Arab, Baluchi, South Asia.
Median age: 24.7 years.
Percent Age Zero to 24: 50.8%

Governance:

The World Bank **governance index** for 2013 rates Oman as being in the 20th percentile for accountability, 62nd percentile for political stability and violence, 61st percentile for effectiveness of governance, 73rd percentile for regulatory quality, 67th percentile for quality of rule of law, and 61st percentile for control of corruption.⁶⁷ Transparency International ranked Bahrain as 61st in world out of 175 in terms of overall corruption.⁶⁸

Economics

GDP in \$US Billions: 89.06
GDP Per Capita in \$US: \$28,800
GDP Per Capita (World Ranking): 51
Poverty Level (Percent): CIA Factbook
World Bank Ease of Doing Business Rating: The World Bank ranked Oman 47th in the world in **ease of doing business** in 2014. It has ranks 77th in ease of starting a business, 69th in dealing with construction permits, 58th in getting electricity, 21st in registering property, 86th in getting credit, 98th in protecting investors, 9th in paying taxes, 47th in trade across borders, 107th in enforcing contracts, and 72nd in resolving insolvency.⁶⁹

Qatar**Population**

Population: 2.04 million
Religions/Sects: 77.5% Sunni Muslim, 8.5% Christian, 14% other.
Ethnic Groups: 40% Arab, 18% Indian, 10% Iranian, 14% other.
Median age: 32.4 years.
Percent Age Zero to 24: 26.4%

Governance:

The World Bank **governance index** for 2013 rates Qatar as being in the 26th percentile for accountability, 92nd percentile for political stability and violence, 77th percentile for effectiveness of governance, 75th percentile for regulatory quality, 82nd percentile for quality of rule of law, and 83rd percentile for control of corruption.⁷⁰ Transparency International ranked Bahrain as 28th in world out of 175 in terms of overall corruption.⁷¹

Economics

GDP in \$US Billions: 185.3
GDP Per Capita in \$US: \$100,900.
GDP Per Capita (World Ranking): 1
Poverty Level (Percent): CIA Factbook
World Bank Ease of Doing Business Rating: The World Bank ranked Qatar 48th in the world in **ease of doing business** in 2014. It has ranks 112th in ease of starting a business, 23th in dealing with construction permits, 27th in getting electricity, 43rd in registering property, 130th in getting credit, 128th in protecting investors, 2nd in paying taxes, 67th in trade across borders, 93rd in enforcing contracts, and 36th in resolving insolvency.⁷²

*Figure IV.2: The Southern Gulf States: An Overview- Part Three***UAE****Population**

Population: 5.47 million.

Religions/Sects: 80% Sunni Muslim, 16% Shia Muslim, 4% other.

Ethnic Groups: 19% Emirati Arab, 23% other Arab and Iranian, 50% South Asian, 8% other.

Median age: 30.3 years.

Percent Age Zero to 24: 33.4%

Governance:

The World Bank **governance index** for 2013 rates the UAE as being in the 19th percentile for accountability, 73rd percentile for political stability and violence, 83rd percentile effectiveness of governance, 72nd percentile for regulatory quality, 66th percentile for quality of rule of law, and 83rd percentile for control of corruption.⁷³

Transparency International ranked Bahrain as 26th in world out of 175 in terms of overall corruption.⁷⁴

Economics

GDP in \$US Billions: 255.8

GDP Per Capita in \$US: \$29,200

GDP Per Capita (World Ranking): 49

Poverty Level (Percent): 19.5%

World Bank Ease of Doing Business Rating: The World Bank ranked the UAE 23rd in the world in **ease of doing business** in 2014. It has ranks 37th in ease of starting a business, 5th in dealing with construction permits, 4th in getting electricity, 4th in registering property, 86th in getting credit, 98th in protecting investors, 1st in paying taxes, 4th in trade across borders, 100th in enforcing contracts, and 101st in resolving insolvency.⁷⁵

Iran, and the US and Arab Gulf States

While internal stability is a major issue in four Gulf states – Bahrain, Iran, Iraq, and Yemen – it is Iran's military build-up, covert operations, and expanding influence in Syria, Iraq, and potentially in Yemen that pose the key strategic risks. The balance between Iran's forces and those of US and the forces of the southern Gulf states shapes the security of Gulf petroleum export, air and sea routes in the Gulf and Gulf of Oman.

Key strategic issues involve Iran's growing asymmetric warfare capabilities, long-range missile capabilities and progress is acquiring nuclear weapons or a nuclear breakout capability. They are matched by the growing strength of local air-sea forces; US power projection capability, growing missile defenses, and US offers of extended deterrence.

The US and the Southern Gulf States

The US and the Southern Arab Gulf states (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE) in the Gulf Cooperation Council (GCC) have a major advantage over Iran in conventional air-sea warfare capabilities. The Gulf states alone have a massive lead in air strength shown in **Figures IV.3 to IV.6**, and the US can deploy considerable reinforcements, as well as stealth systems and high technology enablers. The practical problem in terms of military capability is that the GCC still lack the ability to integrate its various national forces and make them fully interoperable with other GCC states and US forces. The GCC is a real alliance – unlike nominal groups like ASEAN, but each member country has its own characteristics dictated by nationalism, divisions between the Arab Gulf states, and by the fact that the smaller states fear Saudi dominance:

- *Bahrain:* Bahrain is closely tied to Saudi Arabia, and is the headquarters of the US Fifth Fleet. It sees Iran as a major source of its current Shia and Sunni tensions. There is still some residual tension with Qatar over past disputes over the waters and reefs between them, and the fact that the Qatari ruling Al Thani family seized the peninsula in the mid-1800s from the Bahraini Al-Khalifa royal family after the Al-Khalifa's had occupied Bahrain.
- *Kuwait:* Kuwait was the key country leading to US intervention in the Iran-Iraq War in 1987, after the US agreed to reflag Kuwaiti tankers being attacked by Iran. It has been closely tied to the US since the Iraqi invasion of Kuwait in 1990, and provided assistance for the invasion of Iraq. Kuwait maintains close cooperation with the US, with major basing and prepositioning facilities since 2002 when the US prepared for the invasion of Iraq. Kuwait's security concerns focused on the threat from Iraq until 2003, and Kuwait is careful to avoid provoking Iran when possible. There is a legacy of Kuwaiti-Saudi tension from the period in which Kuwait was the more developed state. Kuwait is partly divided from Saudi Arabia by a Neutral Zone, but there is no evidence of serious tension over management of the zone, and all boundary, offshore, and island issues seem to have been resolved well over a decade ago.
- *Oman:* Oman plays a key strategic role in Gulf security because of its location at the Strait of Hormuz, at the entrance to the Gulf, and with access to the Gulf of Oman and the Indian Ocean. It has a long history of low-level tension with Saudi Arabia over past border disputes, the Omani search for an increased role in the GCC and aid for its forces, and Oman's desire to avoid Saudi domination of the GCC. Oman had some past tension with UAE over maritime boundaries. It offers the US contingency bases and prepositioning facilities, and Oman has close security ties to the UK. Muscat has tried to maintain correct and "friendly" relations with Iran – which sits across from Oman at the Strait of Hormuz – but has been careful to assert its sovereignty and avoid any Iranian interference.
- *Qatar:* Qatar is a key partner of the US. It hosts the US Combined Air Operations Center (CAOC), and provides air basing and prepositioning facilities. Qatar shares the same interpretation of Islam as Saudi Arabia, but there is a history of border disputes with Saudi Arabia which seemed to be resolved in 2001, along with its border disputes with Bahrain, but have led to some discussion of border revisions between Qatar, Saudi Arabia, and the UAE.

There was ongoing tension between Saudi Arabia, Abu Dhabi and Qatar's ruler – Amir Hamad bin Khalifa Al Thani. Amir Hamad overthrew his father in a bloodless coup in 1995 and then felt Saudi Arabia and the UAE supported a failed counter coup attempt by his father. The Amir and his brother, the Foreign Minister and Prime Minister Sheikh Hamad bin Jassim al-Thani often took positions that challenged or disagreed with Saudi Arabia.

This situation may have changed, however, in late June 2013. Amir Hamad gave up the throne and made his son, Sheikh Tamim bin Hamad al-Thani, the new Amir. Amir Tamim replaced Foreign Minister and Prime Minister Sheikh Hamad bin Jassim al-Thani, and supported Saudi Arabia and the UAE in support of the Egyptian Army's overthrow of Morsi in Egypt.

Amir Tamim did make it clear in his first speech, however, that. "We don't take direction (from anyone) and this independent behavior is one of the established facts"...As Arabs we reject splitting countries on a sectarian basis... and because this split allows for foreign powers to interfere in the internal affairs of Arabs and influence them... We are a coherent state, not a political party, and therefore we seek to keep relationships with all governments and states... We respect all the influential and active political trends in the region, but we are not affiliated with one trend against the other. We are Muslims and Arabs who respect diversity of sects and respect all religions in our countries and outside of them."

Both Qatar and Saudi Arabia supported the rebel side in the Syrian civil war, but Qatar supported more hardline Islamist elements while Saudi Arabia supported more moderate factions. Qatar supported the Muslim Brotherhood in Egypt, opposed the Egyptian military's overthrow of President Morsi's government, and backed some elements of Muslim Brotherhood-linked entities in Syria. Saudi Arabia, the UAE, and Kuwait strongly backed the Egyptian military in overthrowing Morsi and provided some \$12 billion in aid – opposing both Qatar and the US which had pressed the military reach some settlement with Morsi, avoid civil violence and repression, and move quick towards elections. These differences have led to quiet rifts within the GCC, creating challenges for the US as it works to build consensus on regional issues.⁷⁶

- *Saudi Arabia:* Saudi Arabia is the largest power by far in the Southern Gulf and the only GCC state large enough to have great strategic depth. It has been a key security partner of the US since World War II, and was the co-commander with the US and leader of the Arab forces in the coalition that liberated Kuwait in 1990-1991. Saudi Arabia no longer provides basing facilities to the US, but provided quiet support to the US during its invasion of Iraq in 2003, has strong US advisory teams for its military, National Guard, and internal security forces, and has bought massive numbers of arms from the US. Saudi Arabia has sought correct and “friendly” relations with Iran, but has long challenged any Iranian effort to lead the Gulf.

The Kingdom has leveraged its power, as well as the ambiguity of border demarcations, to influence energy developments in the region. It is reported to have initially opposed the Dolphin natural gas pipeline, which links Qatar and the UAE. Though that opposition eventually ended, some reports indicate Riyadh blocked efforts by Qatar to develop a pipeline with Kuwait.⁷⁷ These issues underscore the need for increased cooperation through the GCC to formalize borders and cooperatively address energy issues.

- *UAE:* The UAE has become the most effective military force in the GCC, and now cooperates closely with the US in its military development and security affairs in the Gulf. Like Qatar, it is one of the two states now buying THAAD missile defenses, and has played an overt role in supporting insurgents in Libya and Sunni forces in Syria. The Emirates have been divided in the past in dealing with Iran; Dubai is a key transshipment and training partner with Iran, but Abu Dhabi and Sharjah have long led the GCC-wide challenge to Iran’s control of Abu Musa and the Tunbs – islands the Shah of Iran seized from Sharjah during British withdrawal from the Gulf and which Iran later fully occupied. At present, the UAE seems united in resisting Iran. There is some tension with Saudi Arabia over Saudi efforts to lead the GCC, and some low-level comments about reopening past border issues.
- *Yemen:* Yemen has long been the most troubled and poorest Gulf state, lacking significant petroleum resources, and built on an uncertain unity between what was once North Yemen or the Yemeni Arab Republic (YAR) and South Yemen or the People’s Democratic Republic of Yemen (PDRY). Both states were affected by war – the YAR by a civil war and an Egyptian invasion that marked the first use of poison gas since the end of World War II, and the PDRY by constant internal power struggles and its support of the Dhofar rebellion in Oman. Unity came only after the internal collapse of the PDRY and a low-level conflict between northern and southern factions. A failed central government, a failed economy, massive population growth, tribal and sectarian differences, and shortages in water have left Yemen under uncertain central control, brought Saudi Arabia to intervene in the northwest border area, and have made Yemen the key source of instability in the Arabian Peninsula.

Iran’s Stability, Internal Security and Military Capabilities

Iran presents a major challenge to regional stability as well as to the security of world petroleum exports and the global economy. It does seem to have largely repressed the political unrest that occurred after its 2009 Presidential election. There were no meaningful political protests in its 2013 Presidential election even though no opposition candidate was allowed to run. If anything, the election of the most moderate pro-regime candidate – Hassan Rouhani – seemed to meet enough popular expectations to restore the credibility of the regime to most Iranians – at least for a while.

Iran’s underlying political, economic, and demographic structure, however, raises it to at least the moderate risk category. Almost every international index is negative, and it is important to note that most were in decline before the US and EU imposed stricter sanction in 2011 – largely because of chronic mismanagement of the Iranian economy, misgovernment, and the pressure of population growth:

- The World Bank ranks Iran as having extremely low quality of governance. It ranks 199th in the world in accountability, 190th in political stability and violence, 134th in government effectiveness, 169th in the quality of rule of law, 195th in the quality of government regulation, and 159th in the control of corruption.⁷⁸
- Iran ranks 144th in the Transparency international Corruptions Perception Index.⁷⁹

- Iran ranks only 152st in the World Bank ease of doing business ranking.⁸⁰ It has major problems in starting a business, registering property, getting electricity, protecting investors, taxation, trading across borders, and resolving insolvency.⁸¹
- Iran ranks 76th on the UN Human development Index. The UAE ranks 41st. Saudi Arabia ranks 57th.⁸²
- In spite of its high oil revenues, Iran's per capita income (\$12,800) only ranks 103rd in the world, the second lowest of any Gulf state, and far lower than that of any of the Southern Gulf states.⁸³
- Although Iran's birthrate has dropped, it is still under acute demographic pressure. The US Census Bureau estimates that it had a population of 16.4 million in 1950, 39.7 million in 1980, 66.6 million in 2000, and 79.9 million in 2013. It estimates that it will have a population of 90.5 million in 2025 and 100.0 million in 2050.⁸⁴

It should be noted, however, that President Rouhani has taken major new initiatives to reduce tension over Iran's nuclear programs and improve relations with the other Gulf states, and has promised to make serious economic reforms rather than rely on the patchwork mix of subsidies and state intervention pursued by his predecessor. At the same time, previous Iranian Presidents have made similar promises with little result, it is still unclear whether any lasting agreement over Iran's nuclear programs can be reached, and tensions between Iran and its Arab Gulf neighbors over Bahrain Lebanon, Iraq, Syria, and Yemen still present serious problems.

The Gulf Military Balance and Iran's Evolving Military Threat

There is nothing static about the military balance in the Middle East and Gulf Subregion. Much depends on the future of negotiations between Iran and the US and other members of the 5+1 that could end the risk of Iran going nuclear and a more intensive nuclear arms race in the region at a time Israel and the US already have extensive nuclear forces.

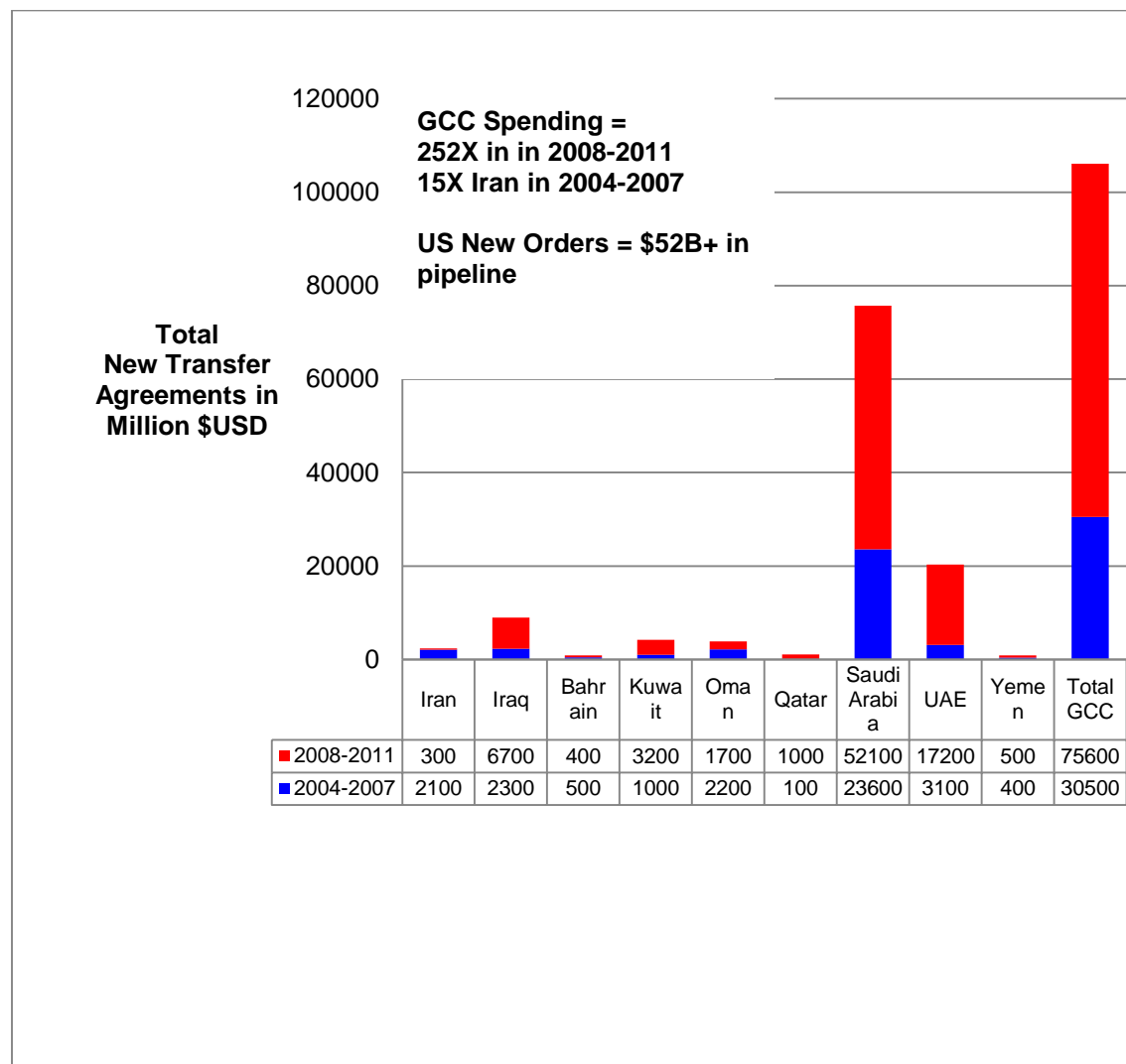
Iran is far from any kind of military hegemon. It can play a spoiler role in countries like Bahrain, Iraq, Lebanon, Syria, and Yemen, but its air force is large obsolete or consists of more modern but mediocre aircraft. Its surface-to-air missile force is largely obsolescent, and it has only limited and largely aging surface fleet capabilities.

Iran's answer has been to support Shi'ite and other insurgent factions and protest movements in neighboring states, create a major mix of asymmetric naval and missile forces to try to offset its conventional weaknesses, and build a major force of long range artillery rockets and missiles.

Much depends on how successful Iran's covert and overt efforts in neighboring states prove to be, the effectiveness of its asymmetric build-up, and the development of its long-range rocket and missile forces. Iran can only offset the massive conventional advantages that the US and Arab Gulf states have in air and seapower if it can acquire nuclear weapons or makes it conventionally armed missiles a far more effective deterrent and warfighting capability.

Much depends on whether Iran can create the kind of terminal guidance systems that could give its missiles long-range precision strike capability and its ability to obtain modern air defense systems like the Russian S-300 or 3-400. Much also depends on the ability of the GCC states to create effective missile defenses and better integrate their air and missile defense systems.

Figure IV.3: Iran's Slow Rate of Military Modernization Compared to the GCC States

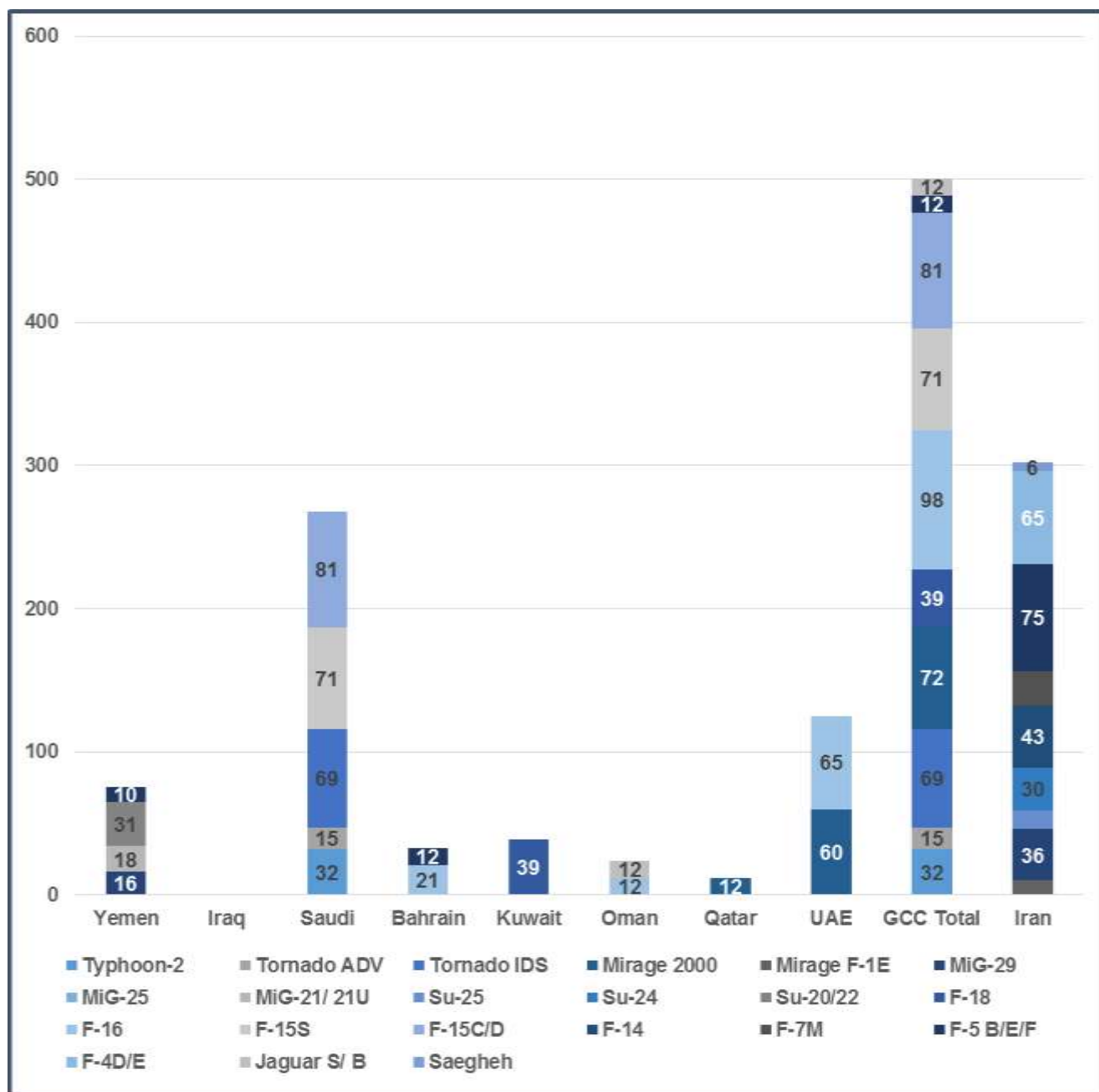


Source: Richard F. Grimmett and Paul K. Kerr, *Conventional Arms Transfers to Developing Nations, 2004-2011*, Congressional Research Service, August 24, 2012, pp. 58-59. "0" represents any value below \$50 million.

Figure IV.4: Combat Aircraft by Type

	Yemen	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	GCC Total	Iran
Typhoon-2			32						32	
Tornado ADV			15						15	
Tornado IDS			69						69	
Mirage 2000							12	60	72	
Mirage F-1E									0	10
MiG-29	16									36
MiG-25										
MiG-21/21U	18									
Su-25										13
Su-24										30
Su-20/22	31									
F-18					39				39	
F-16				21		12		65	98	
F-15S			71						71	
F-15C/D			81						81	
F-14										43
F-7M										24
F-5 B/E/F	10			12					12	75
F-4D/E										65
Jaguar S/ B						12			12	
Saegheh										6

Source: Adapted from the IISS, *Military Balance*, 2014; and the Jane's Sentinel series

Figure IV.5: Comparative Total Combat Aircraft

Source: Adapted from the IISS, *Military Balance*, 2014; and the Jane's Sentinel series

Figure IV.6: Comparative Land-Based Air Defenses

Country	Major	SAM	Light SAM	AA Guns
Bahrain	8	I Hawk MIM-23B	60 R BS-70 18 FIM-92A Stinger 7 Crotale	15 27 guns Oerlikon 35 mm 12 L/70 40 mm
Iran		16/150 I Hawk 3/10 SA-5 45 SA-2 Guideline	SA-7/14/16, HQ-7 29 SA-15 Some QW-1 Misaq 29 TOR-M1 Some HN-5 5/30 Rapier 10 Pantsyr (SA-22) Some FM-80 (Ch Crotale) 15 Tigercat Some FIM-92A Stinger	1,700 Guns ZSU-23-4 23mm ZPU-2/4 23mm ZU-23 23mm M-1939 37mm S-60 57mm ZSU-57-2
Iraq				
Kuwait		5 / 24 I Hawk Phase III 5/40 Patriot PAC-2	12 Aspide 12 Starburst Aspide Stinger	12 Oerlikon 35mm
Oman		None	Blowpipe 8 Mistral 2 SP 12 Panstsy S1E	26 guns 4 ZU-23-2 23 mm 10 GDF-005 Skyguard 35
mm			34 SA-7 6 Blindfire S713 Martello 20 Javelin 40 Rapier	12 L-60 40 mm
Qatar		None	10 Blowpipe 12 FIM-92A Stinger 9 Roland II 24 Mistral 20 SA-7	?
Saudi Arabia		16/128 I Hawk 4-6/16-24 Patriot 2 17/73 Shahine Mobile	40 Crotale 500 Stinger (ARMY) 500 Mistral (ADF)	92 1,220 guns M-163 Vulcan 20 mm 30 M-167 Vulcan 20 mm
(NG)		16/96 PAC-2 launchers 17 ANA/FPS-117 radar 73/68 Crotale/Shahine	500 500 FIM-43 Redeye Redeye (ADF) 73 -141 Shahine static	128 8 50 AMX-30SA 30 mm GDF Oerlikon 35mm 150 L-70 40 mm (in store) 130 M-2 90 mm (NG)
UAE		2/6/36 I Hawk	20+ Blowpipe 20 Mistral Some Rapier Some Crotale Some RB-70 Some Javelin Some SA-18	62 guns 42 M-3VDA 20 mm SP 20 GCF-BM2 30 mm
Yemen		Some SA-2, 3 Some SA-6 SP	Some 800 SA-7 Some SA-9 SP Some SA-13 SP Some SA-14	530 guns 20 M-163 Vulcan SP 20mm 50 ZSU-23-4 SP 23 mm 100 ZSU-23-2 23 mm 150 M-1939 37 mm 50 M-167 20mm 120 S-60 57 mm 40 M-1939 KS-12 85 mm

Source: Adapted by Anthony H. Cordesman from IISS, *The Military Balance*, *Periscope*, JCSS, *Middle East Military Balance*, Jane's *Sentinel* and *Jane's Defense Weekly*. Some data adjusted or estimated by the author.

Iran's Asymmetric Capabilities: The Al Quds Force

Iran now poses a constant low-level asymmetric threat to its neighbors in the IOR region. Iran uses its intelligence service, its diplomats and attaches, “private” citizens, businesses covers, and foreign nationals to support its efforts at asymmetric and political warfare and study American capabilities and vulnerabilities. It has built up a specialized force to work with outside state and non-state actors called the Al Quds Force. The size and strength of this force is shown in **Figure IV.7**.

The Al Quds Force is a branch of the IRGC that is assigned to special operations and unconventional warfare, and has had priority in terms of funding, training, and equipment. It plays a major role in giving Iran the ability to conduct unconventional warfare overseas using various foreign movements as proxies, and is thought to be composed of 5-15,000 men.

In January 2007, Iran's Supreme National Security Council (SNSC) decided to place all Iranian operations in Iraq under the command of the Al Quds Force. At the same time, the SNSC decided to increase the personnel strength of the Al Quds to 15,000.⁸⁵ Exact force details are unknown, but reports indicate that hundreds of Al Quds forces took part in Iranian operations in Iraq between 2003 and 2011.⁸⁶

The Al Quds Force is under the command of Brigadier General Qassem Soleimani and has supported non-state actors in many foreign countries. These include Hezbollah in Lebanon, Hamas and the Palestinian Islamic Jihad in the Gaza Strip and West Bank, Shi'ite militias in Iraq, and Shi'ites in Afghanistan. Links to Sunni extremist groups like Al Qaeda have been reported, but never convincingly confirmed.

On January 11, 2007, the director of the Defense Intelligence Agency stated in testimony before the US Senate Select Committee on Intelligence that Iran's Islamic Revolutionary Guards Corps-Quds Force had the lead for Iranian transnational terrorist activities, in conjunction with Lebanese Hezbollah and Iran's intelligence agencies.⁸⁷ Other sources believe that the primary mission of the Al Quds Force has been to support Shi'ite movements and militias; such aid and weapons transfers seem to have increased significantly in the spring of 2007.

The US Secretary of Defense summarized the role of the Al Quds Force as follows in the annual report on Iranian forces to Congress that he issued on June 29, 2012,⁸⁸

Iran established the Islamic Revolutionary Guards Corps-Qods Force in 1990 to provide arms, funding, and paramilitary training to extremist groups. We assess with high confidence that during the past three decades Iran has methodically cultivated a network of sponsored terrorist surrogates capable of targeting US and Israeli interests; we suspect this activity continues. Iran's unconventional forces are trained according to its asymmetric warfare doctrine and would present a formidable force while defending Iranian territory.

...through the IRGC-QF, Iran provides material support to terrorist or militant groups such as Hamas, Lebanese Hezbollah, the Palestinian Islamic Jihad, the Taliban, and Iraqi Shia groups.

In close cooperation with Syria, Iran has provided Lebanese Hezbollah with increasingly sophisticated weapons, including a wide array of missiles and rockets that allow Hezbollah to launch weapons from deeper in Lebanon or to strike Israel. We judge that the Iranian military trains Hezbollah and Palestinian extremist groups throughout the region.

Iran provides funding and possibly weapons to Hamas and other Palestinian terrorists in the Gaza strip.

The 2013 version of the same report entitled, “Annual Report on Military Power of Iran,” has been released to news organizations, but not the public. News reports do quote a section regarding the Al Quds force,⁸⁹

We assess with high confidence that during the past three decades, Iran has methodically cultivated a network of terrorist and militant groups capable of targeting regional and extra-regional targets...IRGC-QF is Iran's principal interlocutor to Hezbollah.

Some reports indicate that the budget for the Al Quds Force is classified, directly controlled by the office of Supreme Leader Khamenei, and is not reflected in Iran's general budget. The active elements of the Al Quds Force operate outside Iran's borders, although it has bases both inside and outside of Iran. The Al Quds Force's troops are divided into specific groups or "corps" for each country or area in which they operate. There are Directorates for Iraq; Lebanon, Palestine, and Jordan; Afghanistan, Pakistan, and India; Turkey and the Arabian Peninsula; Asian countries of the former Soviet Union; Western nations (Europe and North America); and North Africa (Egypt, Tunisia, Algeria, Sudan, and Morocco).

The Al Quds Force has offices or "sections" in many Iranian embassies, which are closed to most embassy staff. It is not clear whether these are integrated with Iranian intelligence operations or if the ambassador in each embassy has control of, or detailed knowledge of, operations by the Al Quds staff. However, there are indications that most operations are coordinated between the IRGC and offices within the Iranian Foreign Ministry and MOIS. There are separate operational organizations in Lebanon, Turkey, Pakistan, and several North African countries. There are also indications that such elements may have participated in the bombing of the Israeli Embassy in Argentina in 1992 and the Jewish Community Center in Buenos Aires in 1994 – although Iran has strongly denied any involvement in either.⁹⁰

The Al Quds Force seems to control many of Iran's training camps for extremists and guerilla warriors in Iran and countries like Iraq, the Sudan and Lebanon. The civil war in Syria, and Iran's support of Assad, has led to the creation of at least three Alawite militia training centers in Syria that reports indicate are operated by the Al Quds force. In the Sudan, the Al Quds Force is believed to run a training camp of unspecified nature, while in Lebanon its operations have ranged in size, from 2-3 camps during the Lebanese Civil War to smaller groups of "councilors" today. It also has at least four major training facilities in Iran. The Al Quds Force has a main training center at Imam Ali University at the Sa'dabad Palace in northern Tehran where troops study advanced asymmetric warfare techniques and terrorist operations.

There are other training camps in the Qom, Tabriz, and Mashhad governorates and in Lebanon and the Sudan. These include the Al Nasr camp for training Iraqi Shi'ites and Iraqi and Turkish Kurds in northwest Iran, and a camp near Mashhad for training Afghan and Tajik revolutionaries. The Al Quds Force seems to help operate the Manzariyah training center near Qom, which recruits foreign students in the religious seminary and which seems to have trained some Bahraini extremists. Some foreigners are reported to have received training in demolition and sabotage at an IRGC facility near Isfahan, in airport infiltration at a facility near Mashhad and Shiraz, and in underwater warfare at an IRGC facility at Bandar-e Abbas.⁹¹

US experts report that these camps and other facilities provide specialized training in bomb making, use of IEDs, use of computers, sabotage, and use of ATGMs and MANPADs. This training has been extensive for Iraqi Shi'ite militias. Most training of Hezbollah operatives is now believed to occur in Lebanon. The level of paramilitary and military training for Bahrainis, Kuwaitis, Saudis, Yemenis, and other Arab Shi'ites is unclear.

The growing tension between Sunni and Shi'ite both threatens Iran and gives it a potential opportunity in Arab states with significant Shi'ite minorities or majorities. Iran has extensively

exploited such tensions to increase its influence in Iraq and Syria, and its arms transfers and aid efforts have had an important impact on the source of the Syrian civil war.

The Al Quds Force has provided significant transfers of weapons to Shi'ite (and perhaps some Sunni) elements in Iraq. These include the shaped charge components used in some IEDs and the more advanced components used in explosively formed projectiles (EFP), including the weapon assembly, copper slugs, radio links used to activate such devices, and the infrared triggering mechanisms. These devices are very similar to those used in Lebanon, and some seem to operate on the same radio frequencies. Shaped charge weapons first began to appear in Iraq in August 2003, but became a serious threat in 2005.⁹² US experts believe there is definitive evidence key components were made in Iran, and Iran played a major role in expanding the IED threat in Iraq.

On January 11, 2007, the US military in Iraq detained five men accused of providing funds and equipment to Iraqi insurgents. According to US military sources, these men had connections to the Al Quds Force.⁹³ On January 20, 2007, gunmen dressed as US soldiers entered the Provincial Joint Coordination Center in Karbala and killed and wounded several US servicemen. According to some sources, including US military intelligence, the gunmen were members of the Al Quds Force, possibly seeking to gain hostages for bargaining with America's recent detainment of several Al Quds Force officers.⁹⁴ The sophisticated planning and execution of this attack made it unlikely that any Iraqi group was involved in it.⁹⁵

General David H. Petraeus, the commander of US forces in Iraq at the time, stressed the growing role of the Al Quds Force and the IRGC in testimony to Congress in April 2007. He noted that the US had found Al Quds operatives in Iraq and seized computers with hard drives that included a 22-page document that had details on the planning, approval process, and conduct of an attack that killed five US soldiers in Karbala. Petraeus noted,

"They were provided substantial funding, training on Iranian soil, advanced explosive munitions and technologies as well as run-of-the-mill arms and ammunition... in some cases advice and in some cases even a degree of direction... Our sense is that these records were kept so that they could be handed in to whoever it was that is financing them... And again, there's no question... that Iranian financing is taking place through the Al-Quds force of the Iranian Republican Guards Corps."⁹⁶

Cables suggest that Soleimani provided funding and weapons for various Iraqi Shiite insurgent groups, creating a mosaic of militias to bleed US forces on the ground. This role gave the Al Quds force major political as well as security impact because it was often called in by the militias to mediate when disputes between them broke into open warfare.⁹⁷

The Al Quds Force played a less direct role in training and arming Shi'ite extremist militias after US Special Forces quietly put increasing pressure on Al Quds officers supporting the IED campaign in Iraq after 2006, and after Prime Minister Maliki launched the Charge of the Knights offensive against Sadrist and other Shi'ite militias in Baghdad and the South of Iraq in March 2008.⁹⁸

They have been a key part of the Iranian effort in Iraq, however, working with other elements of the IRGC, Iranian diplomats, and Iranian intelligence services like the MOIS. They remain linked to Sadrist and other militias, as well as elements of the Iranian security services and have some ties to officials in both the Prime Minister's office and Shi'ite parties, as well as to the security elements of Iranian sponsored companies and religious facilities. Their role is currently more advisory and passive, but much depends on Iraq's future political evolution and the complex interactions between Iran, Iraq, and Syria.

Experts disagree about the level of Iranian influence and action in Yemen. However, the Al Quds Force is generally believed to be Iran's link to the Houthis and other rebellious groups in Yemen, controlling the training, weapons smuggling, and other assistance. Open sources do not indicate whether Al Quds operatives are on the ground in Yemen, or provide largely off-shore support.

Iran was thought to be behind the recent seizure of a boat in their territorial waters that was carrying large amounts of munitions, and was possibly destined to the Houthis. Among the cargo of ammunition were 10 Chinese-made QM-1M MANPADs, 95 RPG-7s, 10 SA-7 MANPADs, 17,000 blocks of Iranian-made C4, 48 Russian PN-14K night vision goggles, and 10 LH80A laser range finders, made by Iran Electronics Industries according to their placards.⁹⁹

One key problem is the experts believe the Al Quds Force carefully tailors its support to given countries, and does not follow a set pattern of deployment or support. It is often content to play a limited role, training and equipping largely from the outside, providing small active and sleeper cells, and supporting any movement that aids Iran's interests even if they otherwise oppose Iran. The Al Quds Force also seems to encourage individual risk taking even if it can embarrass Iran, knowing that Iran can normally disavow any such efforts if they fail and take advantage of them if they succeed.

The same is true of Iranian and Al Quds links to native Shi'ite groups in Bahrain, Kuwait, Saudi Arabia, and other states. These links are examined in detail in other reports in this series, and the scale of such links is highly controversial. US and other outside experts do believe, however, that Iran is deliberately manipulating such tensions and has played a role in activities like setting up a bomb making facility in Bahrain, and Kuwait detected an active Al Quds intelligence cell in 2010.

It is often difficult, however, to confirm reports of Al Quds activity and separate its role from other elements of the IRGC and branches of Iranian intelligence. Some reports of its role seem dubious and others seem to credit the Al Quds Force without clear evidence that it actually has the lead.

The Al Quds Force is probably responsible for Iran's support of subversive activities in Bahrain. While Tehran is not the cause of Bahrain's domestic upheavals, it has taken advantage of the upheaval engendered by the Arab revolutions. While the Shiites on each side of the Gulf do not always agree, Iran sees the unrest as a chance to weaken the GCC. For example, an Iranian-supported bomb making facility in Bahrain was discovered during the course of this year that had support from Al Quds operatives.

Iran has also used the Al Quds force for assassinations. On October 11, 2011, the Al Quds Force gained attention as a result of its role in planning Iran's alleged assassination plot against the Saudi ambassador to the US, Adel Al-Jubeir.¹⁰⁰ Several members of the Force have been sanctioned by the US for their role in this attempt, and it may reflect a new willingness of Iran to take risks in confronting the US and Arab states.

Finally, Saudi, UAE, and other regional experts feel the Al Quds force is also being used to train dissidents in sabotage, both as part of Shi'ite challenges to Sunni regimes, and possibly to provide a contingency capability to act in conjunction with IRGC covert action or raids. Sabotage training could be a particularly attractive way of conducting unattributable, low cost attacks on Southern Gulf petroleum facilities, utilities and desalination plants, communications, and other critical facilities. Outside experts question the level of such Iranian activity, but some Gulf security experts see this threat as being at least as serious as Iranian asymmetric or other forms of direct attack.

It is unclear whether the Al Quds Force is the driving factor in Iranian efforts outside the region, and in areas like Latin America. There seems to be a tendency to assume that the fact it plays some role makes it the leading element of Iranian action when this may actually come from the IRGC or Iranian intelligence. There is no question, however, that Al Quds operatives work in areas outside the Middle East.

The MISIRI, MOIS, or VEVAK

Iranian intelligence plays a role in Iran's asymmetric warfare efforts, though its role is less understood than that of the IRGC. The Ministry of Intelligence and National Security (MOIS), also known as VEVAK (Vezarat-e Ettela'at va Amniyat-e Keshvar) and VAJA, serves as Iran's secret police and primary civilian intelligence agency. MOIS officers play a key role in monitoring and suppressing political opposition at home, neutralizing political opposition abroad, and running covert networks to import weapons, parts, military technology, and other sensitive, sanctioned items and to export weapons, training, ideology, and various forms of support to proxies. MOIS networks rely on officers embedded in Iranian embassies around the world under official cover, and make use of out-of-embassy platforms such as business front companies and educational and religious foundations for officers under non-official cover.

Since the 2005 election of President Ahmadinejad, the MOIS has struggled with the IRGC for power and influence, and even to preserve its primacy in certain areas of intelligence collection. This reached a peak in 2009 when Ahmadinejad blamed then Minister of Intelligence Hojjatolislam Gholam Hossein Mohseni-Ejei and the MOIS for failing to control Green Movement protests in the aftermath of the presidential elections. Ejei was removed, and Supreme Leader Khamenei called on the IRGC to lead efforts to restore order at home. The MOIS was sidelined further when the Basij merged into the IRGC Ground Forces and created the IRGC Intelligence Organization, led by then Basij commander and long-time Khamenei ally, Hojjatolislam Hossein Taeb. The IRGC-led effort successfully dismantled the Green Movement, and the MOIS emerged with less authority over internal security matters.

The structure of the MOIS helps explain its role at home and abroad. The MOIS is broadly divided into 15 departments, which include general areas of responsibility seen in just about any modern intelligence agency such as counterintelligence, security, and training. Other departments are more tailored to the regime's goals of preserving the Islamic Revolution (e.g., cultural, economic, and political affairs, legal/parliamentary affairs, etc.). Several staff offices fall under each department, ranging from those that are responsible for specific geographic areas such as the Middle East, Europe, and Africa, to others that deal with more specific issues such as the MEK, security investigations, and economic corruption.

There are limited data in unclassified sources on the degree of operational planning, coordination, and execution between the MOIS and various elements of the military, IRGC, and Qods Force. The MOIS, rather than elements of the IRGC, have historically played a critical role in threatening and sometime killing opponents of regime overseas. In the past, it took the lead role in engaging in espionage and intelligence gathering under diplomatic cover as well as civilian support for politically-oriented asymmetric warfare. It was the MOIS that conducted the operation that led to the capture of former Jundallah leader, Abdol Malek Rigi. But the growing role of the IRGC in overseas special operations is evident in what appears to be its oversight of the assassination attempt on the Saudi Ambassador in Washington.

MOIS and IRGC officers work out of separate offices in Iranian embassies, run separate networks in Lebanon and Syria, and run separate procurement and intelligence networks. There are also separate IRGC and MOIS fronts for importing military and nuclear technology dating back in some cases to shell companies established during the Iran-Iraq War that are tied to elements in various ministries and sometimes academic institutions. At the same time, the MOIS and IRGC seem to have some overlapping functions, with both playing a role in managing repression and internal security in Iran, running their own detention facilities and prisons, intimidating, torturing, and even attacking Iranian citizens in Iran and overseas, and influencing Iran's civil, military, and security courts. While it lacks the overall resources and power of the IRGC, the MOIS remains a key instrument of state power at home and overseas that will undoubtedly have a role to play if Iran's nuclear facilities come under attack.

The US State Department 2012 report on human rights noted that,¹⁰¹

Several agencies shared responsibility for law enforcement and maintaining order, including the MOIS, Law Enforcement Forces under the Interior Ministry, and the IRGC, which reported to the supreme leader. The Basij, a volunteer paramilitary group with local organizations in cities and towns across the country, sometimes acted as an auxiliary law enforcement unit subordinate to the IRGC ground forces. Basij units often engaged in crackdowns on political opposition elements without formal guidance or supervision from superiors.

The security forces were not considered fully effective in combating crime, and corruption and impunity were problems. Regular and paramilitary security forces, such as the Basij, committed numerous human rights abuses, including acts of violence against protestors and public demonstrations. There was no transparent mechanism to investigate or punish security force abuses and no reports of government actions to discipline abusers.

...The constitution and penal code require a warrant or subpoena for an arrest and state that an arrested person must be informed of charges within 24 hours. In practice authorities often violated these procedures. Authorities held some detainees, at times incommunicado, for weeks or months without charge or trial, frequently denying them prompt contact with family or timely access to legal representation. In practice there was neither a time limit for detention nor judicial means to determine the legality of the detention. According to the law, the state is obligated to provide indigent defendants with attorneys only for certain types of crimes. The courts set prohibitively high bail, even for lesser crimes, and in many cases courts did not set bail. Authorities often compelled detainees and their families to submit property deeds to post bail. Persons released on bail did not always know how long their property would be retained or when their trials would be held, which effectively silenced them for fear of losing their families' property.

The intelligence arm of the IRGC reportedly conducted arrests during the year, sometimes without a warrant. In addition, security forces executed general warrants to arrest protestors or those perceived as opponents of the government. The use of these general warrants precluded the need for individual warrants.

Incommunicado arrest and detention were common. A February 23 UN Human Rights Council (UNHRC) study on secret detention practices in countering terrorism identified a pattern of incommunicado detention of political prisoners in secret or unofficial detention facilities. The report charged that political prisoners were often held in prolonged, solitary, and incommunicado confinement at ward 209 of Evin Prison

...Several organizations, including the Basij "Cyber Council"; the Cyber Police; and the Cyber Army, which was presumed to operate under the IRGC, were charged with monitoring, identifying, and countering alleged cyber threats against national security. The organization harassed persons who spoke out against human rights violations committed by the government or criticized the government, including by raising sensitive social issues. On March 7, Supreme Leader Khamenei issued an order to create a Supreme Council for Cyber Space, which will reportedly oversee the Telecommunications Research Center and collaborate with the Ministry of Communications to "protect" citizens from online dangers.

The Basij Cyber Council, the Cyber Police, the Cyber Army, and other government cyber organizations monitored Internet communications-- especially on social networking Web sites, such as Facebook, Twitter,

and YouTube--and collected personally identifiable information in connection with peaceful expression of views. Authorities reportedly sometimes stopped arriving citizens at Tehran International Airport, asked them to log into their YouTube and Facebook accounts, and in some cases forced them to delete information officials deemed controversial or threatening. Beginning on January 3, the government required cybercafés to install security cameras and to collect users' personal information.

According to RSF, the government blocked access to thousands of Web sites during the year, and in some cases ISPs redirected users to pro-regime news sites. The government periodically reduced Internet speed to discourage downloading material. Ministry of Information and Communications Technology regulations prohibited households and cybercafés from having high-speed Internet access. During the year and especially during periods prior to the anniversaries of the Islamic Revolution (February 11), the 2009 presidential election (June 12), and Students' Day (December 7), and in anticipation of the February 14 and 15 protests, authorities slowed Internet speed, further limited access to Facebook, Twitter, and Gmail, and blocked opposition Web sites, including that of former president Rafsanjani. On September 23, authorities stated that they had blocked access to Google and Gmail; access was reportedly restored a week later.

The government's cyber monitoring organizations upgraded and used sophisticated filtering technology to respond rapidly to newly published Internet content. NGOs reported that the government attempted to block Internet users' access to technology that would circumvent government content filters. According to Freedom House's Freedom on the Net 2012: A Global Assessment of Internet and Digital Media, content from opposition leaders' Web sites was deleted during the year.

The government prosecuted and punished several bloggers and Web masters for peaceful expression of dissenting views. According to AI, in the run-up to the March 2 legislative elections, authorities arrested at least 12 journalists and social media activists, while the BBC Persian service confirmed that the government was continuing to pressure its employees by taking family members of its London-based staff hostage. For example, on January 20, police arrested Mohammad Soleimani-Nia, the founder of social media Web site u24 and developer of several domestic NGO Web sites. He was reportedly imprisoned without charge, pressured to help develop the national Intranet, and released on May 22 on 40 million tomans (\$32,630) bail. RSF reported police rearrested Soleimani-Nia May 28 and released him August 13 on 500 million tomans (\$407,830) bail. On January 17, MOIS officials reportedly arrested Tabriz News Web site editor Peyman Pakmehr on national security charges, transferred him to Evin Prison, and released him on January 24 on 220 million tomans (\$179,450) bail.

There were no updates in the previous year's case of journalist and blogger Siamak Ghaderi, who reportedly remained imprisoned at year's end after being sentenced in January 2011 to four years in prison on charges of "propaganda against the regime" for participating in and reporting on public gatherings.

...Endowed religious charitable foundations, or "bonyads," accounted for a large portion of the country's economy that some experts estimated at approximately 30 percent. The tax-exempt organizations, defined under law as charities, were run by government insiders, including members of the military and the clergy. Members of the political opposition and international corruption watchdog organizations frequently accused bonyads of corruption. Bonyads received benefits from the government but were not required to have their budgets publicly approved.

All government officials, including cabinet ministers and members of the Guardian Council, Expediency Council, and Assembly of Experts, were required to submit annual financial statements to the state inspectorate. There was no information available regarding whether these officials obeyed the law or whether the financial statements were publicly accessible.

Numerous government agencies existed to fight corruption, including the Anticorruption Headquarters, Anticorruption Task Force, Committee to Fight Economic Corruption, and General Inspection Organization (GIO). Most of these organizations were government-run and public information regarding their specific mandates, their collaboration with civil society, and whether they were sufficiently resourced, was unavailable at year's end.

Some senior judicial officials acknowledged widespread corruption, while others denied it. On April 29, judiciary chief Sadeq Larijani stated, "A hidden level of corruption exists, which in my opinion is much more important than the apparent level of corruption." On September 3, GIO head Mostafa Pourmohammadi stated,

“I do not agree there is corruption in the government. I do not agree that corruption is rampant in the government.”

The IRGC operated numerous front companies and subsidiaries that engaged in illicit trade and business activities in the telecommunications, construction, mining, and construction sectors. The IRGC's construction subsidiary, Khatam ol-Anbiya, reportedly benefited from corrupt ties to the petroleum sector. For example, on August 4, the deputy oil minister for planning and hydrocarbon resources announced, “According to a directive from the oil minister (Rostam Qassemi, the former chief of Khatam ol-Anbiya), the awarding of joint oil and gas field development plans will be done without the tendering process.” On August 22, Iranian exile media outlet Radio Zamaneh reported that Khatam ol-Anbiya had been awarded a noncompetitive gas development deal. According to Radio Zamaneh, the managing director of the state-run Iranian Central Oil Fields Company stated that the contract had been awarded to Khatam ol-Anbiya without a tender following an order by the minister of oil to “skip the usual protocols” for signing oil and gas contracts.

Unfortunately, any assessment of the role that the MOIS/VEVAK and other intelligence elements play outside Iran in competing with the US and in operating in other countries requires access to sensitive intelligence data. It is clear that Iran has steadily built up cells and networks, and expanded the role of intelligence in its embassies, NGOs, Iranian owned “cover” businesses, Iranian overseas workers and groups, religious organizations and charities, and education efforts.

It is also clear that some of the supposed Iranian academic groups, journalists, analytics, religious figures, and delegations sent to other countries and involved in track II diplomacy are active intelligence agents. This includes Iranians who act as if they are critics of the regime. This does not mean that the vast majority of Iranians in the opposition or who travel overseas are intelligence operatives, but it does mean that legitimate critics face serious problems with covert infiltration and intelligence operatives, that the regime routinely uses such covers, and Iranians who are too frank or critical can face punishment on their return to Iran. Similarly, Iranians who are citizens of other countries – particularly those with relative still in Iran – face the threat of pressure or intimidation by such operatives.¹⁰²

It is not clear how these are structured, how well they penetrate into the Arab Gulf and regional states, or how deeply they reach into the US, Europe, Asia, and other areas. One must also be extremely careful of references to the IRGC and Al Quds force; in at least some cases, the actual operative is almost certainly Iranian intelligence.

Figure IV.7: The Iranian Al Quds Force

- Comprised of 5,000 - 15,000 members of the IRGC (Increased size of force in 2007)
- Equivalent of one Special Forces division, plus additional smaller units
- Special priority in terms of training and equipment
- Plays a major role in giving Iran the ability to conduct unconventional warfare overseas using various foreign movements as proxies
- Control many of Iran's training camps for unconventional warfare, extremists, and guerillas
- Has offices or "sections" in many Iranian embassies throughout the world
- Conduit for Iranian aid to Palestinian terrorist groups such as Hamas, Lebanese Hezbollah, Iraq-based militants, and Taliban fighters in Afghanistan.
- Primary pipeline for Iranian provision of lethal support to Iraqi insurgents, including weapons, training, funding, and guidance.
- Al Quds Force continues to provide Iraqi and Afghani militants with:
 - Specialized training,
 - Funding,
 - Iranian-produced advanced rockets,
 - Sniper rifles,
 - automatic weapons,
 - Mortars,
 - Improvised Explosive Devices (IEDs),
 - And explosively formed projectiles with a higher lethality rate than other types of IEDs
- Potentially involved with reported Iranian support for the Taliban since 2006, including small arms and associated ammunition, rocket propelled grenades, mortar rounds, 107mm rockets, plastic explosives, and possibly man-portable air defense systems (MANPADs).
- Israeli defense experts continue to state that they believe the IRGC and Al Quds Force not only played a major role in training and equipping Hezbollah, but may have assisted it during the Israeli-Hezbollah War in 2006, and played a major role in the Hezbollah anti-ship missile attack on an Israeli Navy Sa'ar-class missile patrol boat.
- Widely believed to have been behind the plot to assassinate Saudi Arabia's ambassador to the US, Adel al-Jubeir in 2011.

Iran's Capabilities for Asymmetric Warfare

Iran has compensated for the sanctions on its arms imports since 1980, its massive equipment losses in the final stages of the Iran-Iraq war in 1988, the vastly superior arms imports of its Southern Gulf neighbors, and the even larger conventional air, naval, and missile superiority of the US by building up a mix of asymmetric naval, missile, and air forces that give it the ability to threaten shipping traffic through the Gulf, the security of key petroleum and infrastructure facilities, and attack its neighbors and Israeli cities and area targets.

Figure IV.8 shows Iran has a wide range of mine warfare, anti-ship missile, and asymmetric warfare platforms, as well as submersible and three Russian-made submarines and a growing number of small submersibles. Iran also has large Naval Guards forces. **Figure IV.9** provides a rough picture of the balance of forces near the Strait of Hormuz and shows Iran has enough missile and sea power to present a serious threat to shipping in the Gulf, raid coastal and offshore facilities, and is expanding its capability to operate in the Gulf of Oman and the Arabian Sea.

Coupled to Iran's growing long-range anti-ship missile capability and the high density of Iranian surface-to-surface missile capability, this makes Iran the most serious single regional threat to the flow of petroleum exports through the IOR. While Iran could not defeat the US and Arab states in a major conflict, it can potentially close the Strait of Hormuz for at least several days and could conduct a low-level war of attrition in the Gulf for an extended period, raising the insurance premium for maritime traffic to wartime levels, creating a climate of uncertainty regarding Gulf oil exports, and raising world petroleum prices.

Even today a clash in the Gulf could escalate in ways that could have a significant impact on Gulf oil exports. Iran has three *Kilo*-class submarines bought from Russia in the 1990s, and is building two small submarines on its own. Its *Kilo*-class submarines can fire long-range homing torpedoes and lay smart and conventional mines. It acquired its first *Ghadir*-class 120-150-ton midget submarine in 2007 and now has up to 17. It also has at least one 90-ton midget submarine, and eight small submersibles for inserting Special Forces and minelaying.

Iran's three Type 877EKM *Kilo*-class submarines and other submarines offset some of the weaknesses of its major surface forces. The *Kilo* is a relatively modern and quiet submarine that first became operational in 1980. Iran has completed a refit of one of its *Kilos*, and will likely begin modernizing the second if it believes the submarine will not be needed in the near future.

Iran does, however, have serious problems in maintaining its submarines much less refit them, and it has not provided realistic training. Its submarines rarely submerge in training or exercises, and many of Iran's drill claims are little more than propaganda. This leads some experts to feel that they would only pose a relatively limited and short-lived threat if they were actually deployed and used in combat.

This does not mean they can be ignored. Each *Kilo* has six 530-mm torpedo tubes, including two wire-guided torpedo tubes. Only one torpedo can be wire guided at a time. The *Kilo* can carry a mix of 18 homing and wire-guided torpedoes or 24 mines. Russian torpedoes have guidance systems including active sonar homing, passive homing, and wire guidance, but experts believe Iran may only have shorter range, wake-homing torpedoes. Some reports indicate that Iran bought over 1,000 modern Soviet mines along with the *Kilos* and that the mines were equipped with modern magnetic, acoustic, and pressure sensors.

Iran's ability to use its submarines to deliver mines and fire wake-homing torpedoes at ranges of up to 4,000-6,000 meters gives it a potential capability to strike in ways that are difficult to detect or deter. Its submarines can fire long-range homing torpedoes that can be used against tanker-sized targets and to attack slow-moving combat ships that are not on alert and/or lack sonars and countermeasures.

Iran currently operates between 10 and 20 *Ghadir* midget submarines, one *Nahang* midget submarine, and approximately eight submerged diver delivery craft. Some reports indicate Iran has received the Hoot supercavitating rocket torpedo and modified some of its submarines to fire

this high-speed torpedo.¹⁰³ Iran also is developing the Fateh, Besat, and/or Qaaem classes – all three have been publicly discussed as “in development” by various Iranian naval commanders, but it is not expected that Iran will actually develop all three – as medium weight submarines with Kilo-class capabilities for green-water operations.¹⁰⁴

Iranian midget submarines may provide a more serious threat within the Gulf than its Kilos. The Ghadirs and other Iranian midget submarines do drill more regularly than its Kilos and submerge more often in exercises. Rumors of serious losses in exercises are not confirmed by experts. Iranian midget submarines possess both torpedo-firing and mine-laying capabilities, and their small size may enable them to operate more effectively in the Strait or the Gulf. However, the capabilities of these boats are still unknown; much depends on their sensors and ability to hide from dedicated ASW platforms. If they are unable to mask propulsion noises, even the cluttered environment of the Gulf will not protect them from Western or even Gulf ASW assets.

The Iranian Navy still has three British supplied Vosper Mark 5 class corvettes it first received in 1971 and calls the *Alvand* class. These are 1,540-ton ships that have been refitted with C-802 anti-ship missiles. Iran also has two US-supplied 1,130-ton *Bayandor*-class frigates; one of was being refitted but may have reentered service in the spring of 2013. These date back to 1964, but have been refitted with C-802 anti-ship missiles and a 76mm gun. Iran also has a small, US-supplied 580 ton corvette (missile patrol boat) refitted with C-802 missiles.

There also seems to be agreement that Iran has 14 active 275-ton *Kaman* class coastal missile patrol boats armed which date back to the late 1970s and early 1980s, but have been refitted with two to four C-802 missiles, and three of which have been heavily updated (Sometimes called the *Sina* class).

The naval branch of the IRGC -- or IRGCN -- is organized to present asymmetric threats that include capabilities that can support a battle of attrition, and focused, limited clashes throughout the Gulf that would not cripple Iran's own sea lines of communication (SLOCs) or necessarily provoke major US reprisals

In 2013, the IRGCN had 10 171-ton Chinese-built *Houdong*-class missile patrol craft with four C-802s each, which were delivered in the mid-1990s -- and three support ships. It had large numbers of additional coastal and inshore patrol craft. Some estimates credited the IRGCN with 5 *China Cats*, 10 *Thondor* with two twin C-802 launchers, 25 *Peykaap II* with two single C-701 launchers, 15 *Peykaap I* fast attack boats potentially armed with twin torpedo tubes, 10 *Tir* class fast patrol boats with twin torpedo tubes and a machine gun, 10 *Pashe* fast patrol boats with twin 23mm ZSU-23 cannon and search radar, and roughly 20 *Ghaem* patrol boats with small arms and an extended duration deployment capability.

Jane's estimates that the IRGCN had 37 coastal patrol boats – 17 *Peykaap I*, 10 *Pashe*, and 10 *Ghaem* – along with 150 inshore patrol craft – 30 *Murce* (one MLR system and machine gun), 100 *Ashura I* (small vessel with one machine gun, center space for a mine or rocket launcher, and small arms), and 20 *Boghammar* (one machine gun and MLR system normally, but wide range of customized units are now believed to be in use).¹⁰⁵

The Iranian Navy has adapted two *Hejaz* class LSTs for minelaying. It has two *Riazi*-class mine countermeasures boats, one *Shahroch* class minesweeper as a training ship in the Caspian, and two aging US-supplied MS-292-class minesweepers. Iran can, however, use virtually any surface ship for minelaying, including the dhows that cross the Gulf as trading vessels.

Iran can use its regular navy, naval guards, and any civilian ship to lay a variety of mines. It has invested in both its own mine development and Chinese mines, with an estimated stockpile of over 3,000 devices.¹⁰⁶ Its older mines are effective systems and at some \$6,000 a mine, are easy to disperse in large numbers with potentially devastating effective consequences for far most costly combat and commercial ships. According to various experts it has also acquired, reverse engineered, developed, and improved a range of “smart mines,” including bottom mines. It is preparing to lay them on both sides of the Strait, creating safe passages close to Iran’s shoreline through which its own and neutral (i.e. any Gulf state Iran chooses not to antagonize) tankers could sail.

The potential effectiveness of these mines was driven home by the September 2012 IMCMEX. In many ways, this exercise was a model of the kind of cooperation needed in the Gulf, and one that illustrated that a major exercise can be held at low cost if each participating nation pays its own way. The exercise was held during September 16-27 2012. It involved 33 countries, 2,730 personnel, 24 ships from six countries, 116 divers from eight countries, and 12 unmanned underwater vehicles from six countries. It used integrated C2, and tested Afloat Forward Staging Bases from three different countries deployed over an area of some 1,000 NM.

The course of the exercise is something of a case study in what needs to be done to improve the integration and effectiveness of US and GCC forces. It involved three days of analysis of the threat, planning, and technical analysis with officials, military, and contractors from the GCC, NATO countries and Asian countries. There was then a seven day at-sea phase – sometimes involving the first multilateral exercise for a given country. Seventeen trial MH-53 minesweeping (MSW) helicopter missions were flown, and 91 mine countermeasure (MCM) missions under both day and night conditions were simulated. An integrated situational awareness was preserved through the CENTRIXS system, and for the first time, a single Mine Warfare Commander operated the exercise.

While the results of this exercise have not been published, reports¹⁰⁷ suggest that the allied minesweeping forces from some 30 countries performed well in terms of coordination and gained a great deal of experience, but encountered serious problems because of different national caveats over how their forces could be used and commanded, and initial problems in working together because of a lack of prior experience. The iron law of war that no force can really do in combat what it does not do in practice seems to have been validated yet again.

There also were significant problems in removing the simulated mines from the seabed. A PBS report quotes a consultant and former Navy officer in claiming that the participants found only half their targets. The US Navy disputes the use of “percent of mines found” as a suitable metric, with Navy spokesmen highlighting the efficient way navies from 30 nations cooperated in the exercise. They also point out that it was both an experiment and a learning process, and that in the real world the US would have mapped the bottom of many key areas to enable it to locate any sudden appearance of a new mine, and US doctrine calls for constant surveillance of suspect ships and destroying them the moment they begin mine laying activity.

This result emphasizes the difficulty of tracking and destroying mines even with a large task force under peacetime conditions. Mine warfare could give a significant edge to the strategic aggressor, and the US has not yet learned how to negate Iran’s lead. This weakness further underpins the logic of retaliation and escalation, as any American failure to counter Iranian mines in the event of war would force the US to respond with other strikes.

While cooperation will undoubtedly be critical in counter-mine combat, as will the willingness to act decisively the moment Iranian minelaying begins, practical success will be judged by the protection of tankers, other commercial vessels, and combat ships. The key measure of effectiveness will be the number of ships that are hit by mines. Moreover, even the threat of mining could have a major impact on shipping and the cost of imports and energy exports.

More Gulf, British, and French mine hunting and sweeping resources are needed. The US Navy has underfunded mine warfare efforts consistently in the past and has only begun revamping its mine detection capabilities. At present, the US Navy can only deploy eight minesweepers in the Gulf, and only four are currently assigned full time. Helicopter minesweeping using MH-53 helicopters and towed sonar sleds has not proved as effective as previously expected.

The US does, however, have help from the British and French navies, and Saudi Arabia and the UAE can deploy modern minesweepers. The US is adding crews to allow its minesweepers in the Gulf to deploy longer with less crew strain, and plans to introduce the Littoral Combat Ship's mine-warfare package in 2014.¹⁰⁸ The US is also shifting from hunting to mapping the bottom of the Gulf to detect any change in the array of objects on the bottom. It is deploying new unmanned or robotic mine hunting and killing systems. The US expects to deploy new Mark 18 anti-mine, torpedo-shaped underwater vehicles in January 2013. It is introducing other unmanned submersibles, including the Sea Fox mine neutralization system, which is a relatively cheap, expendable system that can detonate a mine directly.¹⁰⁹

This complex mix of shifts in the forces of Iran's Navy and Naval Guards explains why Iranian naval doctrine and exercises now emphasize asymmetric tactics. Iran emphasizes a mix of smaller systems that can target either expensive, vulnerable merchant traffic – essentially an improved version of the 1984-1988 Tanker War – or conventional US naval vessels attempting to operate in the Strait of Hormuz or the Gulf.

Iran also recognizes the vulnerabilities created by operating with two different navies – the IRIN and IRGCN occasionally traded fire during the Iran-Iraq War. According to sources like *Jane's Defense Weekly*, the regular and IRGC fleets have divided geographic responsibility, with the latter taking control of the Gulf and Strait of Hormuz, and the former responsible for everything else. This permits the IRIN to deploy its conventional forces in the open water – which they are designed for – while giving the IRGCN control in the Gulf.

The IRGCN now operates four naval defense zones in the Gulf, and its commander – Mohammad Ali Jafari – announced a fifth zone at the port of Bandar Lengeh in November 2012. Jafari stated that, “The fifth zone of the Guard's naval force is one of the naval defense chains which is in particular responsible for the defense of the Iranian islands in the Gulf.” This reflects both the vulnerability of the surface Navy and a growing IRGCN emphasis on “clustering” small groups of forces that can be easily dispersed throughout the Gulf and used with limited command and control and coordination.

Iran learned in 1987-1988, and in years of exercises that followed, that it cannot concentrate large numbers of small forces for “swarming” and exercise effective command and control. It must be able to disperse them as much as possible, and may have to keep larger conventional naval surface forces in port or outside any combat action to avoid having them destroyed. Recent accounts suggest Iran has encountered difficulties coordinating more than ten boats at a time. These packs would be capable of targeting tankers or isolated military vessels, or harassing multiple warships in hit-and-run strikes. By focusing on smaller fleets, Iran is able both to preserve its forces for a

war of attrition and retain the command and control necessary to target individual ships, potentially avoiding the random strikes that led the Tanker War to escalate.

Since the end of the Iran-Iraq War, Iran has attempted to compensate for the weaknesses of its surface fleet by obtaining new anti-ship missiles and missile patrol craft from China, and developing its own long-range anti-ship missiles and a ballistic missile with anti-ship capabilities. It acquired and then cloned midget submarines from North Korea, and bought three *Kilo*-class submarines from Russia. It bought and reverse-engineered more modern “smart” mines, and also purchased wake-homing torpedoes.

Iran has simultaneously expanded the capabilities of the naval branch of the IRGC, developed its fast attack craft, and upgraded some of its older surface ships. Iran’s exercises have also included a growing number of joint and combined arms exercises with the land forces and the air force – although such jointness is limited and Iran still has problems in coordinating the elements of its individual services.

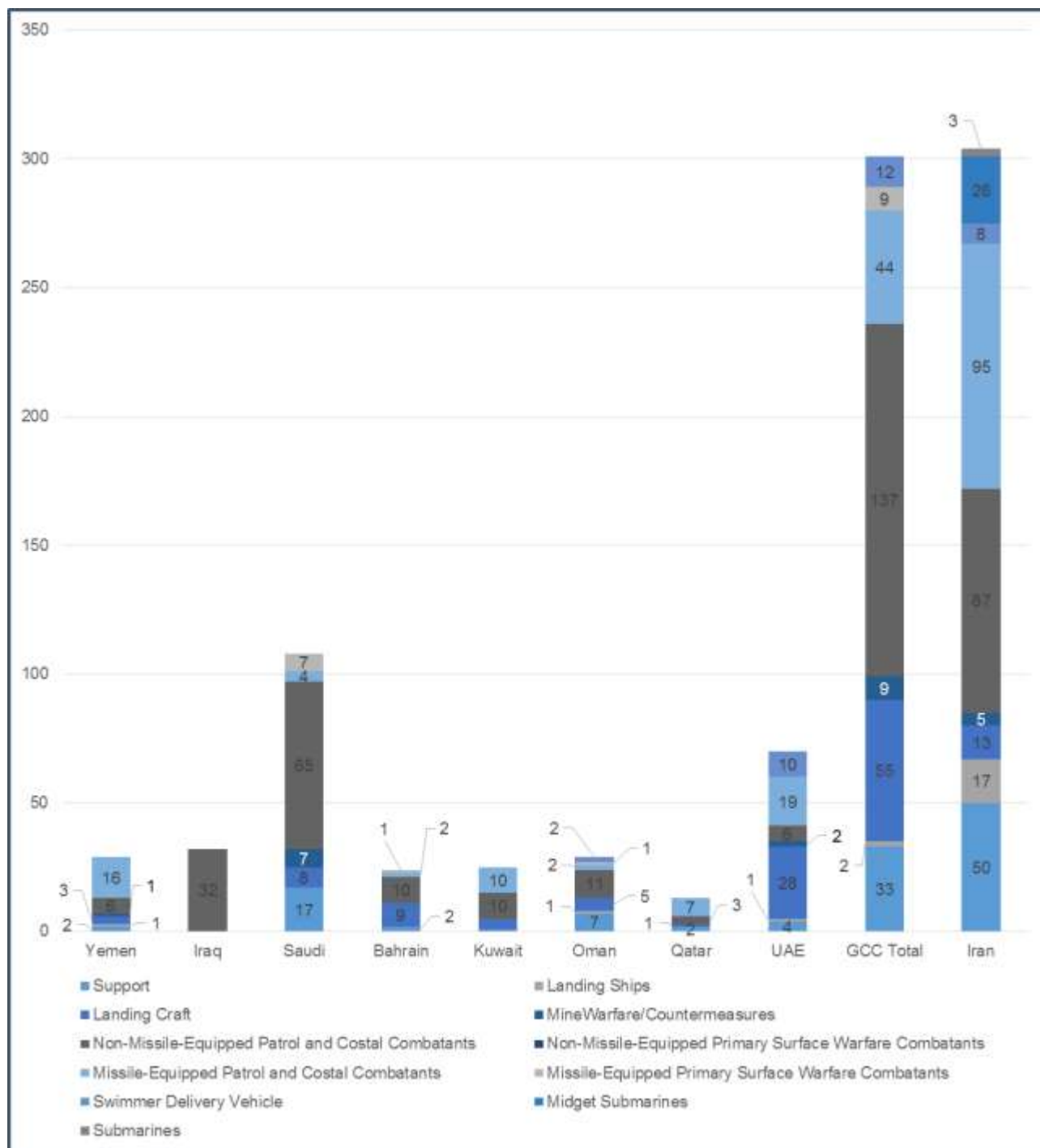
Iran has improved its ports and strengthened its air defenses, while obtaining some logistic and technical support from nations like India and Pakistan. It has attempted to participate in joint exercises, joining the Indian Navy and Pakistani Navy for small-scale training. The IRIN has also deployed off the coast of Africa for anti-piracy operations, giving the navy experience with extended blue water deployments.¹¹⁰

**Figure IV.8: Iran's Strength in Naval Forces Suited to Asymmetric Warfare-
Part One**

	Yemen	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	GCC Total	Iran
Support	2		17	2	1	7	2	4	33	50
Landing Ships	1					1		1	2	17
Landing Craft	3		8	9	4	5	1	28	55	13
MineWarfare/Countermeasures	1		7					2	9	5
Non-Missile-Equipped Patrol and Costal Combatants	6	32	65	10	10	11	3	6	137	87
Non-Missile-Equipped Primary Surface Warfare Combatants									0	
Missile-Equipped Patrol and Costal Combatants	16		4	2	10	2	7	19	44	95
Missile-Equipped Primary Surface Warfare Combatants			7	1		1			9	
Swimmer Delivery Vehicle						2		10	12	8
Midget Submarines									0	26
Submarines									0	3

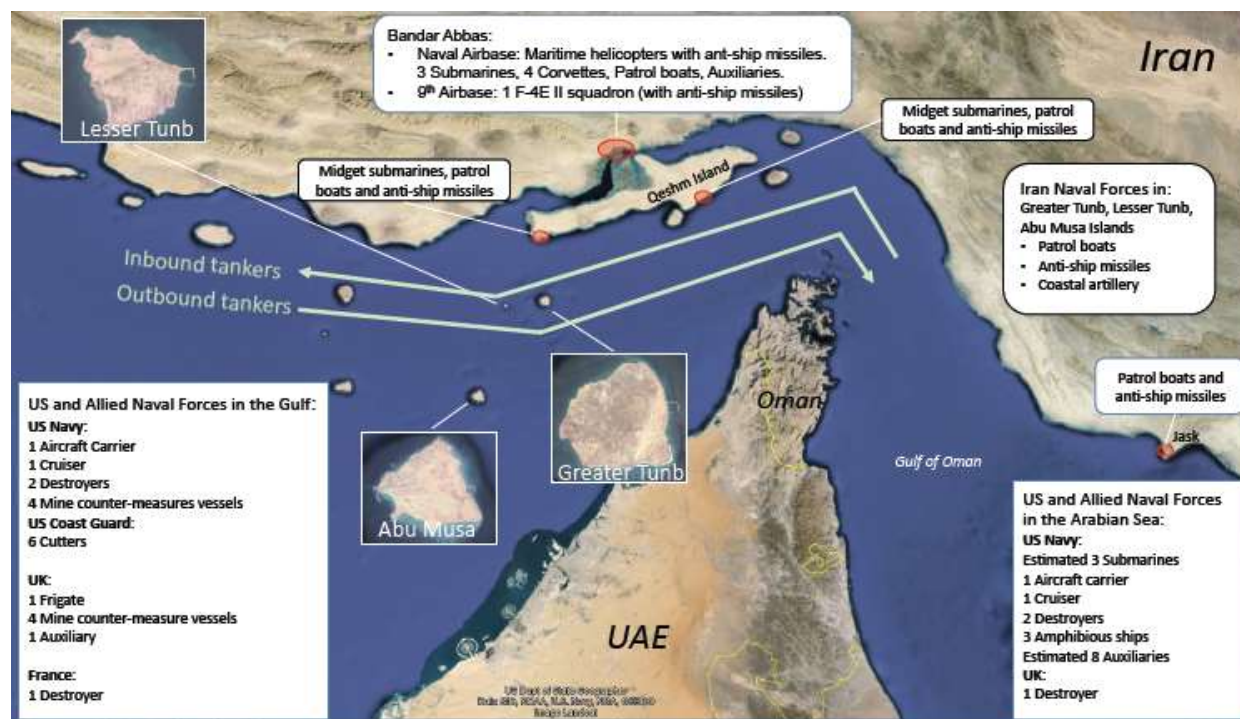
Source: Adapted from the IISS, *Military Balance*, 2014; and the Jane's Sentinel series

Figure IV.8: Iran's Strength in Naval Forces Suited to Asymmetric Warfare- Part Two



Source: Adapted from the IISS, *Military Balance*, 2014; and the Jane's Sentinel series

Figure IV.9: Force Balance in the Strait of Hormuz



Source: Dr. Abdullah Toukan and the IISS, *Military Balance*, 2012.

Iran's Missile Forces

As **Figure IV.10** shows, Iran's existing missile forces give it the capability to attack targets in the Gulf and near its border with conventionally armed long-range missiles and rockets, and Iran can attack targets in Israel, throughout the region, and beyond with its longest-range ballistic missiles. However, the short-term risks posed by Iran's current conventionally armed rockets and missiles should not be exaggerated. Most are relatively short-range systems, and have limited accuracy and lethality. They can be used as artillery, limited substitutes for air power, or as weapons of terror or intimidation. They are not accurate enough to play a substantial role in a conventional war, despite Iran's efforts to upgrade them.

In the near-term, Iran would either be limited to the tactical use of shorter range systems as artillery against area targets, to volleys of shorter ranged missiles and rockets against nearby area targets (tactics it has not yet seriously practiced), or to longer-range missile strikes designed more for psychological or "terror" purposes than military combat. The seriousness of even these threats would depend in part on Iran's ability to launch rockets and missiles in salvos, and in "stacked threats" of different types that complicated the use of missile defenses and suppressive strikes.

The limited lethality of Iran's current warheads, the severe limits to their accuracy, and the uncertain reliability of Iran's longer-range systems all combine to limit the impact of such strikes to almost random hits somewhere in a large area with casualties that would most probably be limited to those resulting from a single 1,000 pound unguided bomb.

Nevertheless, Iran could still use conventionally or chemically armed missiles and long-range rockets as terror weapons, striking against large area targets like cities. It might escalate to the use of such systems because of a conventional war in the Gulf, in reaction to any military threat to its ruling regime, as a response to covert action against the state, or as a method of resolving domestic fissures.

Moreover, Iran's missile and rocket forces may well become far more effective even if Iran does not get nuclear weapons. Today's missile designs would be more effective if they could be equipped with conventional or chemical cluster munitions. Although they would still be limited by range-payload limits, "fusing" issues, and a lack of accuracy, substantial volley against area targets would cause more terror than ones capable of hitting and destroying key point target.

If Iran is to make a major advance in lethality using missiles and rockets without nuclear weapons, it would have to make advances in two other areas: precision guidance and terminal homing and biological weapons. Iran has already said it is seeking to provide its missiles and rockets with precision guidance and terminal homing warheads and with countermeasures to ballistic missile defenses. It has also claimed to have shown it has a near precision strike capability, although satellite photos of the target area indicate it simulated missile hits by using explosive devices at the scene.

A precision strike capability would radically alter the lethality of Iran's longer-range systems against high value military targets and civil targets like key oil product facilities and desalination plants - creating the equivalent of "weapons of mass effectiveness." There is no evidence as yet that Iran has such capabilities and no clear indicators that it can acquire them in the near future. Iran has, however, made claims that imply it already has such accuracy, and a number of Israel experts believe it is developing such systems.

Deploying chemical or biological warheads would give Iranian missile more lethality, but it is easy to exaggerate the lethality of chemical missile warhead under real world operational conditions. Dispersing an agent effectively is a major challenge, and chemical cluster weapons present serious timing and height of burst problems. It might well take a substantial volley to have a major effect, and such a strike could remove all limits to a conflict and might still produce limited damage to critical targets.

Biological weapons can theoretically be as - or more - lethal than fission weapons and Iran has all of the needed technology. Effective dispersal is, however, even more difficult than with chemical weapons, and developing and testing such a warhead presents both serious technical problems and the problem that the threat is not credible until capability is proven, but the very threat could trigger massive preventive strikes and use would eliminate any barriers to counterstrikes with nuclear weapons.

The much more challenging prospect of combined Iranian missile and nuclear threat poses risks that already affect every aspect of US, Arab, Israeli and other military competition with Iran. Iran has made enough progress towards a nuclear weapons capability so that there is a very real prospect that Iran will acquire nuclear weapons and arm its missiles and aircraft with such weapons.

The US and its allies are pressing hard to end this threat through negotiations. It is also possible that such a threat could be deterred or contained by military means. The practical problem, however, is that a nuclear armed Iran would have far more negotiating leverage over its neighbors, and had a far more powerful deterrent to any US or allied escalation in response to Iran's use of its forces for asymmetric warfare.

A nuclear-armed Iran could destroy any military target or city in the region, and pose an "existential" threat to many states. A regional war could have a far more radical and lasting impact on the global economy, which gets some 20% of the world's oil supply through the Gulf, and while few experts feel Iran's leaders would act irrationally or without regard to the risks, the history of war and diplomacy is often the history of mistakes, miscalculations, and unintended conflicts. One needs to remember for all of the talk of a stable pattern of mutual assured destruction during the Cold War, the US went from no more than six nuclear weapons at the end of 1945 to a peak of over 31,000 in 1967, while the Soviet Union went from none before 1949 to a peak of nearly 41,000 in 1987.

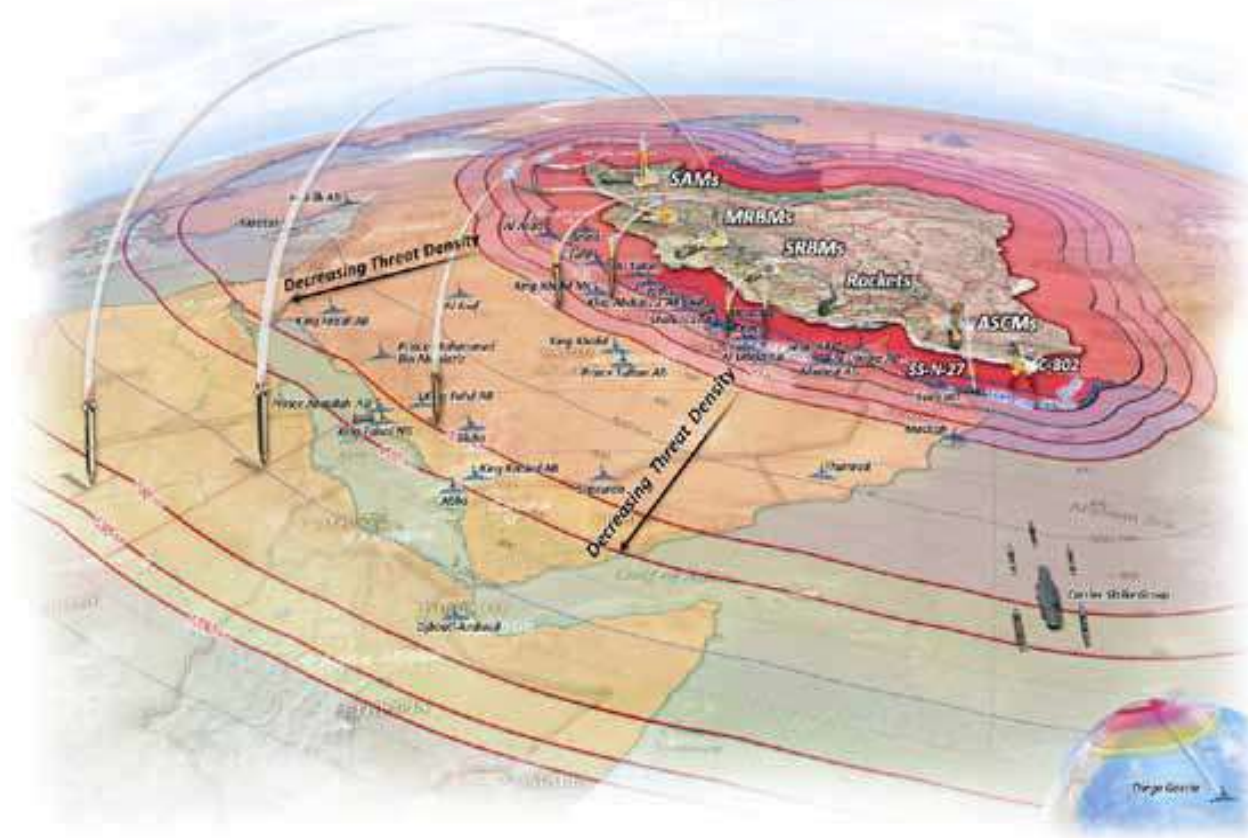
The very risk of nuclear-armed missiles becoming an Iranian reality has already led Israel to increase the range of its nuclear-armed missiles to cover all targets in Iran. It has triggered the start of a nuclear arms race in the region.

It has already led the US and Israel to research and develop missile defenses, and the US to work with friendly Arab states to purchase new missile defenses. It has also led to steady increase in the long-range strike capabilities of rival states. Saudi Arabia first acquired long-range conventionally armed ballistic missiles because of the threat from Iraq but has retained them because of the threat from Iran.

The US and Gulf Arab countries have also increased the strike capabilities of their air forces and, the US has carried out exercises that demonstrate it could make extensive use of conventionally armed cruise missiles. It has also offered friendly states in the region some form of "extended deterrence" in the form of US attacks on Iran if Iran should strike - although it has never clarified

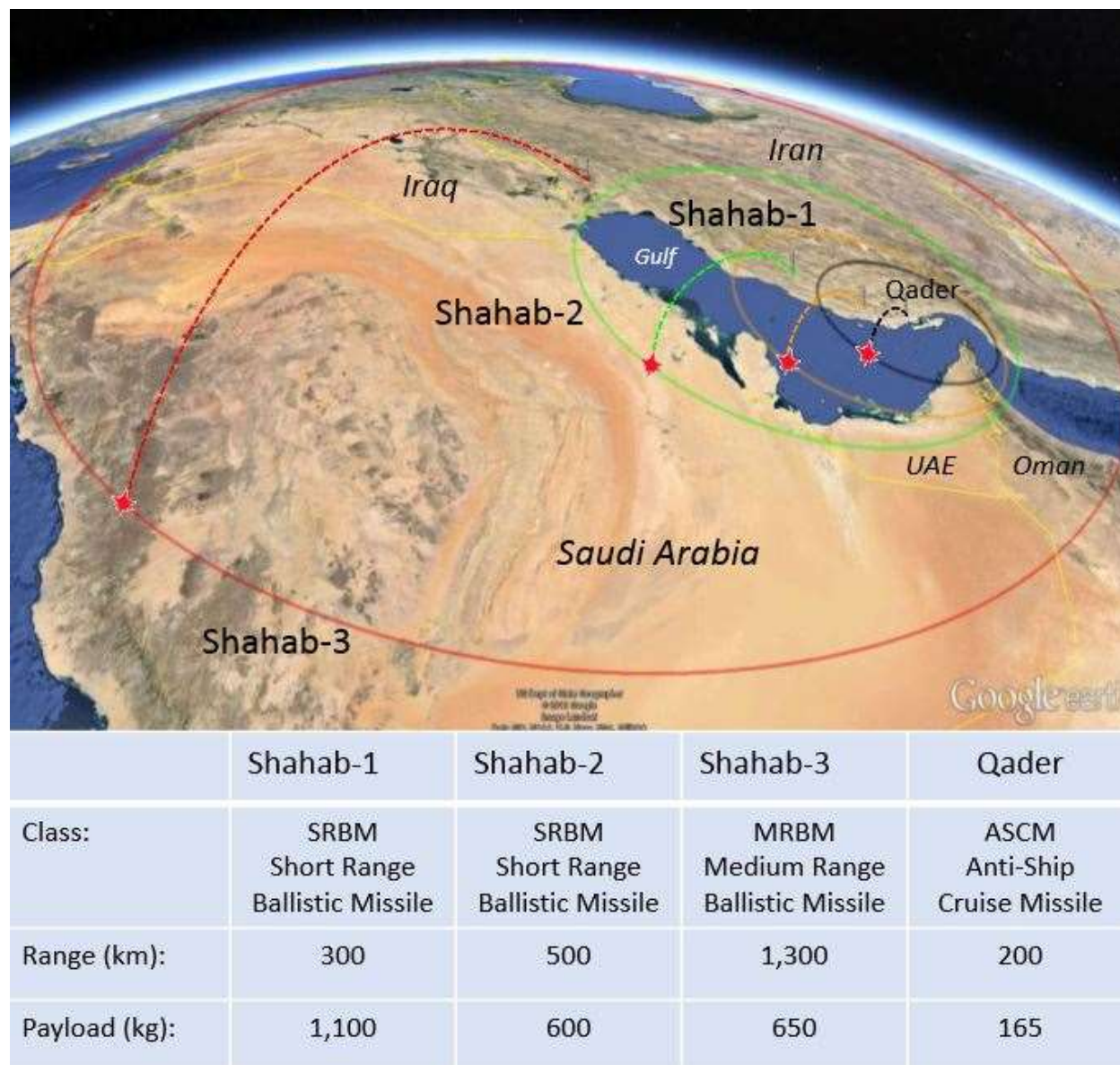
whether this would only apply to Iranian nuclear strikes, and would involve US conventional or nuclear-armed systems.

Figure IV.10: Iran's High Density of Surface-to-Surface Missiles and Rockets
Part One: The Density of the Iran Missile Threat



Source: Adapted from Mark Gunzinger and Christopher Dougherty, *Outside-In Operating from Range to Defeat Iran's Anti-Access and Area-Denial Threats*, CBSA, Washington DC, 2011..

Figure IV.10: Iran's High Density of Surface-to-Surface Missiles and Rockets
Part Two: The Range of Key Iranian Missiles



Source: Dr. Abdullah Toukan, March 16, 2014.

Iraq

Iraq's security and stability also play a key role in determining the level of world petroleum exports. Iraq may be able to double its level of exports over the next 5 to 10 years, but only if it can achieve suitable internal stability, and limit the impact of the threats or spillover of violence from its neighbors. Iraq also plays key role in limiting or enhancing Iran's influence in the region and Iran's future ability to deploy land forces against Kuwait and /Saudi Arabia.

At present, however, Iraq is a state that lacks effective governance and economic policies, and is extremely poor by Gulf standards. It is deeply divided along sectarian (Sunnis vs. Shi'ite vs. minority) and ethnic (Arab vs. Kurd) lines, and has regional divisions between its wealthier, oil-rich province in the south and the rest of the country.

A combination of a steadily more authoritarian and pro-Arab Shi'ite regime under Prime Minister Maliki and the resurgence of Al Qaida in Iraq (AQI/ISIS) because of Sunni anger at the central government and the spillover of the violence and Sunni Jihadist forces in the Syrian civil war has brought western Iraq back to a state of civil war, and threatens the stability of the country. In addition, the US and Iran actively compete for influence, and Iran is seeking to include Iraq a zone of influence that includes Syria and Lebanon as well. This makes Iraq a high risk state in spite of its potential oil wealth.

The political, economic, and military history that has led to Iraq's current problems and the trends that may shape its future are analyzed in depth in another Burke Chair report – Iraq in Crisis – which is available at the Burke Chair section of the CSIS web site. Even a brief summary of some key trends do, however, illustrate the scale of Iraq's challenges:

- The World Bank ranks Iraq as having extremely low quality of governance. It ranks 178th in the world in accountability, 201st in political stability and violence, 182nd in government effectiveness, 205th in the quality of rule of law, 189th in the quality of government regulation, and 193rd in the control of corruption.¹¹¹
- Iraq ranks only 171st in the Transparency International Corruptions Perception Index.¹¹²
- Iraq ranks 151st in the World Bank ease of doing business ranking.¹¹³ It has major problems in starting a business, registering property, getting credit, protecting investors, trading across borders, enforcing contracts, and resolving insolvency.¹¹⁴
- Iraq ranks 131st on the UN Human Development Index. The UAE ranks 41st. Saudi Arabia ranks 57th.¹¹⁵
- In spite of its high oil revenues, Iraq's per capita income (\$7,000) only ranks 141th in the world, by far the lowest of any Gulf state.¹¹⁶
- Although Iraq's birthrate has dropped, it is still under acute demographic pressure. The US Census Bureau estimates that it had a population of 5.2 million in 1950, 13.2 million in 1980, 22.7 million in 2000, and 31.9 million in 2013. It estimates that it will have a population of 40.4 million in 2025 and 56.3 million in 2050.¹¹⁷
- The rising violence in Iraq in 2013, and the AQI takeover of Ramadi and Fallujah in December has raised it to the level of an extremely high risk state. It will remain at this level until it can create a structure of governance, and uses of its security forces, that unite Sunni and Shiite and Arab and Kurd, rather than divide them, and will be a high risk state until it can develop and implement credible plans for national economic development that serve its population rather than develop its petroleum resources and increase its petroleum export income.

Iraq's Security and its Military Forces

Unlike Iran, Iraq's military weakness is a critical problem in dealing with its internal threats; in defending against its neighbors, and in bringing strategic stability to the Subregion. As **Figure IV.11** shows, Iraq lost most of its conventional warfighting strength in the US invasion in 2003, and all US troops withdrew at the end of 2011 without creating an effective set of security agreements. Iraq is seeking major arms imports, but now has little military ability to resist Iranian pressure.

Today, Iraq is also a deeply divided state whose internal stability is highly uncertain. Its sectarian divisions between Sunni and Shi'ite and ethnic divisions between Arab and Kurd present major challenges. As Figure MEG-10 shows, Iraq has never eliminated the Shi'ite versus Sunni violence that led to a major civil war during 2006-2008. It has seen its level of violence double in the course

of 2012-2013. Iraq's internal violence now borders on low-level civil war, and is shaped growing internal violence between Sunni and Shi'ite; Iraq's increasing role in providing volunteers to both sides in the civil war in Syria, serious tensions between Arab and Kurd, and by the Iranian and US/Arab struggle for influence over Iraq.

Iraq's power struggle between its Shi'ites and Sunnis has led its Shi'ite-dominated government to tilt towards Iran, while a new coalition called ISIS has united Sunni extremists in both Iraq and Syria with ties to Al Qaida. Tensions between the central government and Kurdish regional government present ongoing problems, the constant risk of clashes that could escalate to serious conflict and problems for the development and export of Iraqi petroleum resources.

To put these issues in perspective, GOI data showed that 2,645 Iraqis were killed in 2011 alone, including 1,578 civilians, 609 police personnel, and 458 soldiers.¹¹⁸ Over 4,400 Iraqi's were wounded in violence. And while December 2011 marked one of lowest monthly death tolls (155 killed) in Iraq since 2003, December 22, 2011 was the bloodiest day in Iraq in since 2009. At least 31 incidents took place that one day, including 21 IED attacks killing over 60 Iraqis, and a suicide attack against a government building in Baghdad that left 32 people dead.¹¹⁹

As is shown in **Figure IV.12**, this rising level of violence led the US State Department to rank Iraq as the second ranking center of terrorism in the world in 2012 – and these figures do not take account of a level of state repression or terrorism by the Maliki government that has been a major cause of extremist violence as well as an effort to suppress it.

This rise in violence has not yet led to a broad popular response among the Shi'ite portion of Iraq's population, or anything like the rise in violence that took place between 2004-2006, but it is a warning that a combination of internal tensions in Iraq and the impact of outside forces like the Syrian civil war are now reemerging as a major threat. It also has led to an increasing focus by the Iraqi central government and security forces on Sunni areas and factions, further polarizing already polarized political conflicts within the Iraqi government and national politics.

This trend began to emerge in May 2013. Over 1,000 people were killed in May. The UN envoy in Iraq, Martin Kobler warned that, "This is a sad record," and as the following data show, his warning proved to be all too accurate. Iraqi body count data show that it estimated that 968 were killed in July, and 945 were killed in August.¹²⁰ To put these figures in perspective, Iraq Body Count estimates that the most violent month in the civil war occurred July 2006, with 3,266 violent deaths. The most sustained period for high-level violence took place from March 2006 to March 2008, when 'sectarian' killings peaked and some 52,000 died.¹²¹

UNAMI summarized the trends as of the end of July 2013 as follows:¹²²

According to casualty figures released today by UNAMI, a total of 1,057 Iraqis were killed and another 2,326 were wounded in acts of terrorism and violence in July. The number of civilians killed was 928 (including 204 civilian police), while the number of civilians injured was 2,109 (including 338 civilian police). A further 129 members of the Iraqi Security Forces were killed and 217 were injured.

Baghdad was the worst-affected governorate in July with 957 civilian casualties (238 killed and 719 injured), followed by Salahuddin, Ninewa, Diyala, Kirkuk and Anbar (triple-digit figures). Babil, Wasit and Basra also reported casualties (double-digit figures).

The impact of violence on civilians remains disturbingly high, with at least 4,137 civilians killed and 9,865 injured since the beginning of 2013," the Acting Special Representative of the United Nations Secretary-General for Iraq, Mr. Gyorgy Busztin, warned. "We haven't seen such numbers in more than five years, when the blind rage of sectarian strife that inflicted such deep wounds upon this country was finally abating. I

reiterate my urgent call on Iraq's political leaders to take immediate and decisive action to stop the senseless bloodshed, and to prevent these dark days from returning.”

Moreover, the data UNAMI provided in update of monthly casualty trends through the end of August 2013 were scarcely reassuring:¹²³

According to casualty figures released today by UNAMI, a total of 804 Iraqis were killed and another 2,030 were wounded in acts of terrorism and violence in August. ...The number of civilians killed was 716 (including 106 civilian police), while the number of civilians injured was 1,936 (including 195 civilian police). A further 88 members of the Iraqi Security Forces were killed and 94 were injured.

Despite the decrease in casualty figures in August, compared to July, the impact of violence on civilians remains disturbingly high, with almost 5,000 civilians killed and 12,000 injured since the beginning of 2013,” the Deputy Special Representative of the United Nations Secretary-General for Iraq, Ms. Jacqueline Badcock, warned...Baghdad was the worst-affected governorate in August with 1,272 civilian casualties (317 killed and 955 injured), followed by Salahuddin, Ninewa, Diyala, and Anbar (triple digit figures). Kirkuk, Babil, Wasit and Basra also reported casualties (double-digit figures).

UNAMI released another report on October 1, 2013 that described the situation in September as follows:

According to casualty figures released today by UNAMI, a total of 979 Iraqis were killed and another 2,133 were wounded in acts of terrorism and violence in September. The number of civilians killed was 887 (including 127 civilian police), while the number of civilians injured was 1,957 (including 199 civilian police). A further 92 members of the Iraqi Security Forces were killed and 176 were injured...Baghdad was the worst-affected governorate in September, with 1,429 civilian casualties (418 killed and 1011 injured), followed by Ninewa, Diyala, Salahuddin and Anbar. Kirkuk, Erbil, Babil, Wasit, Dhi-Qar and Basra also reported casualties (double-digit figures).

These increases in violence were serious enough to lead US Secretary of State John Kerry to state during a mid-August visit by Iraqi Foreign Minister Hoshyar Zebari that, “Sunni and Shia extremists on both sides of the sectarian divide throughout the region have an ability to be able to threaten Iraq's stability if they're not checked.”¹²⁴

Another key aspect of the rise in violence is even harder to track and quantify. According to the UNHCR, Iraq still had some 98,822 Iraqis registered as refugees, 4,914 asylum seekers, 82,270 returned refugees, 1,131,810 returned refugees, 1,131,810, returned refugees, 218,800 internally displaced persons, 120,000 stateless persons inside Iraq at the beginning of 2013 – creating a total population of concern of 1,656,616. The data on registered Iraqi refugees outside the country added another 746,440, and there were 23,920 asylum seekers outside the country. This created a total population of concern of 2,302,240 – a number that does not include wealthier persons who do not seek UN assistance or those who simply are not counted in the chaos of events in Iraq and outside the region.¹²⁵

In short, Iraq presents a major and continuing source of risk in the sub-region that affects a country that can now produce some 3 MMBD and has some 143 billion barrels of reserves. It not only presents risks because of its internal violence and divisions, but because of its links to Iran, the Syrian civil war, and tensions with its Arab neighbors. There is still time for some form of national political compromises to create a national government, reduce the level of violence, and move Iraq towards stability, but there are few indications of such progress to date.

The trends in Iraqi violence through 2013 are shown in **Figure IV.13**.

***Figure IV.11: The Impact of the US Invasion on the Iranian-Iraq Balance:
2003 vs. 2013***

Category	2003			2013		
	Iraq	Iran	Force Ratio	Iraq	Iran	Force Ratio
Active Manpower	424,000	513,000	4:5	271,400	523,000	1:2
Reserve Manpower	650,000	350,000	19:10	NA	350,000	NA
Main Battle Tanks	2,200	1,565	7:5	336+	1663	1:5
AIFVs	1,300	815	8:5	193	725	1:3.8
APCs	2,400	590	4:1	1,455	640	2.3:1
Towed Artillery	1,900	2,085	9:10	138+	2,030	1:14.7
Self-Propelled Artillery	150	310	1:2	48+	292	1:6
Multiple Rocket Launchers	200	889	1:5	?	1,476	NA
Combat Aircraft	316	283	11:10	3	336	1:112
Attack Helicopters	100	85	6:5	0	50	NA
Major SAM Launchers	225	205	11:10	0	234	NA

Source: Adapted from IISS, **The Military Balance 2013**, various editions and Jane's Sentinel series.

Figure IV.12: The US State Department Estimates that Iraq Ranks Second Among the Top Ten Centers of Terrorist Activity in 2012

Ten countries with the most terrorist attacks, 2012

Country	Total Attacks	Total Killed	Total Wounded	Average Number Killed per Attack	Average Number Wounded per Attack
Pakistan	1404	1848	3643	1.32	2.59
Iraq	1271	2436	6641	1.92	5.23
Afghanistan	1023	2632	3715	2.57	3.63
India	557	231	559	0.41	1.00
Nigeria	546	1386	1019	2.54	1.87
Thailand	222	174	897	0.78	4.04
Yemen	203	365	427	1.80	2.10
Somalia	185	323	397	1.75	2.15
Philippines	141	109	270	0.77	1.91
Syria	133	657	1787	4.94	13.44

Source: U.S. Department of State, "National Consortium for the Study of Terrorism and Responses to Terrorism: Annex of Statistical Information", Office of the Coordinator for Counterterrorism, May 30, 2012

Although terrorist attacks occurred in 85 different countries in 2012, they were heavily concentrated geographically. Over half of all attacks (55%), fatalities (62%), and injuries (65%) occurred in just three countries: Pakistan, Iraq, and Afghanistan.

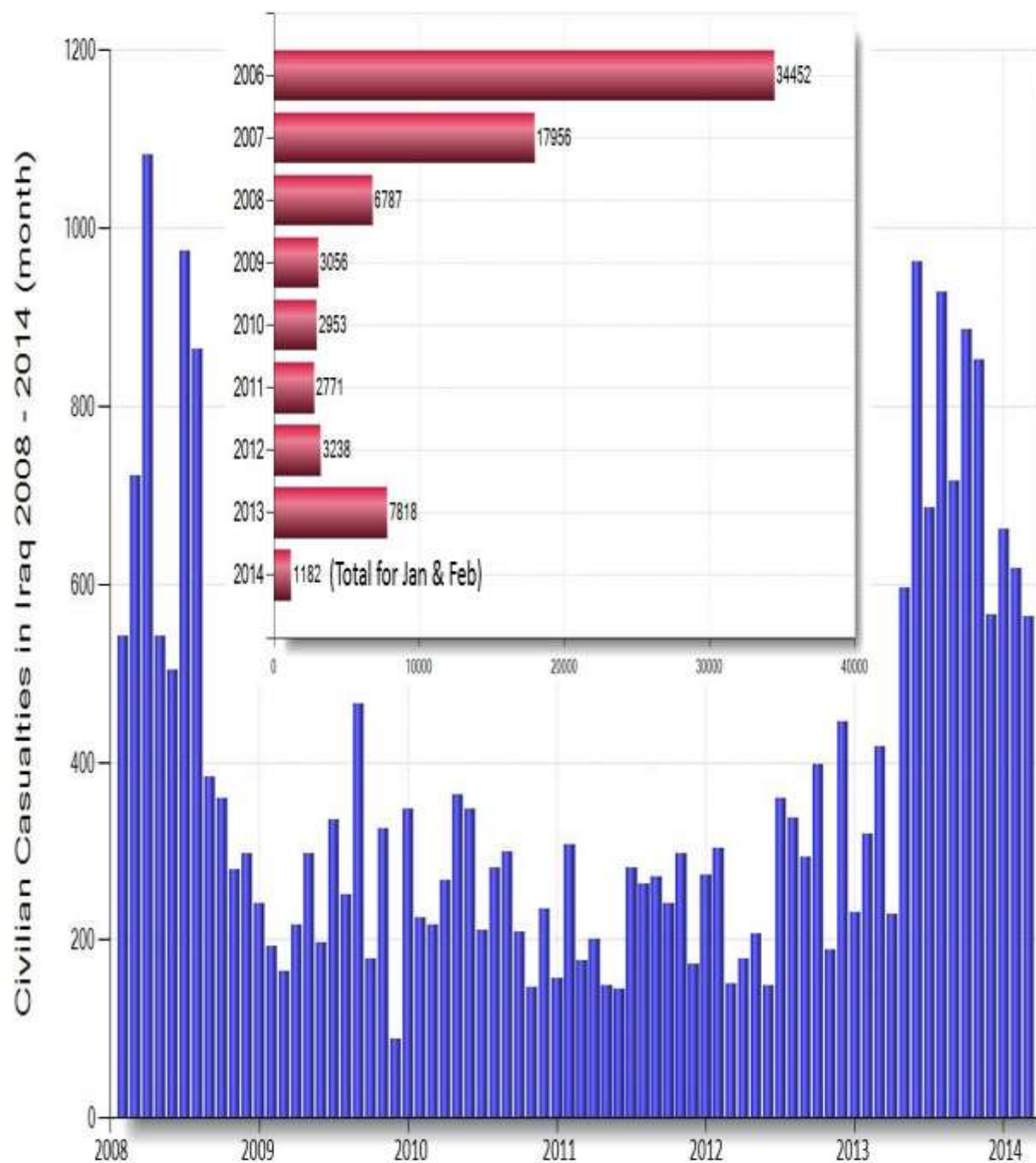
- The highest number of fatalities occurred in Afghanistan (2,632); however the country with the most injuries due to terrorist attacks was Iraq (6,641).
- The average lethality of terrorist attacks in Nigeria (2.54 deaths per attack) is more than 50 percent higher than the global average of 1.64. The average lethality of terrorist attacks in Syria (4.94 deaths per attack) is more than 200 percent higher than the global average.
- The average number of people wounded per terrorist attack was especially high in Syria, where 1,787 people were reportedly wounded in 133 attacks, including four attacks that caused 670 injuries.
- In contrast, the rates of lethality for India (0.42 deaths per attack), the Philippines (0.77 deaths per attack), and Thailand (0.78 deaths per attack) were relatively low among the countries with the most attacks.

Ten perpetrator groups with the most attacks worldwide, 2012

Perpetrator Group Name	Total Attacks	Total Killed	Average Number Killed per Attack
Taliban	525	1842	3.51
Boko Haram	364	1132	3.11
Al-Qa'ida in Iraq (AQI)/Islamic State of Iraq (ISI)	249	892	3.58
Maoists (India)/ Communist Party of India-Maoist	204	131	0.64
Al-Shabaab	121	278	2.30
Al-Qa'ida in the Arabian Peninsula (AQAP)	108	282	2.61
Tehrik-e Taliban Pakistan (TTP)	103	510	4.95
Kurdistan Workers' Party (PKK)	80	83	1.04
Revolutionary Armed Forces of Colombia (FARC)	71	122	1.72
Corsican National Liberation Front (FLNC)	58	0	0.00

Source: U.S. Department of State, "National Consortium for the Study of Terrorism and Responses to Terrorism: Annex of Statistical Information", Office of the Coordinator for Counterterrorism, May 30, 2012

Figure IV.13 Civilian Deaths in Iraq, Monthly Totals, 2008 – January 2014 (UNAMI)



Source: UNAMI and Dr. Abdullah Toukan, March 12, 2013; adapted and updated from a graphic developed by the BBC.

Figure IV.14: Civilian Deaths in Iraq: Monthly Totals of Killed and Injured November 2012-February 2014 (UNAMI)

Month	Civilian Casualties	Injured
February 2014**	564	1179
January 2014*	618	1052
December 2013	661	1201
November 2013	565	1186
October 2013	852	1793
September 2013	887	1957
August 2013	716	1936
July 2013	928	2109
June 2013	685	1610
May 2013	963	2191
April 2013	595	1481
March 2013	229	853
February 2013	418	704
January 2013	319	960
December 2012	230	655
November 2012	445	1306

Please note that all figures remain estimates until full investigation and analysis has been carried out.

Note: At least 759 people killed were killed in December, 661 of them civilians. The total for 2013 was the highest in five years, but significantly below 2006 and 2007. In contrast, the Iraqi government reported that 7,154 people were killed in 2013, including security forces personnel and militants. Iraq Body Count said it had recorded 9,475 civilian deaths.

*UNAMI could not estimate total casualties after December 2014 because the fighting in Anbar had reach the point where it could not estimate the casualties in the area with the most intense fighting. According to released by UNAMI, a total of 733 Iraqis were killed and another 1,229 were wounded in acts of terrorism and violence outside Anbar in January 2014. The number of civilians killed was 618 (including 178 civilian police), while the number of civilians injured was 1,052 (including 237 civilian police). A further 115 members of the Iraqi Security Forces were killed and 177 were injured not including casualties from Anbar operations.

**A total of 703 Iraqis were killed and another 1,381 were injured in acts of terrorism and violence outside Anbar in February 2014. The number of civilians killed was 564 (including 152 civilian police), while the number of civilians injured was 1,179 (including 262 civilian police). A further 139 members of the Iraqi Security Forces were killed and 202 were injured (not including casualties from Anbar operation).

Source: UNAMI, "UN Casualty Figures for February 2014, Anbar province excluded," Saturday, 01 March 2014 00:00, http://www.uniraq.org/index.php?option=com_k2&view=item&id=1677:un-casualty-figures-for-february-2014-anbar-province-excluded&Itemid=633&lang=en; "Iraq's annual death toll highest in five years – UN," 1 January 2014 Last updated at 12:29 ET, <http://www.bbc.co.uk/news/world-middle-east-25568687> and <http://www.bbc.co.uk/news/world-middle-east-26045127>. and Liz Sly, "In Iraq, a Sunni revolt raises specter of new War," *Washington Post*, January 6, 2014, http://www.washingtonpost.com/world/middle-east/in-iraq-a-sunni-revolt-raises-specter-of-new-war/2014/01/06/280f9216-7714-11e3-b1c5-739e63e9c9a7_story.html.

Bahrain

Most of the Southern Arab Gulf states face limited risks from internal instability, although Saudi Arabia and the UAE have significant Shi'ite minorities. Bahrain is an exception. Its ruling Sunni minority has a long history of tension with its Shi'ite majority and since 2011; there has been an accelerating process of protests, political confrontation and sporadic violence. This led Saudi and UAE security forces to intervene on behalf of the Bahraini government in March 2011 – although most were withdrawn in June.¹²⁶

While US and outside experts see the tensions involved as largely internal, they do feel Iran has played a role and supported some Bahraini Shi'ite extremist groups with training and weapons. The CIA estimates that 46% of the population is native and 54% is foreign, but does not provide a percentage estimate of the native Sunni vs. Shi'ite population. Various US experts put the Shi'ite percentages at over 60%.

The CIA describes the situation as follows in early 2014:¹²⁷

The Sunni-led government has struggled to manage relations with its large Shia-majority population. In early 2011, amid Arab uprisings elsewhere in the region, the Bahraini Government confronted similar protests at home with police and military action. The aftermath led to modest reforms, though continued dissatisfaction by Bahraini oppositionists with the extent of the reforms, has led to a broader dialogue between government officials, political societies, and legislators.

... Bahrain has taken great strides in diversifying its economy and its highly developed communication and transport facilities make Bahrain home to numerous multinational firms with business in the Gulf. As part of its diversification plans, Bahrain implemented a Free Trade Agreement (FTA) with the US in August 2006, the first FTA between the US and a Gulf state. Bahrain's economy, however, continues to depend heavily on oil. Petroleum production and refining account for more than 60% of Bahrain's export receipts, 70% of government revenues, and 11% of GDP. Other major economic activities are production of aluminum - Bahrain's second biggest export after oil - finance, and construction. Bahrain competes with Malaysia as a worldwide center for Islamic banking and continues to seek new natural gas supplies as feedstock to support its expanding petrochemical and aluminum industries.

In 2011 and 2012, Bahrain experienced economic setbacks as a result of domestic unrest, however, several factors indicate that the economy is beginning to recover, such as the return of the formula one race and tourist cruise ships to Bahrain. Economic policies aimed at restoring confidence in Bahrain's economy, such as the suspension of an expatriate labor tax and frequent bailouts of Gulf Air, will make Bahrain's foremost long-term economic challenges - youth unemployment and the growth of government debt - more difficult to address.

The United States Country Report on Human Rights for Bahrain for 2012 stated that,¹²⁸

Approximately 17 percent of eligible voters participated in parliamentary by-elections for 18 seats vacated in September 2011. Independent human rights organizations did not consider the elections free and fair. On May 19, the king ratified constitutional amendments broadening the powers of the elected chamber of parliament. Security forces reported to civilian authorities during the year.

The most serious human rights problems included citizens' inability to change their government peacefully; arrest and detention of protesters on vague charges, in some cases leading to their torture in detention; and lack of due process in trials of political and human rights activists, medical personnel, teachers, and students, with some resulting in harsh sentences. Some protesters engaged in lethal acts of violence against security forces, including the use of improvised explosive devices, Molotov cocktails, and other improvised weapons.

Other significant human rights problems included arbitrary deprivation of life; arrest of individuals on charges relating to freedom of expression; reported violations of privacy; and restrictions on civil liberties, including freedom of speech, press, assembly, association, and some religious practices. The government sometimes imposed and enforced travel bans on political activists. Discrimination on the basis of gender,

religion, nationality, and sect persisted, especially against the Shia population. There were reports of domestic violence against women and children. Trafficking in persons and restrictions on the rights of foreign workers continued to be significant problems.

Beginning in February 2011, the country experienced a sustained period of unrest including mass protests calling for political reform. In 2011, 52 persons died in incidents linked to the unrest, and hundreds more were injured or arrested. The government prosecuted some police personnel implicated in abuses committed during the year and in 2011. Courts convicted six individuals of crimes related to police abuse, resulting in prison sentences ranging from three months to seven years. It was unclear whether any of those convicted were in prison at year's end. Many of the trials continued. In the pending cases, charges ranged from misdemeanor assault and battery to murder. The government took some steps to address the "culture of impunity," which the 2011 Bahrain Independent Commission of Inquiry (BICI) report identified.

In spite of efforts at dialogue and political conciliation during 2012-2013, little real progress had been made as of January 2014. The Bahraini government seemed able to keep control indefinitely because of Saudi and UAE support and the effectiveness of the Bahrain security forces, but the royal family and government seemed divided over offering serious reform, and the ongoing confrontation continued to affect the economy, and ability to attract foreign expertise and investment. Bahrain seemed likely to present at least a low to moderate risk of sporadic violence indefinitely into the future.

Yemen and a Potential Threat to Saudi Arabia and Oman

Yemen has a dismal ranking in virtually every international assessment of its quality of governance and economic potential:

- The World Bank ranks Yemen as having extremely low quality of governance. It ranks 192nd in the world in accountability, 209th in political stability and violence, 191st in government effectiveness, 195th in the quality of rule of law, 153rd in the quality of government regulation, and 193rd in the control of corruption.¹²⁹ It ranks only 167th out of 177 countries in the Transparency International Corruptions Perception Index.¹³⁰
- Yemen ranks 133rd in the World Bank ease of doing business ranking.¹³¹ It has problems in starting a business, getting construction permits, getting electricity, getting credit, protecting investors, taxation, trading across borders, and resolving insolvency.¹³²
- Yemen ranks 160th on the UN Human Development Index and has a Low Human Development Rank. The UAE ranks 41st. Saudi Arabia ranks 57th.¹³³
- Yemen's per capita income (\$2,300) only ranks 187th in the world. More than 45% of its population is below the poverty line.¹³⁴
- Yemen is still under acute demographic pressure. The US Census Bureau estimates that it had a population of 4.8 million in 1950, 9.1 million in 1980, 17.2 million in 2000, and 25.3 million in 2013. It estimates that it will have a population of 32.8 million in 2025 and 46.1 million in 2050.¹³⁵

Yemen's central government remains highly unstable, and its forces are weak and deeply divided. A sectarian rebellion continues in the Houthis areas in the northwest, which is now the location of the main elements and leadership of Al Qaeda in the Arabian Peninsula (AQAP). Serious tribal warfare continues in other areas, and there is a risk that parts of the south will again seek to secede.¹³⁶ Illegal immigration totaling some 400,000 a year, border clashes and smuggling, and terrorism present major problems for Saudi Arabia, which fought a recent border war against the Houthi rebels in the area and is now seeking to create a security zone along the border, while also creating a mix of concrete barriers and a multi-billion dollar electronic fence to separate the two countries.¹³⁷

Yemen's internal struggles, and the fact it has become the headquarters of Al Qaeda in the Arabian Peninsula, have made Yemen a serious potential source of regional conflict in Arabian Peninsula and led to a recent low-level border war between Saudi Arabia and Yemen's Houthi rebels. Internal power struggles, and north-south tensions could create a new source of piracy and problems in the Red Sea and at the Bab el Mandeb.

The end result is that Yemen is the most troubled state in the Arabian Peninsula. It remains in a low-level state of civil war, and is deeply divided on a sectarian, tribal, and regional level. A largely Shi'ite Houthi rebellion still affects much of the northwest border area and has serious influence in the capital of Sana and along parts of the Red Sea coast. Al Qa'ida in the Arabian Peninsula (AQAP) poses a threat in central Yemen, along with other elements of violent Sunni extremism, there are serious tensions between the northern and southern parts of Yemen, and power struggles continue between key elements of the military ruling elite both in the capital and outside it.

Yemeni Instability

The CIA estimates that Yemen's population had reached 25.4 million, and that some 42% of its population is 14 years of age or younger and 62% is under 25 years of age. The population growth rate is an extremely high 2.575%, and the median age is only 18.3 years.¹³⁸ Yemen's population growth has sharply outpaced both its economic development and its water and food supplies; it has declining petroleum reserves and exports, and has become a narco-economy with most of its male population addicted to Qat.

Yemen is a major route for drug and human trafficking across the Saudi border, and Saudi Arabia has faced major pressures from the illegal immigration of Yemeni workers that has led it to crack down and expel many since 2012. The US and Saudi Arabia both see Iranian influence over the Houthi as a threat, and cooperate in supporting the Yemeni government in fighting AQAP and UCAV strikes on AQAP leaders – some from facilities in Saudi Arabia.¹³⁹

The CIA described Yemen's situation as follows in January 2014:¹⁴⁰

North Yemen became independent of the Ottoman Empire in 1918. The British, who had set up a protectorate area around the southern port of Aden in the 19th century, withdrew in 1967 from what became South Yemen. Three years later, the southern government adopted a Marxist orientation. The massive exodus of hundreds of thousands of Yemenis from the south to the north contributed to two decades of hostility between the states.

The two countries were formally unified as the Republic of Yemen in 1990. A southern secessionist movement and brief civil war in 1994 was quickly subdued. In 2000, Saudi Arabia and Yemen agreed to a delimitation of their border. Fighting in the northwest between the government and Houthi rebels, a group seeking a return to traditional Zaydi Islam, began in 2004 and has since resulted in six rounds of fighting - the last ended in early 2010 with a cease-fire that continues to hold.

The southern secessionist movement was revitalized in 2008 when a popular socioeconomic protest movement initiated the prior year took on political goals including secession. Public rallies in Sana'a against then President SALIH - inspired by similar demonstrations in Tunisia and Egypt - slowly built momentum starting in late January 2011 fueled by complaints over high unemployment, poor economic conditions, and corruption.

By the following month, some protests had resulted in violence, and the demonstrations had spread to other major cities. By March the opposition had hardened its demands and was unifying behind calls for SALIH's immediate ouster. The Gulf Cooperation Council (GCC) in late April 2011, in an attempt to mediate the crisis in Yemen, proposed an agreement in which the president would step down in exchange for immunity from prosecution. SALIH's refusal to sign an agreement led to heavy street fighting and his injury in an explosion in June 2011.

The UN Security Council passed Resolution 2014 in October 2011 calling on both sides to end the violence and complete a power transfer deal. In late November 2011, SALIH signed the GCC-brokered agreement to step down and to transfer some of his powers to Vice President Abd Rabbuh Mansur HADI. Following elections in February 2012, won by HADI, SALIH formally transferred his powers. In accordance with the GCC initiative, Yemen launched a National Dialogue to discuss key constitutional, political, and social issues in mid-March 2013.

Yemen is a low income country that is highly dependent on declining oil resources for revenue. Petroleum accounts for roughly 25% of GDP and 70% of government revenue. Yemen has tried to counter the effects of its declining oil resources by diversifying its economy through an economic reform program initiated in 2006 that is designed to bolster non-oil sectors of the economy and foreign investment.

In October 2009, Yemen exported its first liquefied natural gas as part of this diversification effort. In January 2010, the international community established the Friends of Yemen group that aims to support Yemen's efforts toward economic and political reform. In 2012, the Friends of Yemen pledged over \$7 billion in assistance to Yemen.

The Yemeni Government also endorsed a Mutual Accountability Framework to facilitate the efficient implementation of donor aid. The unrest that began in early 2011 caused GDP to plunge more than 15% in 2011, and about 2% in 2012. Availability of basic services, including electricity, water, and fuel, has improved since the transition, but progress toward achieving more sustainable economic stability has been slow and uneven. Yemen continues to face difficult long-term challenges, including declining water resources, high unemployment, and a high population growth rate.

May 2013 reporting by the World Bank provided additional warnings regarding Yemen's challenges:¹⁴¹

After almost a year of crisis, in the wake of the Arab Spring, Yemen has embarked on a political transition based on an agreement brokered by the Gulf Cooperation Council (GCC). The Government of National Reconciliation was formed and confirmed by the Parliament in December 2011. Presidential elections were held in February 2012, and President Abd Rabbuh Mansur Al-Hadi was sworn in soon afterward. During the transition the government is expected to host a National Dialogue, draft a new constitution, and reform the army and security establishments. The transition is expected to end in February 2014 with legislative and presidential elections, to be held under the new constitution, followed by the inauguration of a new president and formation of a new parliament. Implementation of the GCC agreement is largely on track, though gains achieved so far are fragile and important challenges lie ahead.

...The National Dialogue process launched on March 18, 2013, offers an opportunity to bring together rival factions and enhance the state's authority, but it could run the risk of a stalemate if violence or debilitating political conflict persists or if major stakeholders do not take part in the process. The 565-member National Dialogue aims at drafting a new constitution and an electoral law that would pave the way for parliamentary and presidential elections scheduled for February 2014. It is not clear yet if all factions in the Southern Movement (Hirak) will join the dialogue although an agreement has been reached to have equal representation from the south and the north as well as 30% representation of women and 20% youth. Success of the political transition is contingent on continued support from the international community, successful restructuring of the military and security establishments, and delivering tangible, visible and quick results on the economic front, especially in terms of enhanced access to basic services and job and income opportunities.

... Security in Yemen remains calm but fragile. The lead up to the National Dialogue introduced a new level of unpredictability to the security environment as many delegations are unwilling to name delegates due to the possible security risks. There is a growing concern of possible Al Qaeda attacks. The past year of political transition has witnessed slow-paced progress in re-structuring of the army and the security and dismantling of ex-regime remnants in senior government positions. Widespread arms possessions, lawless regions, armed tribal groups, sustained sabotage to energy supplies, an active Al Qaeda network, political assassinations, and kidnappings continue to pose threats to the political transition and the security of the Yemeni civilians. Tensions between Al-Hirak and Al-Islah are expected to continue in the south.

...Yemen's economic situation has been very difficult in 2012. There have been continued attacks on oil pipelines and electricity transmission lines leading to interruptions of oil production and electricity delivery. Nonetheless, there are signs of economic activity revival after a 10 percent decline in 2011. Inflation has come down to single digits. The exchange rate has appreciated then stabilized at pre-crisis levels and foreign exchange reserves (including the recently received US\$1 billion deposits from Saudi Arabia) have increased to over US\$5.0 billion. These developments have allowed the authorities to reduce the policy interest rate from 20 percent to 18 percent. The fiscal deficit is expected at around 5.5 percent of GDP as a result of the Saudi oil grant and cuts in capital expenditures and transfers. Non-hydrocarbon revenues have also exceeded the budget estimates due to strengthened collection efforts. All indicative targets under the government's reform program that is supported by the International Monetary Fund's (IMF) Rapid Credit Facility have been met. IMF is considering a medium term reform program.

... The U.N. Security Council envoys completed a visit to Yemen amid tight security on January 27, 2012, and issued a statement expressing the international community's support to Yemen, and highlighting the following: (i) an inclusive and transparent national dialogue; (ii) the establishment of an Executive Bureau for the Acceleration of Aid Absorption (which is currently being supported by the World Bank); (iii) possible sanctions under Article 41 of the UN charter to any potential spoilers to the political transition (naming former president Saleh and former vice president Al Biedh); (iv) Yemen's territorial integrity and unity (with a clear signal to Hiraq that a separation by the South will not be supported by the international community); and (v) concern over arms and money transfers to Yemen from outside (hinting at recent alleged Iranian arms shipments to Yemen). Most recently, on March 7, 2013, the Friends of Yemen meeting was held in London to reiterate the international community's continued support to the country's transition on the political and security fronts. They also underscored their commitment to deliver on the US\$7.5 billion pledged for Yemen's economic and social development through humanitarian assistance and visible high impact investment projects.

...The transition government has an opportunity to start addressing the underlying causes of instability and social strife in order to rebuild Yemen's social and economic base and restore macroeconomic stability. Despite a history of conflict and recent unrest, there is an overall sense of optimism and hope for inclusive change in post-revolution Yemen. However, Yemen's transition may face significant risks if reforms do not materialize quickly and if substantive changes are not felt in the population, thus contributing to disillusionment with the efforts of the new government and potentially a return to unrest and a reversal of gains made.

The economy, already under significant strain prior to the crisis, has been severely disrupted by recent events. Reduced availability of fuel, particularly diesel, has aggravated electricity and water shortages. Agricultural, service, and industrial sectors have faced significant cost increases for inputs such as irrigation, transportation, and marketing, ultimately reducing production and exports. The interruption of production processes has resulted in business closures and job losses. Food and consumer prices have also risen steeply, and official price data for 2011 show an upsurge in annual inflation to 23 percent (at end-2011). While maintaining a relatively stable exchange rate throughout the crisis has helped to anchor expectations and counter food price inflation, Yemen remains one of the world's most food insecure countries.

Even before the crisis, Yemen was one of the poorest countries in the Arab region with a per-capita GDP of US\$1,209. The country has one of the highest population growth rates in the world, placing pressure on educational and health services, drinking water, and employment opportunities. Yemen is not expected to meet any of the Millennium Development Goals (MDGs).[1]

Poverty, which was already increasing prior to the crisis, is estimated to have risen further from 42 percent of the population in 2009 to 54.5 percent in 2012...Poverty is particularly high in rural areas, which are home to about 73 percent of the population and 84 percent of the poor. An estimated 806,586 people are now considered most vulnerable due to current and previous conflicts in Yemen,[3] including children who have been directly involved in or affected by the infighting and violence, as well as 213,000 vulnerable returnees and war-affected persons in the north, 203,900 refugees and asylum seekers,[4] and approximately 150,000 displaced people in the south.[5]

Women, who are already severely disadvantaged in Yemen, have suffered disproportionately as a result of the crisis. Preliminary figures from 2011 indicate decreased access to basic and social services and economic

opportunities, as well as high levels of gender-based violence as a result of the unrest. These effects have compounded the severe gender imbalances that already existed.

Yemen and Iran

Relations between Iran and Yemen are tense. The government in Sana'a perceives that Tehran has involved itself in Yemeni domestic affairs. Sana'a is concerned with Iran's support for the Shia Houthi community in northern Yemen, and of supporting a faction of the southern separatist movement (Herak), which has proven a threat to Yemeni security.

The Yemeni government has repeatedly turned down Iranian visits to Yemen as a result of this tension. It is believed that in 2009, Houthi and IRGC figures met in a plot to increase tensions between the Houthis on one hand and Sana'a and Riyadh on the other. Iran's Foreign Minister was denied a visit to Yemen as a result. Additionally, Yemen's military claims that it stopped multiple Iranian arms shipments to the Houthis.¹⁴²

During 2012, various reports suggested that Iran expanded its interests in Yemen through links to the Houthi militia and an Iranian espionage network within the country. In March 2012, a report by the *New York Times*, citing a high-level US government source, stated that the IRGC Quds Force was "using small boats to ship AK-47s, rocket-propelled grenades and other arms to replace older weapons used by the rebels."¹⁴³ Four months later, it was reported that President Hadi had turned down a meeting with an Iranian envoy, apparently as a result of an Iranian espionage network run by an ex-IRGC official that was exposed by the Yemeni government.¹⁴⁴ Iran has also tried to bring material that is used to make explosive devices in to Yemen material; the material was shipped in freighters from Turkey and Egypt that docked in Aden.¹⁴⁵

Despite the diplomatic tension caused by Iran's covert activities in Yemen, a report from *Asharq Alawsat* indicated several months later that Iranian espionage had continued through the Iranian Medical Center in Sana'a, as well as through "trade guises."¹⁴⁶ The article cited a Yemeni government source as stating that:¹⁴⁷

'Tehran is providing financial and logistical support to the secessionist movement, whilst it is also working to train some armed movements in southern Yemen, in addition to establishing a network of relations with Yemeni parliamentarians, political activists, journalists and writers [...and...] funding media operations and political parties with the objective of thwarting the transition of power in Yemen.'

Other reports note a Hezbollah presence in Yemen as well, and Iran not only seems to be engaged with the Houthi faction in the north, but possibly is aiding the Southern Mobility Movement (SMM) and/or otherwise hostile Al Qa'ida in the Arabian Peninsula (AQAP) factions in the south, which could have more serious security implications for the US, Saudi Arabia, and the other Gulf states.

The possibility of a relationship between Iran and AQAP is uncertain. Very senior Saudi experts feel that such cooperation exists in spite of AQAPs hostility to Shi'ites and Iran. One Arab media report suggests such a relationship, although open source reporting on any possible ties is limited.¹⁴⁸ An *NBC News* blog posting from August 2011 cites US government sources in suggesting the possible trafficking of a small firearm and AK-47s between Iran and AQAP.¹⁴⁹

US experts feel that any support that Tehran does provide to AQAP is very limited – similar in strategic value to the limited support that Iran is accused of providing the Taliban in Afghanistan.¹⁵⁰ They also feel that any such support does not reflect any Iranian backing for AQAP's goals and ideology, but rather an effort to make the group a tool for pressuring Saudi

Arabia, the US, and the Gulf Arab states through violence and instability. They feel Iran's more assertive support to the Houthis is also rooted in regional objectives and – like support to the Taliban – is a function of Iran's competition with the Gulf Arab states and the US.

There are no reliable data, however, that can put Iran's level of commitment to covert activities in Yemen into reliable perspective and show the extent to which it is assisting factions that seek to undermine the authority of the Gulf Arab and US-backed government in Sana'a. It is also impossible to verify claims that Iran is assisting groups in the south.

Commercial links between Iran and Yemen are limited, and total bilateral trade amounted to less than 1% of Yemen's total trade in 2010 – or 5.8 million Euros.¹⁵¹

Yemen, the US, and Saudi Arabia

The US has sent military aid and advisory teams to Yemen on a number of occasions – first to north Yemen and then to Yemen once it unified with the PDRY. The US ended military support after Yemen sided with Iraq over Iraq's invasion of Kuwait in 1990, but has resumed cooperation with Yemen with a heavy focus on counterterrorism since Al Qa'ida's attack on the USS Cole in Aden Harbor in 2000.

The US formally renewed strategic cooperation with Yemen in 2009 as part of, “a new U.S. strategy toward Yemen referred to as the National Security Council's Yemen Strategic Plan. This strategy is essentially three-fold, focusing on combating AQAP in the short term, increasing development assistance to meet long-term challenges, and marshaling support for global efforts to stabilize Yemen.” The US has also deployed a small Marine detachment to protect its Embassy in Sana'a since an attack on the embassy by some 200 young Yemenis on September 13, 2012. It also has deployed advisory teams and aid in counterterrorism and counterinsurgency since 2011, including personnel from the CIA and Joint Special Operations Command (JSOC) as well as used Unmanned Combat Aerial Vehicles (UCAVs).¹⁵²

US relations with Yemen are now shaped by its political instability and security problems, the fact that it is the base of AQAP, and an insurgency on its northwest border that has recently led to serious clashes with Saudi forces. As has been discussed earlier in the section on Saudi Arabia, the Kingdom fought a low level border war with Yemeni rebels in 2010-2011, and sees Yemen's Houthi rebels and their ties to Iran and AQAP as major security threat.

Saudi Arabia has built a security fence along its 1,458 kilometer border with Yemen and reorganized its Frontier forces, military forces and National Guard, and elements of its intelligence services and Ministry of Interior internal security forces to better secure its border as a result of the problems it had in operating against the Houthi and defending Saudi territory near the border. These steps include more emphasis on helicopter mobility and fire support, better training for counterinsurgency and mountain warfare, and the use of more advanced sensor and other IS&R assets.

Oman has a long history of problems with Yemen dating back to the Dhofar Rebellion in the 1960s and 1970s, and shares a 288-kilometer border with Yemen. More of its border area is in desert area than is the case with Saudi Arabia, and a high plateau area and mountains create barriers to movement in the border area near the Indian Ocean coast. Both countries do not share the same populated areas and tribal groups to anything like the extent that exists along the Saudi border, and there has been only limited tension between Oman and Yemen since they re-established diplomatic

relations in 1987. Oman has, however, maintained security forces in the border area and has detected AQAP elements infiltrating Oman from Yemen.¹⁵³

The Emerging Role of AQAP

AQAP was formed in 2009 when the Al Qa'ida movements in Saudi Arabia and Yemen merged after the Saudi branch was crippled by Saudi counterterrorism operations and was forced to locate its headquarters in Yemen. AQAP is only one of the Sunni Islamist extremist groups operating in Yemen, but it has been the source of attacks in both Yemen and Saudi Arabia.

Earlier Al Qa'ida affiliates in Yemen are responsible for the attack on the USS Cole in October 2000, murders of US, foreign, and Saudi citizens in Saudi Arabia; a shooting attack on a US military recruiting office in Little Rock on June 1, 2009; the so-called “underwear” bombing attempt on Northwest Airlines Flight 253 on December 25, 2009; and an attempt to place bombs on cargo planes flying to the US in October 2010. AQAP has made serious attempts to attack targets in the US, and seems to have played a role in the attack on the US consulate in Jeddah in Saudi Arabia in December 2004.¹⁵⁴ Both US and Yemeni official sources have reported that it has continued to plan attacks on Yemeni and foreign targets, and made plans for attacks on US and other embassies in Yemen as well as ports and other targets in August 2013.¹⁵⁵

The political tensions and uprisings that forced President Ali Abdullah Saleh to resign on February 27, 2012 – after serving at the leader of the YAR from 1978 to 1990 and of a united Yemen from 1990 to 2012 – have given AQAP the opportunity to exploit both the regional and tribal differences in the country, as well as the more conservative Sunni factions.

Since the uprising began in early 2011, AQAP has worked with Yemeni Salafist extremists to seize control of territory in Yemen and exploit Yemen's internal tensions and civil conflicts. It has attacked targets in Yemen, but has also trained outside supports of Al Qa'ida including British volunteers and members of Al Shabaab, an Al Qa'ida affiliate in Somalia.

The US State Department report on terrorism, issued in May 2013, described AQAP as follows:¹⁵⁶

al-Qa'ida in the South Arabian Peninsula; al-Qa'ida in Yemen; al-Qa'ida of Jihad Organization in the Arabian Peninsula; al-Qa'ida Organization in the Arabian Peninsula; Tanzim Qa'idat al-Jihad fi Jazirat al-Arab; AQAP; AQY; Ansar al-Shari'a

Description: Al-Qa'ida in the Arabian Peninsula (AQAP) was designated as a Foreign Terrorist Organization (FTO) on January 19, 2010. In January 2009, the leader of al-Qa'ida in Yemen (AQY), Nasir al-Wahishi, publicly announced that Yemeni and Saudi al-Qa'ida (AQ) operatives were working together under the banner of AQAP. This announcement signaled the rebirth of an AQ franchise that previously carried out attacks in Saudi Arabia. AQAP's self-stated goals include establishing a caliphate in the Arabian Peninsula and the wider Middle East, as well as implementing Sharia law.

On September 30, 2011, AQAP cleric and head of external operations Anwar al-Aulaqi, as well as Samir Khan, the publisher of AQAP's online magazine, *Inspire*, were killed in Yemen.

Activities: AQAP has claimed responsibility for numerous terrorist acts against both internal and foreign targets since its inception in January 2009. Attempted attacks against foreign targets include a March 2009 suicide bombing against South Korean tourists in Yemen, the August 2009 attempt to assassinate Saudi Prince Muhammad bin Nayif, and the December 25, 2009 attempted attack on Northwest Airlines Flight 253 from Amsterdam to Detroit, Michigan. AQAP was responsible for an unsuccessful attempt to assassinate the British Ambassador in April 2010, and a failed attempt to target a British embassy vehicle with a rocket in October of that year. Also in October 2010, AQAP claimed responsibility for a foiled plot to send explosive-laden packages to the United States via cargo plane. The parcels were intercepted in the UK and in the United Arab Emirates.

In 2012, the Yemeni government carried out a two-month offensive to uproot AQAP from portions of Abyan Governorate, and Yemeni forces eventually regained control over the towns of Zinjibar and Jaar. However, approximately 3,000 land mines, planted by AQAP militants before they fled, killed 72 residents in the aftermath of AQAP's departure. Other AQAP attacks in 2012 targeted the Yemeni military, including a February 2012 suicide car bombing that killed 26 Yemeni soldiers in Hadramawt Governorate.

The FTO designation for AQAP was amended on October 4, 2012, to include the alias Ansar al-Shari'a (AAS). AAS represents a rebranding effort designed to attract potential followers in areas under AQAP's control. AQAP, operating under the alias AAS, carried out a May 2012 suicide bombing in Sanaa that killed 96 people. AQAP/AAS claimed responsibility for the attack, which targeted Yemeni soldiers rehearsing for a parade to celebrate Yemen's National Day, and said the bombing was intended to target the Yemeni military brass. Also in May, press reported that AQAP allegedly plotted to detonate a bomb aboard a U.S.-bound airliner using an improvised explosive device. Though there was no imminent threat to U.S. jetliners, the device, which was acquired from another government, was similar to devices that AQAP had previously used in attempted terrorist attacks.

Strength: Although it is difficult to assess the number of AQAP's members, the group is estimated to have close to one thousand members.

Location/Area of Operation: Yemen

Funding and External Aid: AQAP's funding primarily comes from robberies and kidnap for ransom operations and to a lesser degree from donations from like-minded supporters.

The US National Counterterrorism Center (NCTC) described AQAP as follows in its Counterterrorism Calendar for 2013:¹⁵⁷

Al-Qa'ida in the Arabian Peninsula (AQAP) is a Sunni extremist group based in Yemen that has orchestrated numerous high-profile terrorist attacks. One of the most notable of these operations occurred when AQAP dispatched Nigerian-born Umar Farouk Abdulmutallab, who attempted to detonate an explosive device aboard a Northwest Airlines flight on 25 December 2009—the first attack inside the United States by an al-Qa'ida affiliate since 11 September 2001. That was followed by an attempted attack in which explosive-laden packages were sent to the United States on 27 October 2010. The year 2010 also saw the launch of Inspire magazine, an AQAP-branded, English-language publication that first appeared in July, followed by the establishment of AQAP's Arabic-language al-Madad News Agency in 2011. Dual US-Yemeni citizen Anwar al-Aulaqi, who had a worldwide following as a radical ideologue and propagandist, was the most prominent member of AQAP; he was killed in an explosion in September 2011.

AQAP's predecessor, al-Qa'ida in Yemen (AQY), came into existence after the escape of 23 al-Qa'ida members from prison in the Yemeni capital, Sanaa, in February 2006. AQAP emerged in January 2009 following an announcement that Yemeni and Saudi terrorists were unifying under a common banner, signaling the group's intent to serve as a hub for regional terrorism in Yemen and Saudi Arabia. The leadership of this new organization was composed of the group's amir, Nasir al-Wahishi; deputy amir Sa'id al-Shahri; and military commander Qasim al-Rimi, all veteran extremist leaders. The group has targeted local, US, and Western interests in the Arabian Peninsula, but is now pursuing a global strategy. AQAP elements recently withdrew from their southern Yemen strongholds in June 2012, when Yemeni military forces under new President Abdu Rabbo Mansour Hadi—with the support of local tribesmen—regained control of cities in Abyan and Shabwah that had served as AQAP strongholds since 2011.

AQY operatives conducted near-simultaneous suicide attacks in September 2006 against oil facilities in Yemen, the first large-scale attack by the group. AQY later claimed responsibility for the attack and, in its first Internet statement in November 2006, vowed to conduct further operations. AQY in early 2008 dramatically increased its operational tempo, carrying out small-arms attacks on foreign tourists and a series of mortar attacks against the US and Italian Embassies in Sanaa, the presidential compound, and Yemeni military complexes. In September 2008 the group conducted its largest attack to date, targeting the US Embassy in Sanaa using two vehicle bombs that detonated outside the compound, killing 19 people, including six terrorists.

AQAP is based primarily in the tribal areas outside of Sanaa, which for the most part remain largely outside the control of the Yemeni Government. The US Government has designated AQAP as a Foreign Terrorist Organization.

Opinions differ over the extent to which AQAP is tied to the leadership of Al Qa'ida "central" in Pakistan. The US government referred to conversations between Ayman al-Zawahiri, the leader of Al Qai'da "Central", and Nasir al-Wuhayshi, the leader of AQAP in Yemen, as a key reason for shutting embassies in the Gulf because of an imminent threat in early August 2013.¹⁵⁸

It did not, however, cite the overall mix of sources it had on such a threat or attempt to describe the degree to which Al Qa'ida "central" could actually direct AQAP actions. Some experts feel Zawahiri can exercise considerable influence or control. Other experts note that relatively few Al Qa'ida plots have originated in Al Qa'ida "central" since 2010, and feel that AQAP is a largely independent "franchise" with a relatively loose hierarchy, ties to other groups in Yemen, and control over the planning of its own operations.

These debates over AQAP's ties to Al Qa'ida "central" does not, however, affect the fact it remains a serious factor in Yemeni politics and can infiltrate enough activists into Saudi Arabia to present continuing challenges to Saudi security forces. AQAP was able to seize parts of Yemen's southern province of Abyan for some 10 months before Yemeni forces could limit its operations and then was able to join with tribal factions in areas like the Hadramaut and reportedly organized an attempt to seize its capital of Mukalla and one of Yemen's major ports. This latter threat has been serious enough to lead to a significant shift in the pattern of US UCAV strikes in Yemen and also implies that AQAP has significantly increased their ability to infiltrate across the Saudi border near the Hadramaut.¹⁵⁹

In the last decade, Al-Qaeda has successfully taken advantage of popular discontent in many parts of the country – especially the south, which has been neglected by the ruling elites in Sana'a – to increase support for its cause and help recruit more members to the group. One of the ways AQAP does this is by providing communities with social services, such as teachers and water. Another group which has begun to successfully provide basic needs to the populations of the areas it controls is Jabhat Al Nusra in Syria.¹⁶⁰ AQAP has also used the internet effectively to further garner support by targeting the disenfranchised and those with popular feelings of anger and humiliation. AQAP combines this with their own extremist religious views and messages that blame the US.¹⁶¹

There has also been a growing interaction between AQAP in Yemen and the flow of outside volunteers into Yemen for both AQAP operations in the area and training for operations in other areas like Somalia, Iraq, and Syria. AQAP still has a focus on Yemen and Saudi Arabia, but it remains a terrorist threat to the US and other Western states, and is expanding its ties and role in dealing with other Al Qa'ida affiliates, and violent Sunni Islamist extremists.

Counterterrorism and Cooperation with the US

These forces have increasingly led the US to step up its cooperation with the Yemeni Ministry of Defense. US policy toward Yemen is now driven by US efforts to promote security in the region by assisting the central government of Yemen, carrying out counterterrorism activities and strikes, working with Saudi Arabia, and promoting reform and economic development.

While security links between Washington and Sana'a existed under President Saleh, these security and counterterrorism efforts have been enhanced since President Hadi came to power. The US has

pursued multilateral efforts to combat terrorism and promote the change of power in Sana'a. UN Security Council Resolution 2051 in June 2012 allowed for sanctions against parties that obstruct the GCC political transition plan for Yemen.¹⁶²

President Hadi has made gradual progress toward developing a government that is less and less associated with the previous president. In April 2012, the chief of the Yemeni Air Force and President Saleh's half-brother, Gen. Mohammed Saleh al-Ahmar, resigned, though after he and others initially dodged calls from President Hadi to leave their positions.¹⁶³ In August, President Hadi shifted elements of the Republican Guard that were under the leadership of Saleh's son to within the structure of a Presidential Protection Force created by Hadi.¹⁶⁴

By April 2013, the former president's son was shifted from holding the senior position with the Republican Guard to the ambassadorial post in the UAE, while Saleh's nephews – who also held high-profile government positions – were given defense attaché assignments outside of Yemen. Unlike the changes made a year earlier, there has been no apparent resistance to the orders, and Saleh's son publically “welcomes the decision’.”¹⁶⁵

As of August 2013, Yemen did seem to have more political stability in its capital and its forces seem to be becoming more effective in dealing with tribal factions, AQAP, and other security problems. It does, however, remain politically unstable, have a weak central government that faces serious challenges, and is not able to establish a high level of security even in the capital. Its ability to cooperate with Saudi and other Gulf forces, and US and other outside advisors, is mixed. Both Iranian influence and AQAP remain serious challenges, and the government has shown the capability to establish either the level of governance in the field or economic progress necessary to achieve popular support and unity.

The US cooperates with the Yemeni government in seeking to defeat AQAP, and has provided Special Forces and other US advisors and assistance.¹⁶⁶ It has conducted a series of UCAV strikes from a facility in Saudi Arabia as well as from Djibouti. An Estimate by the *Long War Journal* states that, “Since 2002, the US has been conducting a covert program to target and kill al Qaeda commanders based in Yemen. Reports show that strikes have numbered 75 since 2002, with enemy deaths numbering 367 and civilian deaths numbering 82.”¹⁶⁷

As of August 2013, the *Long War Journal* estimates that the US had conducted one strike in 2002, two in 2009, four in 2010, ten in 2010, 42 in 2011, and 16 in 2012. Strikes continued in the first seven months of 2013, but the number since has been cut. The US strikes have been highly controversial, partly because of civilian casualties, and partly because AQAP has managed to portray them as coming from non-believers and as somehow being “unfair” compared to acts of terrorism.

The Yemeni government shares a common interest with the US and its neighbors in defeating Al Qa'ida. The US has also supported Yemen's counterterrorism efforts in ways guided by the US National Security Council's Yemen Strategic Plan – which involves “focusing on combating AQAP in the short term, increasing development assistance to meet long-term challenges, and marshaling support for global efforts to stabilize Yemen.”¹⁶⁸

Yemen does, however, still face serious problems that pose a threat to Yemen, Saudi Arabia, and other Gulf states. The State Department's *Country Reports on Terrorism 2011* describes the limits to Yemen's counterterrorism efforts as follows:¹⁶⁹

Yemen experienced significant political instability throughout the year, which reduced the Yemeni government's ability to address potential terrorist safe havens. Yemeni security forces struggled to project power beyond Sanaa and other major cities, which allowed al-Qa'ida in the Arabian Peninsula (AQAP) and other extremist groups to expand their influence in Yemen.

AQAP suffered significant losses in 2011, including the deaths of AQAP leader Anwar al-Aulaqi, Samir Khan, Ammar al-Wa'ili, and hundreds of militants and their commanders in Abyan. The Yemeni government launched large-scale operations against AQAP in the country's south, including the deployment of U.S.-trained and equipped counterterrorism forces. Despite successes in disrupting some operations, AQAP has continued to carry out attacks against Yemeni government targets, foreigners, and the Houthi movement in the north.

...The opposition walked out of Parliament in November 2010, and the body did not reconvene until December 2011. Accordingly, no progress was made on a package of counterterrorism laws first introduced in 2008. As a result, the Yemeni government lacked a clear legal framework for prosecuting terrorism-related crimes, often having to resort to charging suspects with "membership in an armed gang," which hampered law enforcement efforts.

The Yemeni government continued to face legal, political, and logistical hurdles, hindering effective detention and rehabilitation programming for Guantanamo returnees. The government also lacked a legal framework to hold former Guantanamo detainees for more than a short period of time.

...Official media published messages from President Saleh and other high-level officials and opinion leaders denigrating violent extremism and AQAP. At the same time, opposition figures, some of whom are now members of the new National Consensus Government, also publicly discussed their commitment to combating AQAP and other violent extremist groups. However, Yemeni government messaging often intentionally blurred the line between terrorist organizations and political opposition groups, regularly making unsubstantiated claims that the opposition, particularly the Islamist Islah party, had ties to AQAP. The government also often identified the Hirak or Southern Mobility Movement and the Houthi movement in the north as "violent extremist" organizations.

The State Department report issued on May 30, 2013 did indicate that Yemen was making limited progress.¹⁷⁰

Overview: The Government of Yemen successfully implemented a peaceful change of government and a military campaign against al-Qa'ida in the Arabian Peninsula (AQAP) strongholds in its southern governorates in 2012, while facing multiple challenges including military and police units of varying loyalties, tribal adversaries, anti-government Houthi groups, a southern secessionist movement, and lawlessness in many areas. After their setback in Abyan, AQAP terrorists took advantage of Yemen's climate of instability, employing asymmetric tactics in a campaign of bombings and targeted assassinations against government targets, pro-government tribal militias known as Popular Committees (PCs), as well as civilian and international targets.

The Yemeni government, under President Abdo Rabbo Mansour Hadi, remained a strong U.S. counterterrorism partner. Hadi demonstrated Yemen's commitment as a counterterrorism partner soon after taking office by ordering the military to dislodge AQAP militants from areas they occupied in Abyan and Aden governorates including the towns of Zinjibar, Jaar, and Shuqra. By June, these AQAP forces had been dislodged or withdrawn. AQAP elements continued to remain active in Abyan and Aden governorates, however, as well as in Sanaa and other governorates.

The U.S. conducted counterterrorism operations in Yemen and trained Yemeni forces. Two U.S.-trained counterterrorism units, the Yemen Special Operations Forces (YSOF) and the Counter Terrorism Unit (CTU), remained in the vicinity of Sanaa and did not participate in the early summer campaign against AQAP in the southern governorates. Fractures within the chain of command and reluctance on the part of these units' pro-Saleh leadership to commit forces contributed to this performance. YSOF was under the command of the son of former President Ali Abdullah Saleh, Ahmed Ali Saleh, and the CTU fell under the nephew, Yahya Saleh, Chief of Staff of the Central Security Forces. The CTU deployed to the southern governorates and participated in the counterterrorism fight later in 2012. In December 2012, President Hadi issued a decree that unified some of Yemen's various counterterrorism units and special operations forces under one command as part of a broader military reorganization.

In the spring of 2012, a Yemeni military offensive, with the help of armed residents, regained government control over territory in the south, which AQAP has seized and occupied in 2011. AQAP increasingly turned to

asymmetric tactics to target Yemeni government officials, pro-government PCs and their leaders, soldiers, civilians, and U.S. embassy personnel.

Yemeni government officials accused some pro-secessionist members of the Southern Movement (Hirak), of carrying out violent acts in the south. Senior security and military officials accused Hirak in the south and Houthis groups in the north of receiving weapons and funding from Iran in an effort to destabilize Yemen. They also accused Iranian elements of raising political and sectarian tensions through disinformation that promoted and encouraged violent extremism.

During 2011, US Joint Special Operations Command (JSOC) and the CIA worked together to address the threat of terrorism in Yemen, and the CIA was permitted to use a facility in Saudi Arabia to launch unmanned aerial combat vehicles (UCAVs) attacks on individuals in Yemen who may be planning to strike the US. These strikes are regarded as “signature strikes.”¹⁷¹ In addition, US military aircraft and UCAVs based in Djibouti, Saudi Arabia, and at sea carried out strikes in southern Yemen in 2012 that targeted the Ansar al Sharia insurgency.¹⁷² It is believed that there were at least 41 US strikes in Yemen in 2012 alone.¹⁷³ There was a noticeable spike in the number of attacks in 2012 – 42 attacks compared to just 17 in the previous ten years combined, according to the *Long War Journal*. Eight airstrikes have been reported thus far for 2013.¹⁷⁴

Data from the *Long War Journal* suggests that there have been a total of 67 US airstrikes in Yemen from 2002 to late 2012, leaving a total of 411 people dead.¹⁷⁵ The New America Foundation places the number of total airstrikes at 73 with 472-979 fatalities.¹⁷⁶ Of the total airstrikes, the Bureau of Investigative Journalism suggests that 44-54 of the strikes were executed by US drones, whereas the New America Foundation suggests 66, while 35 drone strikes have been recorded in the last 12 months.¹⁷⁷ New media reports that 34 suspected Al-Qaeda militants have been killed since late July, 2013.¹⁷⁸

These US strikes are having an important effect in killing key terrorists and aiding the Yemeni forces dealing with areas where AQAP and extremists have taken power or challenge the government. They also, however, have produced civilian casualties and resentment, and this has been exploited by AQAP and anti-US elements with some success.¹⁷⁹ It is reported that as recently as April 29, 2013, there were anti-drone demonstrations in the vicinity of the US Embassy in Yemen.¹⁸⁰ However, while many US drone strikes have been successful, there have been many serious failures; many of these strikes have resulted in the deaths of young children and innocent families, and some prominent anti Al Qaeda sheikhs have also been targeted. A day after Obama was re-elected, he ordered a strike that resulted in the death of a tribal leader who was negotiating with Al Qaeda to cut down on their lethal methods.¹⁸¹

There is no good answer to this problem. The strikes are the only effective way the US can achieve its counterterrorism goals and they produce fewer civilian casualties and collateral damage than any other option. They never, however, will be perfect and the trade-off between making strikes effective and political backlash will always be uncertain unless the Yemeni forces become strong enough so that targeting is clearly seen as aiding a popular central government and not a function of the US acting largely on its own.

Yemen's Military Forces

Yemen's military forces are now somewhat fragmented by the internal political divisions in Yemen, but have a number of elements that have proved to be effective fighters in counterinsurgency roles. They are relatively well-equipped in terms of major weapons numbers, but much of the weaponry is old and/or worn, maintenance and sustainment levels are usually

poor, and substantial portions are dead-lined or in storage. Unlike the other Arab Gulf states, Yemen lack the resources, political unity, and modern force structure to use many of its military resources effectively

US-origin Yemeni military assets include 50 M60A1 main battle tanks (though Soviet armor far outnumbers US armor in the Yemeni arsenal), 10 F-5 fighter aircraft, 2 C-130 transport aircraft, and 6 Bell transport helicopters. Munitions provided by the US include the AIM-9 Sidewinder air-to-air missile. Yemen also owns 4 US-origin Archangel patrol boats. Despite these transfers, the majority of Yemeni tanks and aircraft assets originated in the Former Soviet Union.¹⁸²

Yemen's commercial links with the US are minor, but more substantial than those with Iran. According to 2011 data from the CIA, the US was the sixth-largest export market for Yemen (5.8%) and the seventh-largest import market (4.2%).¹⁸³ 2010 data from the European Commission show a slightly smaller trade relationship, with bilateral trade with the US amounting to only 3.4% of Yemeni trade – or 474.6 million Euros – making the US Yemen's ninth-largest trading partner when grouping the EU-27 as one entity.¹⁸⁴ The US also backs Yemeni efforts to join the World Trade Organization (WTO), and Yemen currently serves as an observer state on the body.¹⁸⁵

An Unstable Bridge between the Gulf and the Red Sea

Yemen presents major challenges to the US, Saudi Arabia, Oman, and the other GCC states. It is in the middle of political upheavals that currently center on power struggles in the capital, but affect different factions throughout the country, and have no clear solution.

The immediate challenges are daunting. They include creating a fully effective government to replace Saleh, either by backing President Hadi or supporting other efforts that move towards national political unity. The US must support every meaningful effort to reconcile Yemen's different factions, bring some kind of unity to divided military security forces, deal with AQAP and terrorism, end its rebellions, and secure its border with Saudi Arabia and Oman. Some progress has already been made, though successes have been limited and the country remains unstable. Moreover, the US and Saudi roles supporting the government and counterterrorism is unpopular and is as much a limited part of the country's problems as it is part of the solution.

Moreover, Yemen's underlying demographic, economic and water challenges will ultimately prove to be even more serious. These challenges include finding some approach to nation-wide governance and economics that can create stability in a grindingly poor country with small and diminishing petroleum exports, a narco-economy that consumes a large part of its domestic resources, inadequate water supplies, major demographic pressures, and deep sectarian, tribal, and regional divisions. So far, the Yemeni government, the World Bank, the GCC, US aid planners, and NGOs have all failed to present a credible path forward in creating a credible, fundable plan to deal with these pressures.

Iran is another of Yemen's problems. Its spoiler role is marginal and likely to remain so, although it highlights the problem Saudi Arabia has in securing its border with Yemen – one that forces the Kingdom to deploy significant forces in the south to deal with Houthi and other factions, creates a major illegal immigration and smuggling problem, and has led to new – as well as costly and technically uncertain – efforts to create electronic and physical barriers along its entire border.

Terrorist groups such as AQAP and others in the region have successfully exploited weak governments in Yemen and Iraq to further recruit new members and re-emerge as a vital threat to US goals in the region and other governments. It is of great importance to the US and Gulf states

to make sure Yemen has a strong, functioning, and efficient central government in Sana'a, which through popular will is in a position to take action against such groups. Only the Yemeni government can find solutions to the problems that groups like AQAP revel on, such as development, poverty, corruption and an unfair distribution of wealth.¹⁸⁶

AQAP gets its main backing and safety net from the southern tribes of Yemen, who are generally opposed to the Yemeni government and the many northern tribes that support it. Once again, this is a part of AQAP's successful attempt to leverage local sentiment as a means of gaining control. The US, in collaboration with the Yemeni government, would need to create a strategy that would help create a holding force consisting of its tribal supporters.¹⁸⁷ While on the issue of the southern tribes who feel the northern half of the country has benefited the most out of the unification of Yemen, the government needs to include them in dialogue, actively help in developing the region, and use AQAPs tactic on working off such issues against the terrorist organization.

The US is still seeking to work with Saudi Arabia and the GCC to try to find some workable approach to the sheer scale of Yemen's economic and demographic problems, its growing population of nearly 25 million, its lack of effective governance, and poverty. Such progress is likely to be negligible in real terms in the near future because of the country's inability to absorb aid and halt corruption.

The magnitude of Yemen's problems also preclude any credible combination of US, Saudi, and other aid efforts from buying Yemen out of these challenges and makes real membership in the GCC a serious potential liability to the council. The real question is whether Yemen can slowly be put on a credible path in the future. The answers are uncertain, and may force the US and other southern Gulf states into a strategy focused more on containment than development.

Dealing with these issues requires a grim degree of realism and pragmatism. Slogans, good intentions, and half-formed concepts are not going to buy the US and its Gulf allies a significant amount of time.

Jordan

Jordan has faced a long series of pressures from Arab-Israeli and other regional conflicts, and repetitive waves of refugees – including the Iraq War and Syrian civil war. In spite of these challenges, it has a moderate ranking in most international assessments of its quality of governance and economic potential:

- The World Bank ranks Jordan as having mixed quality of governance. It ranks 154th in the world in accountability, 148th in political stability and violence, 97th in government effectiveness, 79th in the quality of rule of law, 90th in the quality of government regulation, and 82nd in the control of corruption.¹⁸⁸ It ranks 66th out of 177 countries in the Transparency international Corruptions Perception Index.¹⁸⁹
- Jordan ranks 119th in the World Bank ease of doing business ranking.¹⁹⁰ It has problems in starting a business, dealing with construction permits, registering property, getting credit, protecting investors, enforcing contracts, and resolving insolvency.¹⁹¹
- Jordan ranks 100th on the UN Human development Index and is a Medium human Development country. The UAE ranks 41st. Saudi Arabia ranks 57th.¹⁹²
- Jordan's per capita income (\$6,000) ranks 147th in the world.¹⁹³
- Jordan is under demographic pressure. The US Census Bureau estimates that it had a population of 560,000 million in 1950 – before a series of massive waves of refugees from Arab-Israel and other regional

conflicts. Its population was 2.2 million in 1980, 4.7 million in 2000, and 6.5 million in 2013. It estimates that it will have a population of 7.9 million in 2025 and 11.2 million in 2050.¹⁹⁴

It is important to put these numbers in perspective:

- Jordan ranks 119th out of 215 countries worldwide in the World Bank Ease of Doing Business index. It ranks 19th out of 35 countries in the IOR. Jordan Ranks 9th out of 15 countries in the Middle East. The rank order in the Middle is UAE (1st), Saudi Arabia (2nd), Israel (3rd), Qatar(4th), Oman (5th), Bahrain(6th), Kuwait(7th), Lebanon(8th), and Jordan(9th). All three ranking put Jordan in the High Risk category.
- Partly because the refugee problem, Jordan Ranks 158th out of 181 in Macroeconomic Stability, which puts it in the very high/critical risk category on a global basis. Jordan ranks 28th within the 35 countries in the IOR, which again puts Jordan at the Very High/critical Risk Category. Jordan Ranks 12th within the 15 countries in the Middle East Subregion. The only countries performing facing more challenges than Jordan are: Yemen, Syria and Sudan.

Jordan's Internal Stability

Jordan does not face immediate military threats but it does face serious problems because of political tensions between its government and opposing political factions, the impact of a global recession on its economy and flow of expatriate income, and the impact of regional instability on tourism. The tensions cause by the Syrian civil war and the ongoing impact of refugees from Iraq, and uncertain course of the Israeli-Palestinian conflict all affect its internal security.

The UN refugee agency, the UNHCR, reported in January 2014 that Jordan faced the equivalent of a 20% increase in its population from Syrian refugees alone,¹⁹⁵

Syrians have rapidly become the largest refugee population of concern to UNHCR in Jordan, with over 500,000 individuals registered or awaiting registration by August 2013, most of whom come from Deraa. Aside from 120,000 Syrians hosted in the Zaatari camp, the vast majority of Syrians reside in non-camp settings, predominantly in the north. Nonetheless, Syrians have been registered in all governorates across Jordan, notably Amman with 13 per cent. Based on current trends, UNHCR expects the numbers of Syrian refugees fleeing to Jordan to increase, with the potential risk of a larger, sudden influx. Push factors include generalized and targeted violence, in addition to a public service breakdown in most areas of Syria and increasing prices for fuel and food.

As of March 2013, Jordan was hosting nearly 30,000 Iraqi refugees; the majority of whom are from Baghdad. Third-country resettlement is expected to remain the primary durable solution for Iraqis in 2014 with some 1,500 departures, while some 300 Iraqis are expected to return to Iraq through UNHCR's voluntary repatriation program. The refugees remaining in Jordan will continue to require significant levels of support...

- Jordan continues to provide asylum for a large number of Syrians, Iraqis and other refugees, despite the substantial strain on national systems and infrastructure. This pressure has become even more acute over the past two years, as the global financial crisis has had an impact on Jordan's economic situation and infrastructure for water, electricity, waste management, education and health care.
- Jordan is not a signatory of the 1951 Convention relating to the Status of Refugees; however the protection space for refugees and asylum-seekers is considered favorable.
- The 1998 Memorandum of Understanding (MoU) between UNHCR and the Government is the basis for UNHCR's activities in Jordan. In the absence of any international or national legal refugee instruments in force in the country, the MoU establishes the parameters for cooperation on providing protection and assistance to refugees and asylum-seekers, and allows mandate refugees a maximum stay of six months after recognition, during which a durable solution should be found.

- Jordan has granted Syrian refugees access to services, such as health and education in host communities. Zaatari and Azraq camps for Syrian refugees were built on land provided by the authorities that are also providing security in the camp.

The UNHCR estimated that Jordan had 1,255,000 Syrian refugees in December 2013, and planned for Jordan to have 1,140,000 in December 2014 – an estimate that seems likely to be significantly too low because of the rising violence in Syria,¹⁹⁶ Jordan will need substantial help from the US and other states to deal with this crisis, but it is making progress in many areas.

An analysis by David Schenker of the Washington Institute notes that Jordan had:¹⁹⁷

“...a 30 percent budget deficit, slashing food and energy subsidies to meet International Monetary Fund loan requirements” at the start of 2013, and faced serious political challenges from the Moslem Brotherhood and Islamist movements.¹⁹⁸ However, Jordan then benefited from the collapse of the Moslem brotherhood in Egypt, the emergence of a more traditional Jordanian opposition party called al-Hirak, and the fact that, “the Brotherhood boycotted the January 2013 parliamentary elections, along with the municipal elections later that year. Absent Brotherhood participation, Wasat -- an alternate Islamist party believed to be supported by Jordanian intelligence -- secured the largest parliamentary bloc.”

Schenker notes that while Jordan made progress in dealing with its own economic and governance issues, it faces a major refugee burden:¹⁹⁹

As the political opposition has atrophied, the economy has marginally improved, at least on the macro level. A \$2 billion International Monetary Fund loan and a \$1.25 billion U.S. loan guarantee have helped. While inflation, subsidy cuts, unemployment, and corruption remain serious problems, a December IMF press release noted that, “Jordan's economic recovery is gaining traction.” The government has also taken steps to at least give the impression that it is fighting graft, with Prime Minister Abdullah Ensour announcing a new national anticorruption strategy last June. These developments -- in addition to widespread fears of instability a la Syria and Egypt -- have convinced the Jordanian street to acquiesce for now, enabling Amman to dodge the bullet of its own “Arab Spring.”

Similarly, Jeremy M. Sharp of the US Congressional Research Service provided an analysis in late January 2014 that indicates that Jordan is making progress and will probably continue to do so if it achieves adequate aid,²⁰⁰

Despite conflict on its borders, the Hashemite Kingdom of Jordan appears to remain internally stable and a reliable partner for the United States in the Arab world. Nevertheless, Jordan is an arid, resource-poor country that has been inundated with more than 500,000 Syrian refugees over the past two years. As Syria's civil war continues, how Jordan can cope with the humanitarian fallout is an open question. Supporting the needs of Syrian refugees in Jordan and elsewhere has been a major priority for U.S. and international aid agencies, and Members' support for opposition to additional funding to the Jordanian government for humanitarian purposes may depend on a variety of factors.

...Domestically, Jordan's lack of domestic energy and water resources places a constant strain on the government budget, with fuel imports and subsidies driving deficit spending and borrowing in recent years. When the government announced a reduction in fuel subsidies in November 2012 in line with commitments made to the International Monetary Fund (IMF), widespread street unrest ensued. The Jordanian government is trying to balance the need it apparently perceives to stave off unrest through social spending with the need to finance the growing budget deficit that results from such spending. Since it cannot do this alone, the government has turned to the IMF (a three year, \$2.38 billion loan approved in August 2012), the United States (\$660 million a year in bilateral aid), Europe, and the Gulf States (\$5 billion multi-year aid package pledged in December 2011) to keep it afloat until the overall political and economic situation improves.

Jordan's domestic political system has endured, as King Abdullah II, now in his 14th year of rule, attempts to appease domestic constituencies that serve as the foundation for his family's rule, while maintaining external ties to Jordan's financial benefactors in the Arab Gulf and the West. During the so-called Arab spring between 2011 and 2013, Jordan experienced periodic social unrest, but not nearly at the same level as some of its neighbors. Overall, while many Jordanians are struggling economically, popular movements for

democratic reform have failed to galvanize decisive support. Instead, the King himself has often tried to appear as the most fervent advocate of a top-down reform process that many observers believe may be more politically expedient than substantively effective.

Overall, popular economic grievances have spurred the most vociferous protests in Jordan. Like elsewhere in the Middle East, youth unemployment is high, and providing better economic opportunities for younger Jordanians is a major challenge outside of Amman. Large-scale agriculture is not sustainable, so officials are left with the option of providing young workers with low-wage, relatively unproductive civil service jobs. How the Jordanian education system and economy can respond to the needs of its youth has been and will continue to be one of the defining domestic challenges for the kingdom in the years ahead.

It is clear, however, that Jordan needs more than aid. It needs to take every possible step to make it easier to do business and attract foreign investment. It needs to sharply improve the level of National Governance in all its aspects, and encourage open and fair business competition without state favoritism or funds. Economic aid will help Jordan improve political stability and to focus on improving the life and income of all of its people in as equitable and fair a way as possible.

Outside nations have a strong incentive to provide such aid., Jordan plays a critical strategic role in both the Arab-Israeli peace process and in determining the security of the western approaches to the Gulf. It is the buffer between the IOR and the Levant. Syria has an ongoing civil war with little near term chance of resolution, and one which has involved Iran, the Hezbollah in Lebanon on the pro-government side, and Jordan, Lebanese Sunnis, Turkey, and the Arab Gulf states on the side of the rebels. Large numbers of Syrian refugees present a serious new problem for Jordan, Lebanon, and Turkey and to a more limited degree in Iraq.

The Arab Gulf states have provided Jordan with additional aid, as has the United States, but Jordan still faces significant challenges. The CIA describes the situation in Jordan as follows:²⁰¹

Jordan's economy is among the smallest in the Middle East, with insufficient supplies of water, oil, and other natural resources, underlying the government's heavy reliance on foreign assistance. Other economic challenges for the government include chronic high rates of poverty, unemployment, inflation, and a large budget deficit. Since assuming the throne in 1999, King ABDALLAH has implemented significant economic reforms, such as opening the trade regime, privatizing state-owned companies, and eliminating some fuel subsidies, which in the last decade spurred economic growth by attracting foreign investment and creating some jobs. The global economic slowdown and regional turmoil, however, have depressed Jordan's GDP growth, impacting export-oriented sectors, construction, and tourism. In 2011 and 2012, the government approved two economic relief packages and a budgetary supplement, meant to improve the living conditions for the middle and poor classes.

Jordan's finances have also been strained by a series of natural gas pipeline attacks in Egypt, causing Jordan to substitute more expensive diesel imports, primarily from Saudi Arabia, to generate electricity. ... In 2012, to correct budgetary and balance of payments imbalances, Jordan entered into a \$2.1 billion, multiple year International Monetary Fund Stand-By Arrangement. Jordan's financial sector has been relatively isolated from the international financial crisis because of its limited exposure to overseas capital markets. Jordan will continue to depend heavily on foreign assistance to finance the deficit in 2013.

At the same time, the US does see Jordan as a key security partner in the region as well as in helping to secure the approaches to the IOR. The US State Department cites Jordan as,²⁰²

a steadfast partner in counterterrorism. In addition to its diplomatic and political assistance to the Israel-Palestinian peace process, Jordan assisted the Palestinian Authority's continued development of state institutions through law enforcement training programs at the Jordan International Police Training Center (JIPTC). JIPTC-trained forces continued to earn the respect of regional actors for their success in maintaining security in the West Bank.

The Jordanian government further developed its counterterrorism capabilities and improved its capacity. At the same time, the political reform process in Jordan initiated an open discussion of the country's security institutions, and Jordan wrestled with the challenge of making its security organizations more transparent while maintaining their effectiveness. Security institutions have stepped up vigilance as Jordan faced the threat of spillover violence from the conflict in Syria.

The US seems likely to continue to provide significant aid. As Sharp's analysis notes:²⁰³

The United States has provided economic and military aid, respectively, to Jordan since 1951 and 1957. Total U.S. aid to Jordan through FY2013 amounted to approximately \$13.83 billion. Levels of aid have fluctuated, increasing in response to threats faced by Jordan and decreasing during periods featuring political differences or reductions of aid worldwide. On September 22, 2008, the U.S. and Jordanian governments reached an agreement whereby the United States agreed to provide a total of \$660 million in annual foreign assistance to Jordan over a five-year period, ending with FY2014. In the year ahead, both parties may try to reach a new five-year aid deal.

In recent months, Congress has taken additional steps to support Jordan. On August 2, 2013, the House of Representatives passed H.Res. 222, which expressed lawmakers' "firm commitment to support the Government of Jordan as it faces regional challenges and works toward a more peaceful and stable Middle East." In order to bolster Jordan's border security, Congress included Section 1207 in H.R. 3304, the National Defense Authorization Act for FY2014. This section authorizes the Secretary of Defense, with the concurrence of the Secretary of State, to provide up to \$150 million on a reimbursable basis to Jordan for security along its border with Syria.

On January 17, 2014, the President signed into law P.L. 113-76, the Consolidated Appropriations Act, 2014 that Congress passed days earlier. The law provides Jordan \$360 million in economic aid and \$300 million in military aid. It also stipulates that "from amounts made available under title VIII designated for Overseas Contingency Operations/Global War on Terrorism, not less than \$340 million above the levels included in the Memorandum of Understanding between the United States and Jordan shall be made available for the extraordinary costs related to instability in the region, including for security requirements along the border with Iraq." The law also continues to authorize foreign aid to be used for loan guarantees to Jordan and the establishment of an enterprise fund. Finally, Congress also appropriated additional Migration and Refugee Assistance funding (MRA) to help countries like Jordan cope with the Syrian refugee crisis.

The Israeli-Palestinian Issue, Sunni-Shi'ite Tensions, and Conflict Within the Islamic World

The failure to create a meaningful peace agreement between Israel and the Palestinians remains source of instability in the Gulf, the rest of the Middle East and the Arab world. It directly affects the stability of Lebanon, Jordan, the Sinai, and Suez Canal, and presents problems in US military and security relations with every Arab state.

The tensions between Israel and Gaza present a constant risk of new clashes, and new US efforts to broker a peace between Israel and the Palestinian Authority in the West Bank seem likely to have limited – if any – success. Iran has also exploited the situation in the past, using its support of the Hezbollah to try to persuade Arab states it serves their interest, and to justify its military build-up as if it were directed towards Israel – rather than towards expanding Iran's power and influence in the Gulf.

At the same time, the Arab-Israeli conflict has been overshadowed by the growing struggle for the future of Islam that now exist throughout the Islamic world, and has a growing impact on all of the Arab states in the IOR, as well as Pakistan, India, Bangladesh, and Malaysia.

At one level, this is struggle between Muslim fundamentalists and more secular and modern movements and governments that plays out in terms of violent extremism and terrorism. At another level, it is a struggle between hardline Sunni fundamentalists – sometimes called "Neo-Salafis"

and all the other sects of Islam. While outside states are concerned with the impact of Islamic extremist movements and terrorist groups outside the Islamic world, it is now violence between Muslims that the both US NCTC and Counterterrorism Center at West Point credited with producing something on the order of 90% of the total casualties from terrorism in 2012.

This struggle for the future of Islam has particular importance in the Gulf and Middle East Subregions because the Shi'ite theocracy in Iran is now competing not only with Arab governments in a conventional sense but trying to exploit Shi'ites in Bahrain, Iraq, Kuwait, and Saudi Arabia to its own advantage. At the same time, Sunni extremists target Shi'ites in Iraq, and Alawites in Syria, and have become a major faction in the Syrian civil war.

Given the overall unrest in the Subregion and the Islamic world, these levels of violence and terrorism seem likely to remain a serious problem in the IOR for the next decade.

V. THE RED SEA AND HORN SUB-REGION

Almost all of the states in the Red Sea and Horn Subregion qualify as high risk states. **Figure V.1** summarizes these risks and the country-by-country analysis that follows provides a series of international comparisons and rankings that show the depth of the issues involved. These issues are also highlighted in the overall rankings of governance, economic development, and human development provided in Chapter I and in the demographic and population data highlighted in Chapter II.

Strategic Risk versus National Risk

Strategic risk is different from national risk, however, and the key strategic issues that affect the entire Subregion and the IOR are the impact on piracy and the security of maritime traffic and energy exports through the Red Sea and Suez Canal. The Red Sea and the Horn have suffered from serious piracy – almost all coming from Somalia – in recent years.

Figure VI. 2, Parts 1-5, show the strength of the military forces in the Subregion. There are no major tensions between Red Sea states that seem likely to lead to conflict, but many states have troubled economies and uncertain political leadership. Egypt is a key case in point, and its forces control access to the Suez Canal and Sumed Pipeline. Similarly, Yemen is an unstable state with serious north-south and sectarian divisions and political unrest that could become a future source of piracy at the Bab el-Mandab, the eastern gate to the Red Sea.

The major near-term challenge in the Horn and Red Sea is primarily to end piracy, and create a stable mix of forces and deterrents that can prevent the emergence of serious conflicts in the region. At the same time, the rise of Salafist and other hostile movements in the Sinai does raise the issue of whether Egypt can secure the Suez Canal and its Red Sea approaches against both land-based attacks along the canal and small craft attacks from the Red Sea Coast.

Egypt is the only serious naval power in the Subregion except for the Saudi Western or Red Sea Fleet – which is headquartered at Jeddah, but has limited readiness and operational capability. In practice, US sea and air forces are the major power in the sub-region when significant threats arise, but other countries and international forces play a critical role. The US has air and sea power projection capability in Djibouti – which is now also a base for US forces. The British and US navies regularly transit the Suez Canal and Red Sea and US air-sea capabilities can dominate the military balance and security situation in the region.

Piracy in this sub-region, however, has created an additional mix of four international forces to deal with piracy and security. The oldest such force is CTF-150, which is now a 25-nation international force based in Bahrain. This force was expanded from a limited US force in 2002 and became an international force to deal with piracy and terrorism. Its role is to monitor, inspect, board, and stop suspect shipping in the Horn of Africa region, North Arabia Sea, and to support operations in the Indian Ocean.

The countries contributing to CTF-150 have included Canada, Denmark, France, Japan, Germany, the United Kingdom and the United States. Other nations who have participated include Australia, Italy, Netherlands, New Zealand, Portugal, Singapore, Spain, Thailand, Pakistan and Turkey. The command of the task force rotates among the different participating navies, with commands usually lasting between four and six months. The task force usually comprises 14 or 15 ships. It is coordinated by the Combined Maritime Forces (CMF), operating from the US Navy base in

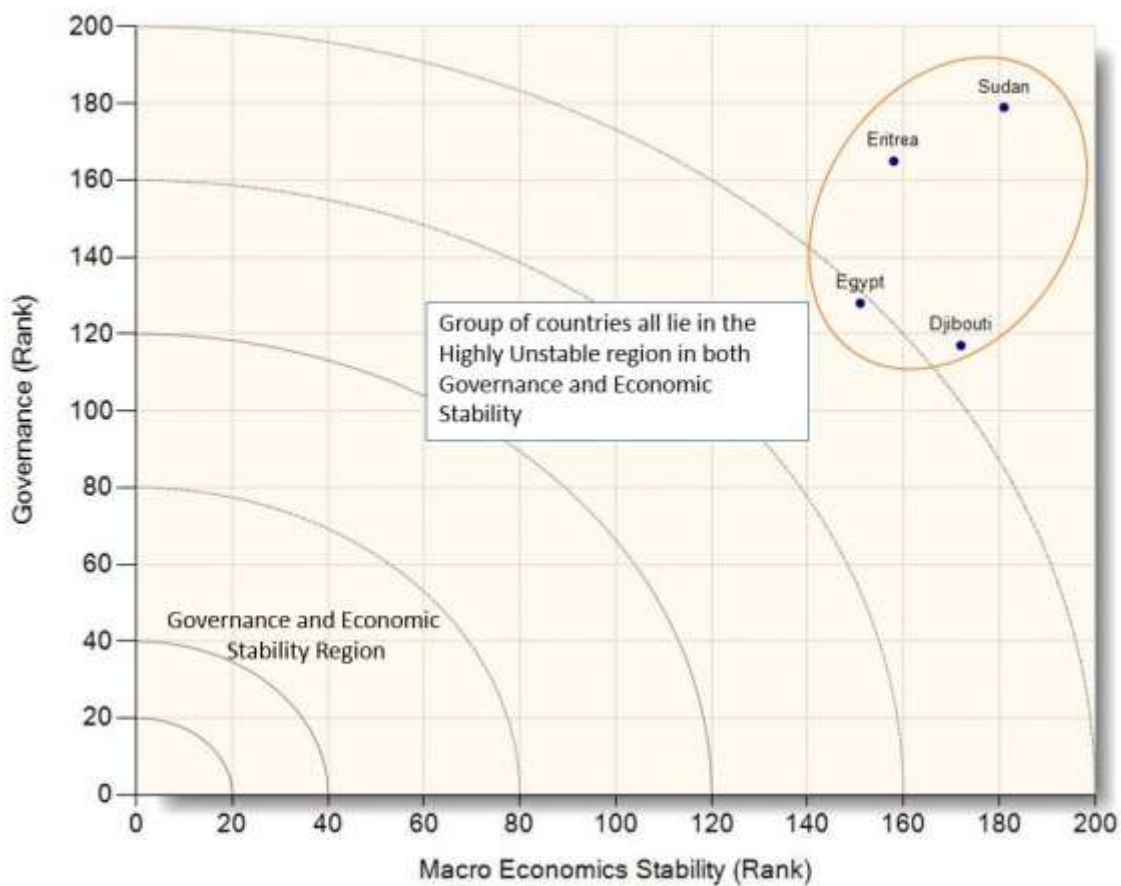
Manama, Bahrain, and has maintained a Maritime Security Patrol Area in the area around the Gulf of Aden since 2008 which is aimed at deterring attack and hijacking of ships seeking safe passage through the zone. In practice, it is dominated by US naval and air forces, and US IS&R capability – some based in Djibouti.²⁰⁴ China agreed to join the anti-piracy force in 2009 and some see this as symbol of China's ongoing efforts to become a full blue water navy and expand its role in the Indian Ocean.²⁰⁵ India, Japan, and South Korea have also participated, however, illustrating the growing importance of Asia's focus on the secure flow of petroleum exports and trade through the IOR.

Combined Task Force 151 or Combined Task Force One Five One was set up in 2009 specifically to help deal with to piracy attacks in the Gulf of Aden and off the eastern coast of Somalia. Its mission is to disrupt piracy and armed robbery at sea and to engage with regional and other partners to build capacity and improve relevant capabilities in order to protect global maritime commerce and secure freedom of navigation. It operates in conjunction with elements of CTF-150, the EU's Operation Atalanta and NATO's Shield. As of September 2013 the task force consisted of six ships from Australia, Pakistan, South Korea, Turkey, the UK and the USA.²⁰⁶

In addition, NATO maintains a force called Operation Ocean Shield that was set up in 2009. NATO states this force has, “warships and aircraft patrolling the waters off the Horn to counter maritime piracy while participating in capacity building efforts with regional governments. Operation Ocean Shield cooperates closely with other naval forces including US-led maritime forces, EU naval forces and national actors operating against the threat of piracy in the region. On 19 March 2012, the North Atlantic Council extended the operation until the end of 2014.”²⁰⁷

The European Union created another force called Operation Atalanta, or the European Union Naval Force Somalia (EU-NAVFORATALANTA) in 2008. The EU states it protects Somalia-bound vessels and shipments belonging to the African Union Mission to Somalia (AMISOM) and the World Food Program (WFP), as well as select other vulnerable shipments. In addition, Operation Atalanta monitors fishing activity on the regional seaboard. In 2012, the scope of the mission expanded to include Somali coastal territories and internal waters so as to co-ordinate counter-piracy operations with Somalia's Transitional Federal Government (TFG) and regional administrations. On 16 July 2012, the EU also mandated the EUCAP Nestor mission to build up the maritime capacity of regional navies. The EU has extended its service period through December 2015.²⁰⁸

Figure V.1: Economic and Governance Risks in the Red Sea and Horn Subregion

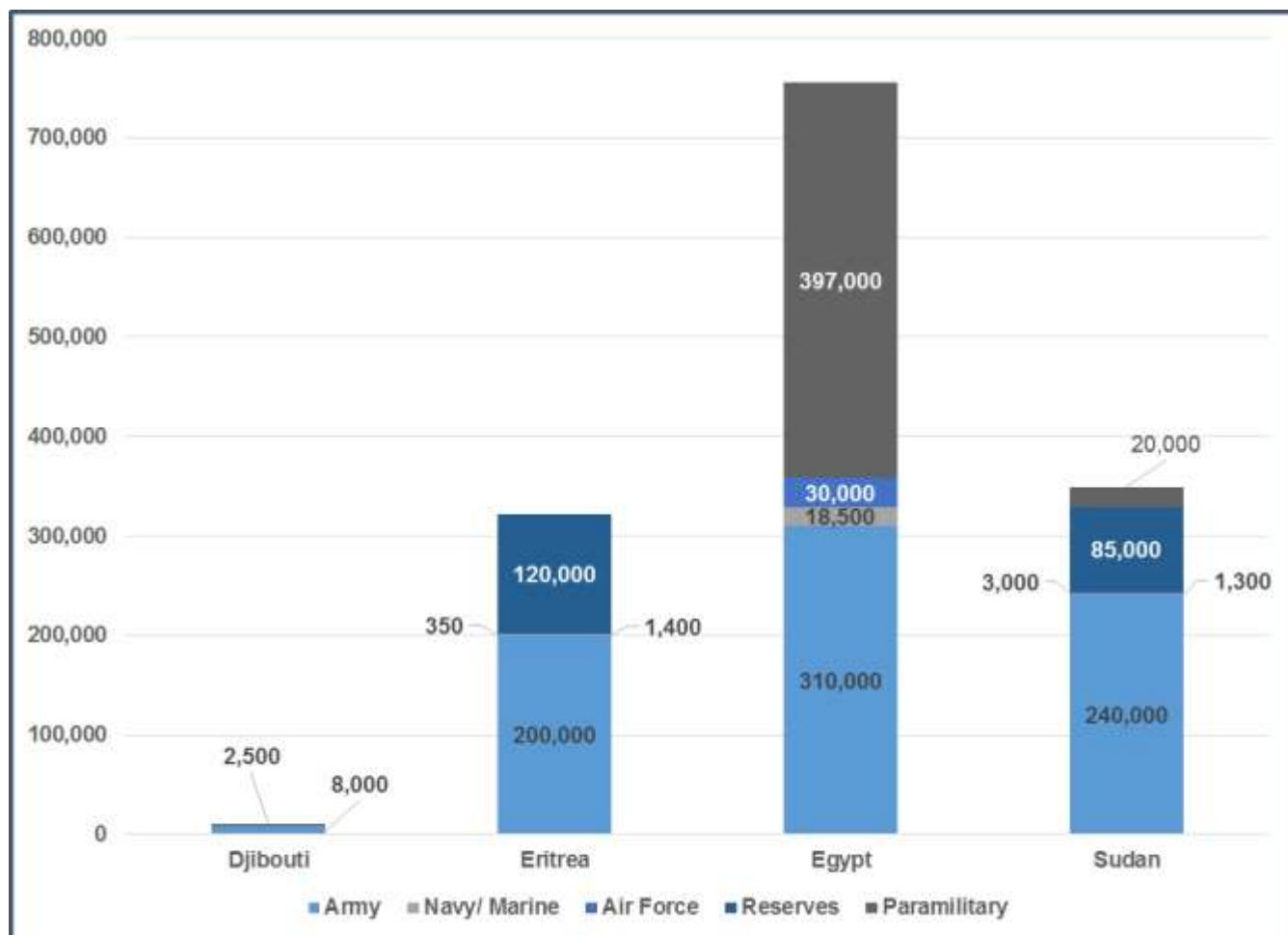


Source: Dr. Abdullah Toukan, 10.2.14

Figure V.1: Djibouti, Eritrea, Egypt & Sudan: Part One- Summary Force Totals

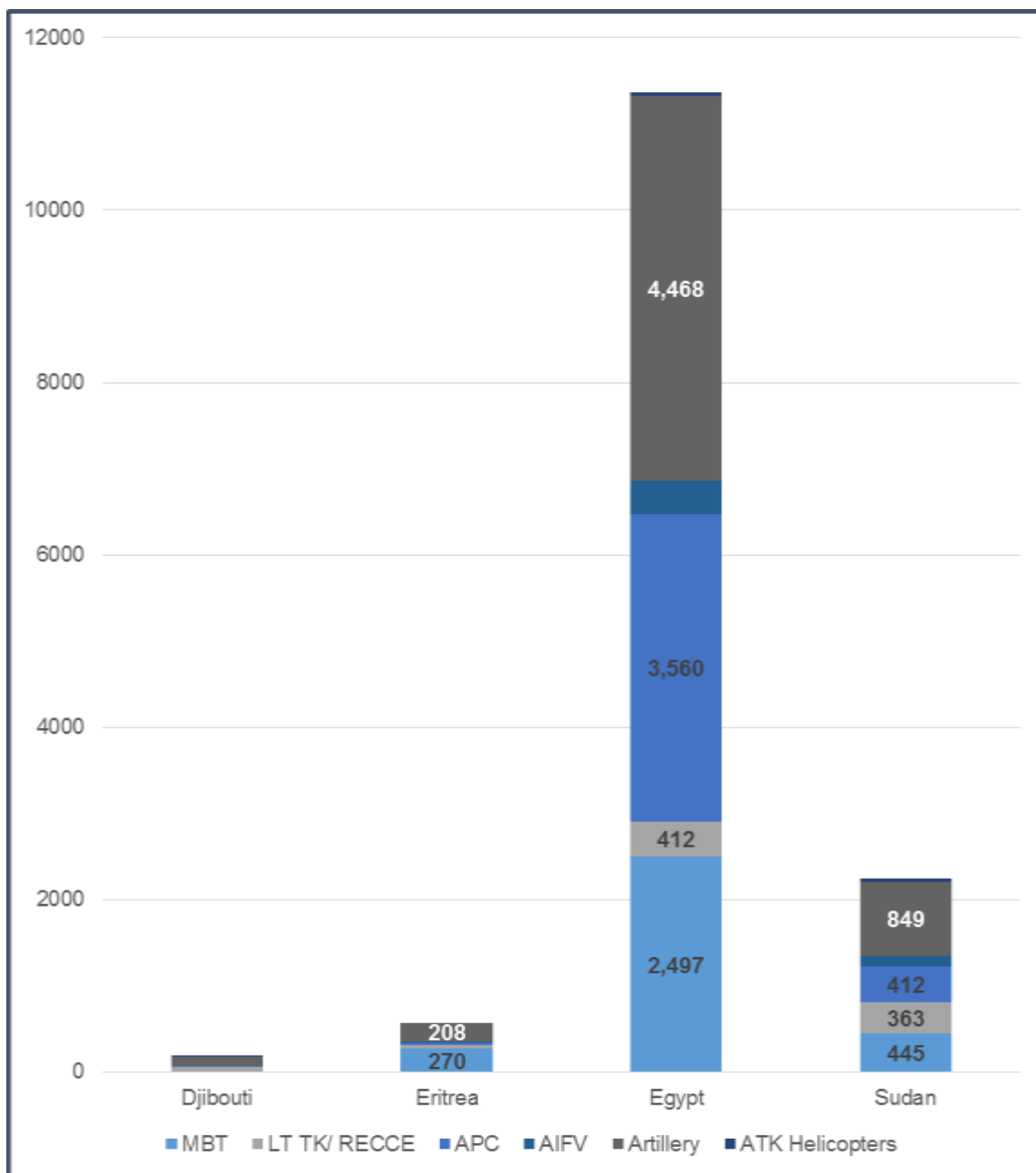
		Djibouti	Eritrea	Egypt	Sudan
Number of Troops	Army	8,000	200,000	310,000	240,000
	Navy/ Marine	200	1,400	18,500	1,300
	Air Force	250	350	30,000	3,000
	Air Defense Command			80,000	
	Reserves		120,000	479,000	85,000
	Paramilitary	2,500		397,000	20,000
	Total Troops:	10,950	321,750	1,314,500	349,300
Army	MBT		270	2,497	445
	LT TK/ RECCE	56	40	412	363
	APC	20	35	3,560	412
	AIFV		15	390	132
	Artillery	104	208	4,468	849
	ATK Helicopters	1		35	40
	Total Land Forces:	181	568	11,362	2,241
Navy	Amphibious	1	3	12	7
	Mine Warfare/ Countermeasures			14	
	Patrol and Coastal Combatants	12	12	133	4
	Principle Surface Combatants			8	
	Submarines			4	
	Support			32	2
	Total Naval Forces	13	15	203	13
Air Force	Fighter		6	62	22
	Fighter/Ground Attack		10	310	26
	Attack				29
	Transport	3	5	61	23
	Training		12	329	15
	Support Helicopters	2	8	93	24
	ISR			6	2
	Total Air Forces:	5	41	861	141

Source: Adapted from IISS, *The Military Balance 2014*, “Chapter 9: Sub-Saharan Africa,” and “Chapter 7: Middle East and North Africa. Data for Somalia was negligible due to a lack of existing central government.

Figure V.1: Djibouti, Eritrea, Egypt & Sudan: Part Two- Total Forces

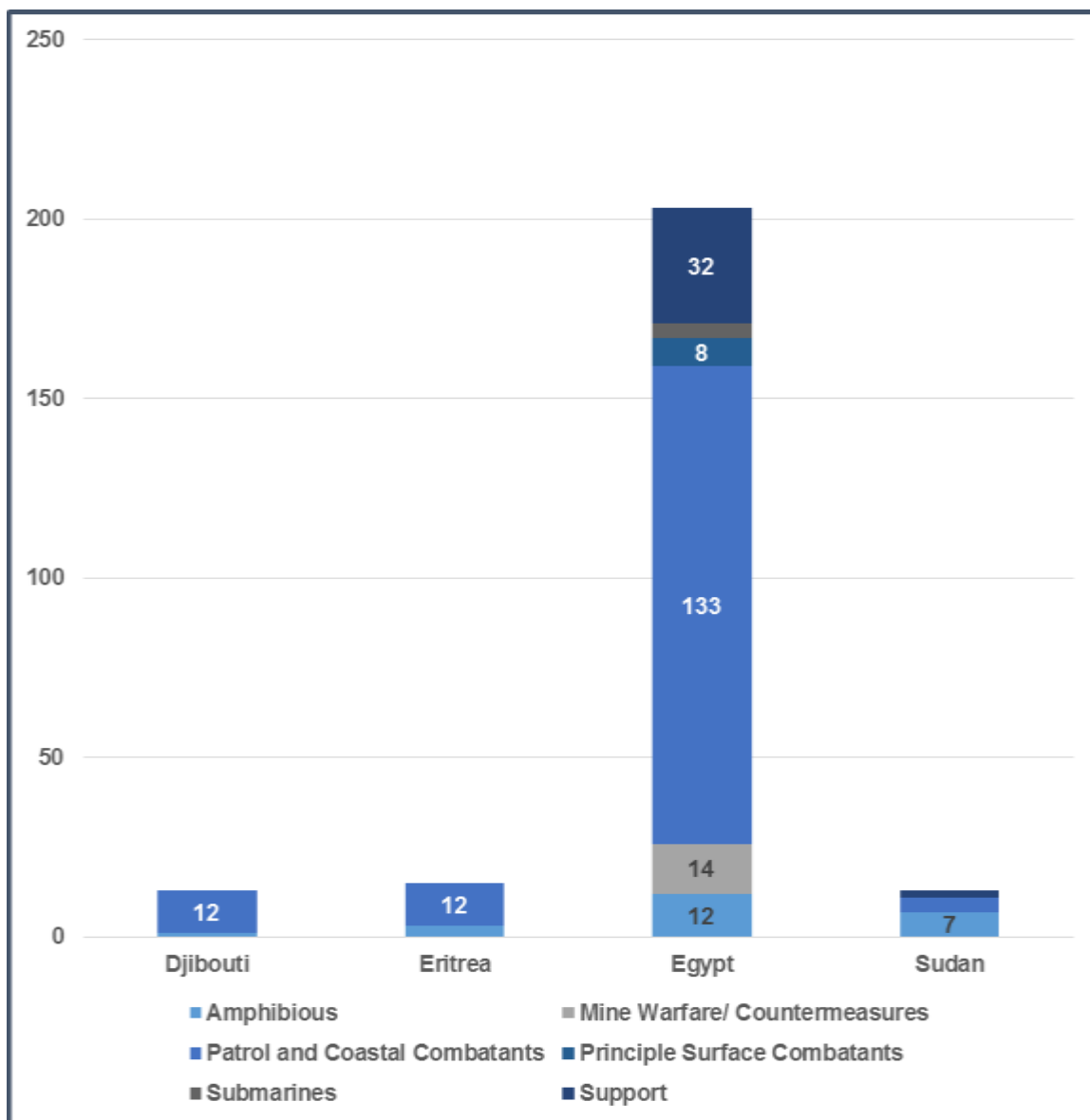
Source: Adapted from IISS, *The Military Balance 2014*, “Chapter 9: Sub-Saharan Africa,” and “Chapter 7: Middle East and North Africa. Data for Somalia was negligible due to a lack of existing central government.

Figure V.1: Djibouti, Eritrea, Egypt & Sudan: Part Three- Ground Forces Equipment

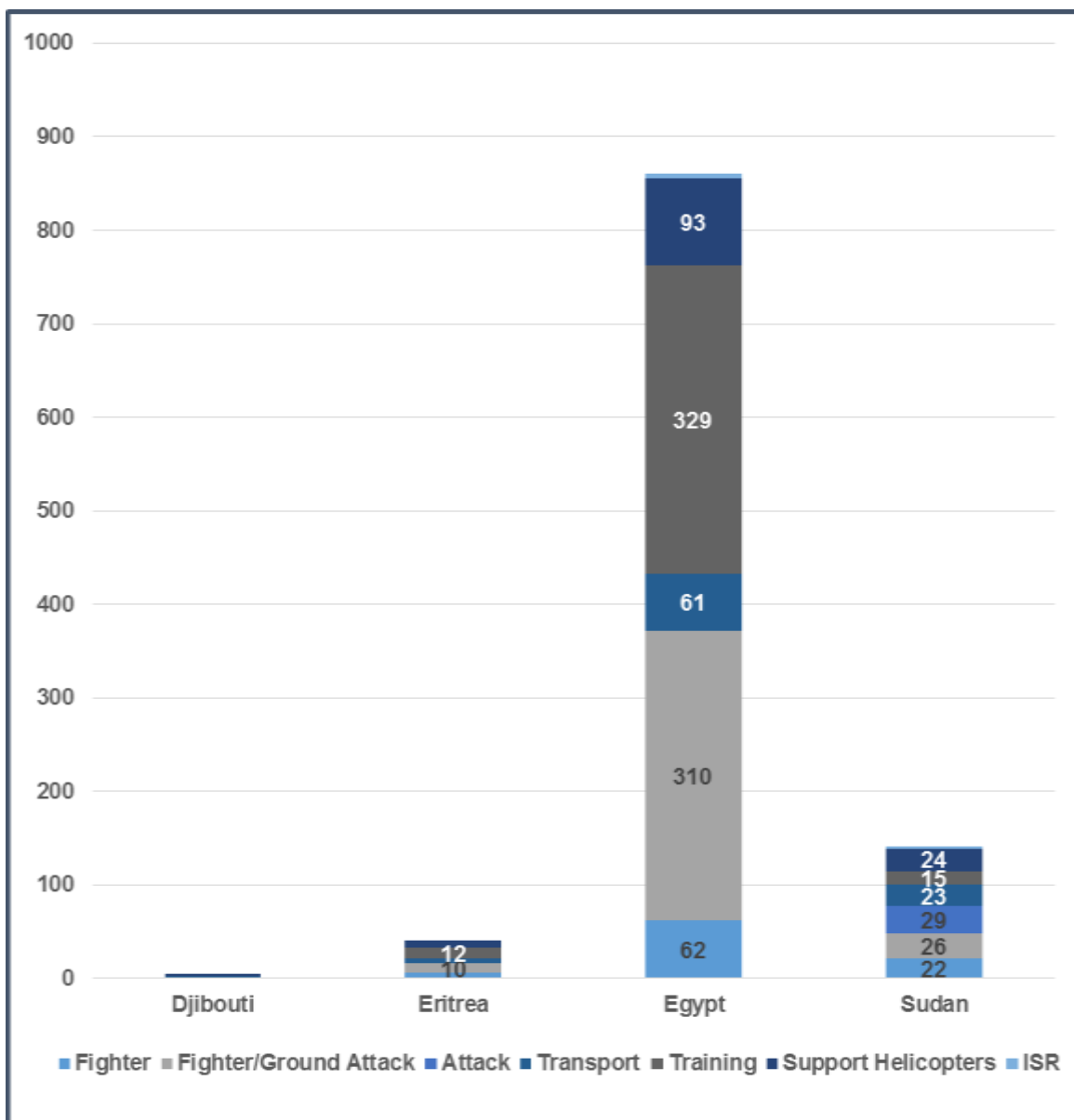


Source: Adapted from IISS, *The Military Balance 2014*, “Chapter 9: Sub-Saharan Africa,” and “Chapter 7: Middle East and North Africa. Data for Somalia was negligible due to a lack of existing central government.

Figure V.1: Djibouti, Eritrea, Egypt & Sudan: Part Four- Naval Equipment



Source: Adapted from IISS, *The Military Balance 2014*, “Chapter 9: Sub-Saharan Africa,” and “Chapter 7: Middle East and North Africa. Data for Somalia was negligible due to a lack of existing central government.

Figure V.1: Djibouti, Eritrea, Egypt & Sudan: Part Five- Air Force Equipment

Source: Adapted from IISS, *The Military Balance 4* “Chapter 9: Sub-Saharan Africa,” and “Chapter 7: Middle East and North Africa. Data for Somalia was negligible due to a lack of existing central government.

Egyptian Security, Stability, the Suez Canal and Sumed Pipeline

Egypt faces major problems in establishing any form of lasting political stability and economic development, and may well go through years of internal tension and conflict between its military and more secular political forces and the Moslem brotherhood and Salafi Islamist elements. These problems will be exacerbated by severe demographic pressures, an inefficient state sector and continuing state barriers to economic growth, and history of crony capitalism, corruption, and growing inequality in economic distribution that benefit the wealthy and supporters of the regime.

The World Bank ranked Egypt at 110th place out of 183 economies in the world in ease of doing business in 2012. It was especially poor in the speed of granting construction permits, enforcing contracts and resolving insolvency.²⁰⁹ The failure to create meaningful jobs and economic opportunity even for university-educated youth is also particularly serious.

The Egyptian military is very strong for a country with Egypt's economic resources, largely because of a steady flow of over \$1.3 billion a year of US military aid. It also does not face any meaningful external threats. The IISS reports that Egypt has over 438,000 actives in its military and another 397,000 paramilitary forces. It has well equipped armored forces with roughly 2,500 tanks (including 1,087 modern M-1A1s), roughly 4,000 other armored vehicles, 4,500 artillery weapons.²¹⁰

Its navy is by far the largest in the region and has Rome-class submarines, 8 missile frigates, 2 missile corvettes, 11 missile patrol boats, numerous other patrol boats and craft, extensive amphibious forces and 14 mine craft. Its air force has some 590 combat aircraft, including 177 F-16s, 35 AH-64Ds, and modern AEW, IS&R and ELINT aircraft. It also has extensive surface-to-air missile forces, including large numbers of IHAWKs.

Egypt's peace with Israel is a "cold peace," but one of great strategic benefit to both countries, supported by the leaders of the Egypt military which are now once again the de facto leaders of the state. At this time it would take a massive political upheaval to make Egypt turn back towards military confrontation. If anything, Egypt and Israel share a common interest in securing the Sinai and Gaza, and the eastern approaches to the Suez Canal and Gulf of Aqaba –the latter strategic interest is also shared by Jordan and Saudi Arabia.

There is no way to predict Egypt's political future, although the military coup that drove Morsi and the Moslem Brotherhood from power seems to be strong enough and popular enough to endure for the near term and produce an election and president approved by the commander in chief, General Abdel Fattah el-Sisi – who may well become the next President. The key question will be whether the military confronts an increasingly violent opposition from the elements of the Moslem Brotherhood that have survived an ongoing effort at repression and whether Salafist elements turn to violence and terrorism.

The military seem to have the strength to win such a struggle in the near term, but could face major problem if living conditions and the economy continue to deteriorate and the military loses the support of more secular Egyptians as well as Islamists. The military are also systematically suppressing any Muslim clerical opposition, and trying to enforce a new orthodoxy that will support the military and oppose both the Brotherhood and more extreme Islamist elements. What the military has not done is show it can stabilize – much less develop – the economy and create effective jobs in a society where direct and disguised unemployment affect some 30-40% of Egypt's youth.

The CIA described Egypt's economic situation as follows before Kuwait, Saudi Arabia, and the UAE granted Egypt some \$12 billion in aid following the military overthrow of the Morsi government in July 2013.:²¹¹

After unrest erupted in January 2011, the Egyptian Government backtracked on economic reforms, drastically increasing social spending to address public dissatisfaction, but political uncertainty at the same time caused economic growth to slow significantly, reducing the government's revenues. Tourism, manufacturing, and construction were among the hardest hit sectors of the Egyptian economy, and economic growth is likely to remain slow during the next several years. The government drew down foreign exchange reserves by more than 50% in 2011 and 2012 to support the Egyptian pound and the dearth of foreign financial assistance - as a result of unsuccessful negotiations with the International Monetary Fund over a multi-billion dollar loan agreement which have dragged on more than 20 months - could precipitate fiscal and balance of payments crises in 2013.

The security of the Sinai also presents growing problems. The Arab Bedouin population has long felt that government discriminated against it and did not develop the region. There has been a significant infiltration of Islamist extremists, which began to emerge as a serious threat to tourism during Morsi's time in office. This led to a series of attack on the Egyptian military a security posts beginning in the spring of 2013, and the Egyptian military began a serious security campaign in late August 2013 that still continues.²¹²

This problem is sufficiently serious so that the United State has made this one of the areas where it continues military aid – although it began to suspend major weapons deliveries in the summer of 2013 in an effort to push the Egyptian army towards a less repressive and violent suppression of its opposition and back towards some form of democracy. In this case the US has limited leverage. A combination of Saudi Arabia, the UAE, and Kuwait have provided Egypt with \$12 billion in aid to help it through its economic crisis, and Egypt has little real military need for the weapons deliveries – more F-16s and AH-64s – that the US has suspended.

One key issue is the security of the Suez Canal and its eastern approaches. The Egyptian military have had to tighten security along the Canal. In addition to attacking tourist sites in the Red Sea, Jihadist elements have fired rockets at ships near and in the canal. At least 55 ships a day transit the 193 mile-long Canal – or some 8% of world maritime trade -- and there were several incidents where ships like the 10,062-TEU *Cosco Asia* container ship were fired upon from August 2013 onwards.²¹³

The military have deployed more forces in the area, created some 20 new security posts in villages near the Canal, are seeking to create security zone on either side, and seem to be considering some form of “fence” or barrier system similar to the one's Israel is creating in the Sinai and Saudi Arabia is creating along its border with Iraq and Yemen. It also has stepped up security for the SUMED pipeline, the link between Egypt's ports of Ain Sukhna on the Red Sea and Sidi Kerir on the Mediterranean. These handled 3.8 million barrels a day of crude and products in 2011, according the International Energy Agency.²¹⁴

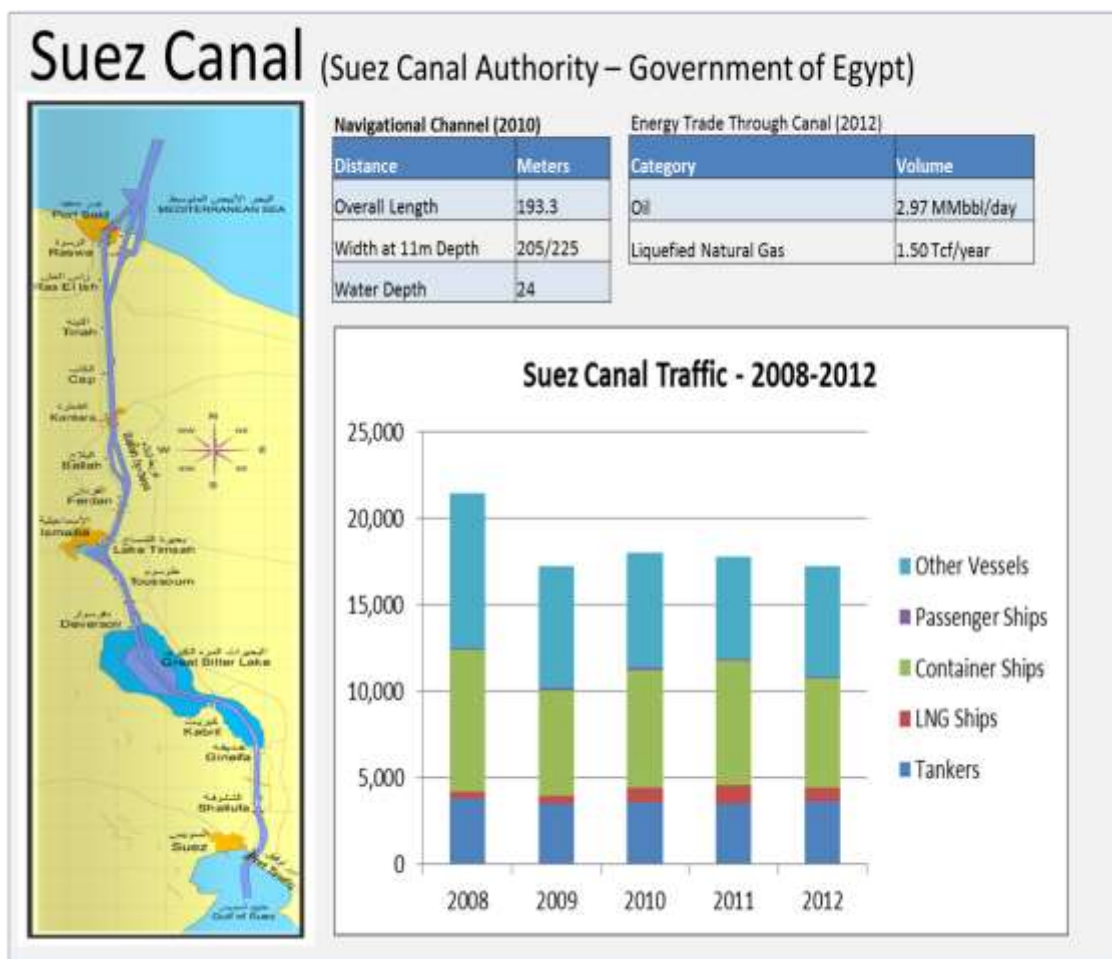
Egypt also seems committed to the projects to expand the infrastructure around the Canal that began under President Morsi. Some Egyptian estimates claim that the Canal already has approximately \$1.6 trillion worth of goods a year pass through it, or 10 percent of the world's total value of shipped goods, but these estimates seem somewhat exaggerated. Other reports indicate that the number of container ships crossing the Suez Canal fell 12 percent to 6,332 in 2012, according to the waterway's authority. A total of 17,225 ships of all types traveled the link between the Mediterranean Sea and the Gulf of Suez.²¹⁵

If Egypt is stable enough to fully implement and secure its expansion efforts, and continue its efforts to beyond simply having the Canal be a transit route and develop the new industrial and port complex at the northern end of the canal near Port Said, and a second at the southern end.²¹⁶ The Canal is already a more attractive shipping route than the Panama Canal because it has been broadened to the point where ships can transit carryings as many as 9,000 20-foot boxes, instead of using two ships to carry 4,500-box-vessels through Panama Canal.²¹⁷

The Suez Canal Authority reports that the canal is already large enough for 63% of world tankers, 96.8% of bulk carriers, and 100% of container ships to transit. **Figure V.2** shows the volume by type of shipping that moves through the Suez Canal. The Canal Authority is carrying out a project to increase the depth of western channels of the Suez Canal from 48ft to 52 ft. This project will allow giant containerships heading south to pass through these channels and reduce their total transit time. Another project is to improve and widen the anchorage areas in Great Bitter Lake and construct emergency garages at the tips of western channels to be used by giant ships. These projects are executed by the Suez Canal fleet of dredgers.

The Suez Canal Authority is conducting feasibility studies to improve services offered to its customers and to attract more ships. These studies include:²¹⁸

- Increase the depth of current bypasses, dredging new bypasses to increase the doubled parts of Suez Canal to increase the capacity of Suez Canal and reduce transit time.
- Different scenarios for future plans either by increasing the allowed draft of ships or doubling Suez Canal are being studied to evaluate the feasibility of these projects.

Figure V.2: Suez Canal Traffic: 2008-2012

Source: Robert M. Shelala II, "Maritime Security in the Middle East and North Africa: A Strategic Assessment," Center for Strategic and International Studies, <https://csis.org/publication/maritime-security-middle-east-and-north-africa-strategic-assessment>.

There presently seems to be only limited risk that Egypt's instability will lead to either serious problems in the region or a lasting threat to the Suez Canal and SUMED pipeline, but this risk cannot be dismissed. It is also important to note that every state in the southern edge of the Red Sea area is unstable, and that some form of extremist attack on shipping is always possible.

The threat on mines also must be considered. Libya used a ferry to plant Russian M-08 mines in the Red Sea in 1984 and created a short-term risk premium for transit in the area which led the UK to send mine sweepers and the US to deploy anti-mine helicopters.²¹⁹

If an extremist group could obtain smart mines – that can be programmed to attack given classes and types of ship from the bottom at fixed intervals – this could seriously disrupt maritime traffic. Some experts believe the IDF is concerned that Hamas or other extremists have considered such options, and others that Iran has examined such scenarios. The Egyptian Navy is the only force in the region with meaningful minesweeping capability, and its ability to detect and remove smart

mines is uncertain. It is also possible that such a threat could acquire some form of anti-ship missile.

Somalia: Extremism and Piracy

Somalia has been an unstable mess since the fall of its dictator its dictator Mohammed Said Barre in 1991. For most of the intervening decades, Somalia did not possess a functional government capable of presiding over the whole of the country, and Somalia has ranked at the top of the Fund For Peace's Failed States Index every year since 2007, and within the top 10 most failed states for every year since the index was first published in 2005.²²⁰

International organizations consistently rank Somalia as one of the highest risk countries in the world. The World Bank ranks Somalia as having nearly zero capability --- in a range of zero to 100 -- in each of its worldwide governance indicators: Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption.²²¹ Transparency International ranks it 175th out of 177 countries in terms of corruption -- making it the third most corrupt country in the World.²²² The World Bank ranks it 149th out of 189 countries in terms of the ease of doing business.²²³ Somalia has so little structure, that the UN development program cannot assess just how poorly it ranks in terms of most indices in the UN's human development index,²²⁴ Amnesty International ranks Somalia as having some of the worst human right performance in the world.²²⁵ Human Rights Watch provides a similar country analysis.²²⁶

The CIA calculates Somalia's GDP at \$5.8 billion (based almost entirely on the informal economy that survives amidst the country's internal lawlessness), and GDP per capita at \$600, ranking 224th in the world.²²⁷ The CIA describes Somalia's situation as follows:²²⁸

After the regime's collapse early in 1991, Somalia descended into turmoil, factional fighting, and anarchy. In May 1991, northern clans declared an independent Republic of Somaliland that now includes the administrative regions of Awdal, Woqooyi Galbeed, Togdheer, Sanaag, and Sool. Although not recognized by any government, this entity has maintained a stable existence and continues efforts to establish a constitutional democracy, including holding municipal, parliamentary, and presidential elections.

The regions of Bari, Nugaal, and northern Mudug comprise a neighboring semi-autonomous state of Puntland, which has been self-governing since 1998 but does not aim at independence; it has also made strides toward reconstructing a legitimate, representative government but has suffered some civil strife. Puntland disputes its border with Somaliland as it also claims portions of eastern Sool and Sanaag.

Beginning in 1993, a two-year UN humanitarian effort (primarily in the south) was able to alleviate famine conditions, but when the UN withdrew in 1995, having suffered significant casualties, order still had not been restored. In 2000, the Somalia National Peace Conference (SNPC) held in Djibouti resulted in the formation of an interim government, known as the Transitional National Government (TNG).

When the TNG failed to establish adequate security or governing institutions, the Government of Kenya, under the auspices of the Intergovernmental Authority on Development (IGAD), led a subsequent peace process that concluded in October 2004 with the election of Abdullahi YUSUF Ahmed as President of a second interim government, known as the Transitional Federal Government (TFG) of the Somali Republic. The TFG included a 275-member parliamentary body, known as the Transitional Federal Parliament (TFP). President YUSUF resigned late in 2008 while United Nations-sponsored talks between the TFG and the opposition Alliance for the Re-Liberation of Somalia (ARS) were underway in Djibouti.

In January 2009, following the creation of a TFG-ARS unity government, Ethiopian military forces, which had entered Somalia in December 2006 to support the TFG in the face of advances by the opposition Islamic Courts Union (ICU), withdrew from the country. The TFP was doubled in size to 550 seats with the addition

of 200 ARS and 75 civil society members of parliament. The expanded parliament elected Sheikh SHARIF Sheikh Ahmed, the former ICU and ARS chairman as president in January 2009. The creation of the TFG was based on the Transitional Federal Charter (TFC), which outlined a five-year mandate leading to the establishment of a new Somali constitution and a transition to a representative government following national elections. In 2009, the TFP amended the TFC to extend TFG's mandate until 2011 and in 2011

Somali principals agreed to institute political transition by August 2012. The transition process ended in September 2012 when clan elders appointed 275 members to a new parliament replacing the TFP and the subsequent election, by parliament, of a new president.

These shifts in the formal power structure have not prevented the creation of tribal and local faction, the rise and fall of local warlords, the creation of a massive refugee and IDP population, and the rise of Islamic extremist groups like al-Shabaab– a movement affiliated with AQAP in Yemen.

Somalia has had continuing tensions with Ethiopia since the 1960s, and presents a growing problem to Kenya because of the flow of refugees and tensions between al-Shabaab and Kenya over Kenya's efforts to empower Somalia's formal government and complete the defeat Al Shabah – which was driven out of the capital in 2011. The CIA notes that,²²⁹

Ethiopian forces invaded southern Somalia and routed Islamist Courts from Mogadishu in January 2007; "Somaliland" secessionists provide port facilities in Berbera to landlocked Ethiopia and have established commercial ties with other regional states; "Puntland" and "Somaliland" "governments" seek international support in their secessionist aspirations and overlapping border claims; the undemarcated former British administrative line has little meaning as a political separation to rival clans within Ethiopia's Ogaden and southern Somalia's Oromo region; Kenya works hard to prevent the clan and militia fighting in Somalia from spreading south across the border, which has long been open to nomadic pastoralists

It has a slowly modernizing subsistence economy in spite of its constant turmoil, but part of the country are deeply impoverished and its per capita income is only around \$600 and ranks among the lowest in the world.

Somalia as A Center of Terrorism and Extremism

Somalia has no strategic importance aside from the fact it is a source of violent Islamist extremism that does affect neighboring states and its poverty has been a source of piracy. The US State Department issued the following assessment of Somalia's role in terrorism in May 2013:²³⁰

Building upon the February 2011 offensive that began the liberation of Mogadishu from al-Shabaab, 2012 marked another year of progress for Somalia. The Transitional Federal Government (TFG) and its successor, the Federal Government of Somalia (elected indirectly in September) – with the assistance of the AU Mission in Somalia (AMISOM), led by Uganda and Burundi, as well as Ethiopian and allied Somali militia forces – secured areas neighboring Mogadishu and drove al-Shabaab from many cities and towns in south-central Somalia. Most notably, Kenyan forces gained primary control of the financial hub and port city of Kismayo on September 28.

Al-Shabaab continued to control large sections of rural areas in the middle and lower Juba regions, as well as Bay and Bakol regions, and augmented its presence in northern Somalia along the Golis Mountains and within Puntland's larger urban areas. Areas under al-Shabaab control provided a permissive environment for the group to train operatives, including foreign fighters, and plot attacks. The ability of Somali federal, local, and regional authorities to prevent and preempt al-Shabaab terrorist attacks remained limited.

International terrorists remained in Somalia and continued to mount operations within Somalia and in neighboring countries, particularly Kenya. Al-Shabaab suffered from internal leadership disputes while Ahmed Abdi aw-Mohamed struggled to maintain control over the group's factions. On September 23, Hisbul Islam (HI) announced its split from al-Shabaab; HI is a violent Islamist extremist movement headed by Sheikh Hassan Dahir Aweys, who joined al-Shabaab and became a "spiritual advisor" in December 2010.

The TFG, partnering with Somali regional state and administration leaders in Puntland, Galmudug, and Ahlu Sunnah Wal Jamaa, established permanent governmental institutions during the year, marking the end of an eight-year transitional period of governance. This included finalizing a provisional federal constitution, forming an 825-member National Constituent Assembly that ratified the provisional constitution, selecting a 275-member federal parliament, and holding speakership and presidential elections. On September 10, parliament elected Hassan Sheikh Mohamud as president of the Federal Republic of Somalia. Neither the TFG nor the newly-established Government of Somalia had effective control over some parts of the country outside Mogadishu. Regional administrations, including Somaliland in the northwest and Puntland in the northeast, provided essential governance functions in those areas.

...In 2012, al-Shabaab and other violent extremists conducted suicide attacks, remote-controlled roadside bombings, kidnappings, and assassinations of government officials, journalists, humanitarian workers, and civil society leaders throughout Somalia. Many killings were beheadings, stonings, or other horrific public events designed to instill fear and obedience in communities. Other al-Shabaab attacks targeted government and foreign convoys. For example, on December 14, al-Shabaab attacked an AMISOM convoy with a car bomb in Mogadishu, which an al-Shabaab spokesman claimed was an attempt to target individuals they believed were American.

Al-Shabaab also conducted several attacks against Puntland security forces and their outposts on the foothills of the Golis Mountains, which run along the Puntland-Somaliland border, to include skirmishes in December which left over 30 dead or wounded.

The TFG (through August) and the Government of Somalia (from September on), along with regional governments, continued to pursue al-Shabaab suspects throughout the year. In partnership with AMISOM and neighbors, the government conducted a successful military campaign against al-Shabaab strongholds in southern and central Somalia, capturing al-Shabaab strongholds of Baidoa, Afgoye, Afmadow, Balad, Lanta Buuro, Merca, Miido, Wanla Weyn, and Jowhar. Their most significant victory was the September 28 capture of the port-city of Kismayo, which al-Shabaab had used as a primary source of revenue through extortion activities and charging of duties, in particular on the export of charcoal.

The Puntland regional government stepped up its security campaign against al-Shabaab encouraging citizens to report any actions they believed could lead to insecurity or may be linked to or assist al-Shabaab. On July 21, for example, Puntland security forces arrested 53 people suspected of links with either al-Shabaab or piracy. Puntland forces also engaged in a number of skirmishes with al-Shabaab militants along the outskirts of the Golis Mountains – al-Shabaab’s hideout in northern Somalia – leaving at least nine dead on March 3, and 31 dead and wounded on December 5, according to Puntland government authorities and Somali media.

The TFG (through August), the Government of Somalia (from September on), and regional governments cooperated with U.S. law enforcement on numerous occasions, including investigations concerning suspected terrorists, kidnapping, and other acts of terrorism committed inside and outside Somalia.

Somalia’s central government does not have a system or mechanism for freezing terrorist assets. In 2012, no government entities were capable of tracking, seizing, or freezing illegal assets. There is no mechanism for distributing information from the government to financial institutions (principally remitters or *hawalas*). Many institutions operating in Somalia have international offices, however, and those that do adhere to minimum international standards, including freezes on terrorist entities’ finances. Many money remittance companies based abroad, for example, use electronic anti-money laundering systems which flag names listed on the UN 1267/1989 and 1988 Sanctions Committees’ consolidated list. Somalia does not have any mechanisms in place under which to share information related to terrorist financing with the United States or other countries. The Government of Somalia has committed to public financial management and was in the process of drafting new banking laws at year’s end.

The Somali government called on regional governments to help stem the flow of terrorist financing, requesting that local governments trace, freeze, and seize al-Shabaab-related finances. The government also requested governments to assist in the enforcement of a long-standing national ban on charcoal exports, which have been used to finance al-Shabaab activities. This request resulted in the UNSC banning the import and export of Somali charcoal in UNSCR 2036 (2012).

...The Somali government has increasingly become more adept at proactively countering al-Shabaab’s violent extremist messaging. Examples of successful counter-messaging included the Countering Violent

Extremism programs on Radio Mogadishu and the state-owned TV station. In 2010, the TFG's Ministry of Information and Telecommunications began airing the Islamic Lecture Series (ILS) in Mogadishu, a program which has since expanded to include former al-Shabaab strongholds Baidoa, Beledweyne, Dhusamareb, and Abudwaq. ILS is a one-hour, call-in radio program designed to undercut al-Shabaab's efforts to acquire religious legitimacy for its violent extremist ideology.

Somalia and Piracy

Virtually all of the piracy in the Red Sea and the Horn is the result of actions by Somali pirates. **Figure V.3 to Figure V.5** show the level of piracy in the region – statistic that are treated in more depth later in sections on East Asia and Oceania Sub-region. It is clear from these figures that international action has halted and reversed the rise of Somali piracy, but scarcely eliminated it.

In an update through the end of 2012, the International Maritime Bureau noted that 75 incidents had taken place in the Gulf and Aden and Red Sea in 2012 by Somali pirate, that the use of weapons was far more common than in the low levels of piracy in South Asia or in the relatively high levels of maritime crime in Indonesia and near the Strait of Malacca. Somalis increasingly used high-jacked fishing vessels to go further offshore and range deeper into the Indian Ocean and ranged as far as the IOR areas off Kenya, Tanzania, Madagascar, Mozambique, and West and South India.

At the end of 2012, pirates had killed 2, injured one, and taken 250 hostage during the year in some 62 attacks – 49 in the Arabian Sea and 13 in the Gulf of Aden. Pirates still held eight vessels and 104 crew for ransom.²³¹ As of the end of August, the IMB and ICC Commercial Crime Series had reported 10 more major incidents, including two hijackings and that 57 hostages were still held by Somali pirates.²³²

incidents, including two hijackings and that 57 hostages were still held by Somali pirates.²³³

This did represent a significant decline in successful piracy. As the *Economist* noted in May 2013,²³⁴

Though the spoils are rising, pirate attacks have been falling off. Just 75 attacks took place in the Gulf of Aden and off the coast of Somalia in 2012, down from more than 200 in 2011. Currently, 71 sailors are being held hostage by pirates, according to the International Maritime Bureau, a body that monitors crime at sea; in early 2011, the figure was 758. Estimates for how much Somali piracy has cost the world economy range from \$7 billion to \$18 billion, the latest estimate by the World Bank. One theory is that the pirates have spent the past few months stock-taking, clearing their stock of hostages and ships before restarting their campaign. Another possibility is that their business model is shifting towards kidnapping foreign aid-workers and tourists on land.

But the main reason for the drop in maritime hijackings seems to be that ships are now far better defended against attacks. Armed guards, now carried by more than 60% of vessels, have been essential in discouraging them. Pirates are playing it safe by first scouting for guards, whereas previously they opened fire to intimidate crews; seeing arms on board is a big deterrent. Higher cruising speeds in pirate-infested zones and rerouting also have helped, as have razor wire, high-pressure hoses and citadels—secure spaces on ships from which crews can call for reinforcements. (This makes it easier to come to the aid of ships under attack, because pirates can no longer use seafarers as human shields.) Navies patrolling the area, from EU task-forces to private motherships, are also co-operating better and acting more aggressively.

All these gains are “fragile and reversible”, says Jon Huggins, director of Oceans Beyond Piracy, an American NGO. The EU and NATO navy mandates expire at the end of 2014. Defensive measures, particularly higher speeds and armed guards, are expensive. Suppression at sea needs to be combined with better onshore government and deterrence, both sorely lacking. Kenya and the Seychelles have worked hard to drive pirates out or into prisons; yet war-torn Somalia is still an ideal cover. Mr. Huggins warns that the pirate gangs are still intact and are waiting for their next opportunity. Their activities usually wane from May to September during the rough seas of the monsoon season, but they could still stage an autumn comeback.

Pirates did stage a limited comeback in 2013, and it seems unlikely that the problem will end as long as Somalia lacks as stability and security, the only employment for many young men is violence, and piracy offers far higher rewards – as well as far less serious personal risks – than fighting on land. The fact remains, however, that forces like CTF-151, the NATO Operation Ocean Shield, and the EU's Operation Atalanta have been able to reduce it to levels that have only a marginal impact on maritime costs and that amount to a limited risk in the Red Sea and Horn Subregion.

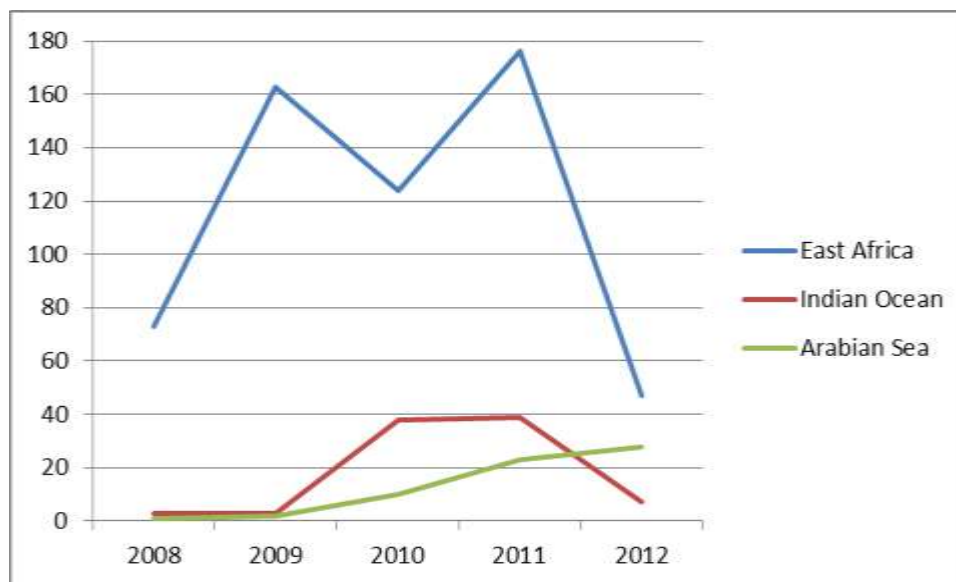
Figure V.3 Trends in Piracy in the Red Sea, Horn, and East Africa: NATO Ocean Shield Estimate

		2008	2009	2010	2011	2012
Somali Basin	hijacks	8	26	26	4	2
	attacks	11	58	68	52	7
	disruptions	N/A	15	88	52	19
Gulf of Aden (incl. IRTC)	hijacks	33	18	12	1	1
	attacks	42	67	33	29	6
	disruptions	N/A	47	56	21	6
Arabian Sea	hijacks	N/A	1	7	19	5
	attacks	N/A	5	31	48	10
	disruptions	N/A	N/A	3	23	15

Note: In January 2013 there were no attacks, approaches or disruptions in the area. In comparison, in January 2012 there were four pirate attacks all of which were unsuccessful and 80 suspected pirates were captured by counter piracy forces of which 59 were captured by NATO ships. In January 2011 there were 29 attacks and six ships were pirated.

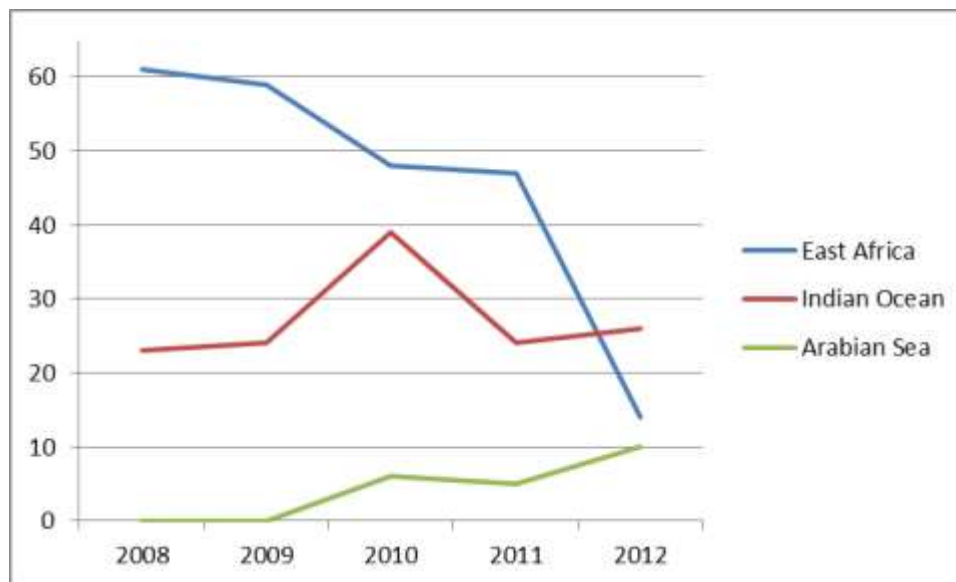
Source: Operation Ocean Shield Factsheet, NATO, <http://www.mc.nato.int/ops/Pages/OOS.aspx>, and <http://www.mc.nato.int/about/Pages/Operation%20Ocean%20Shield.aspx>.

Figure V.4: Trends in Piracy in East Africa, the Indian Ocean, and the Arabian Sea: Part I- Attempted Piracy Incidents



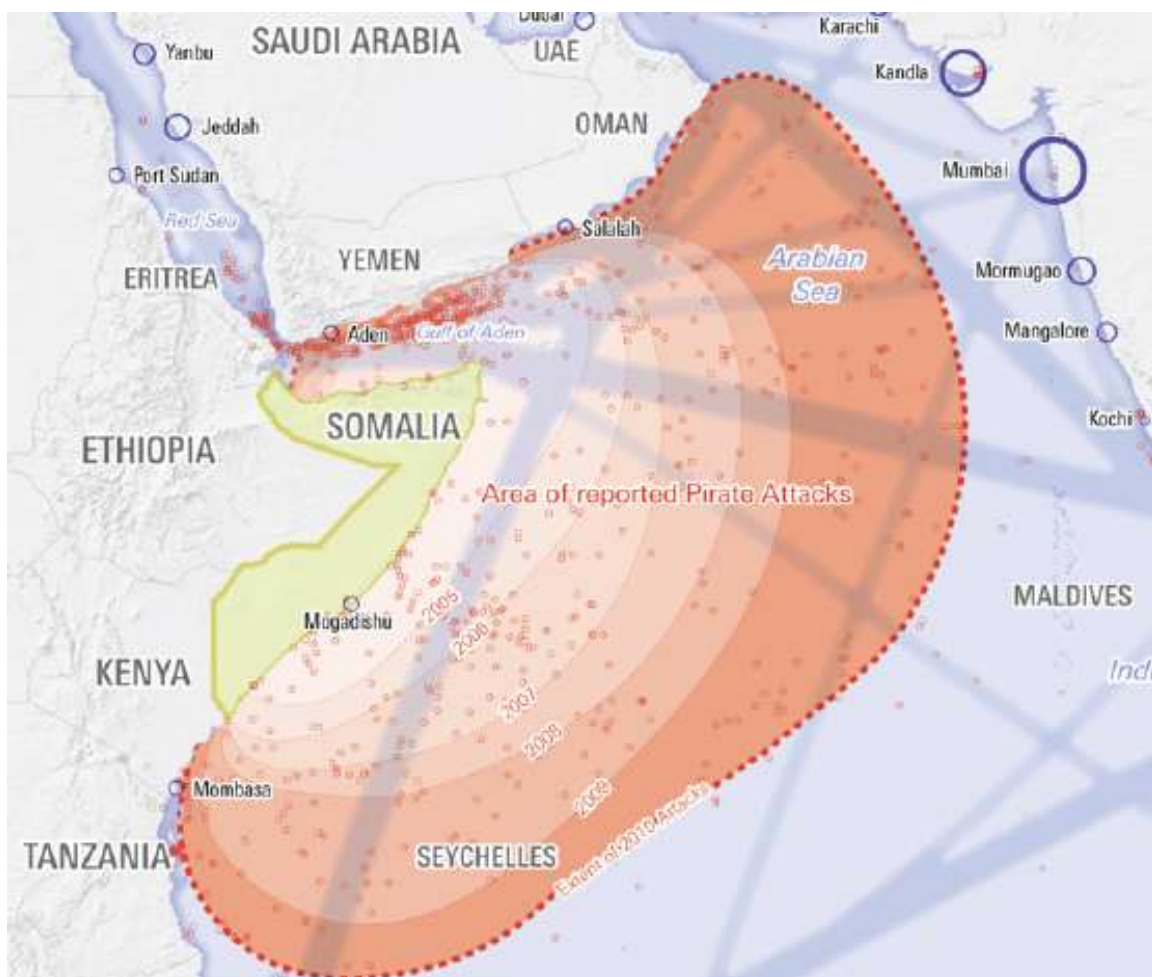
Source: Robert M. Shelala II, "Maritime Security in the Middle East and North Africa: A Strategic Assessment," Center for Strategic and International Studies, <https://csis.org/publication/maritime-security-middle-east-and-north-africa-strategic-assessment>.

Figure V.4 Trends in Piracy in East Africa, the Indian Ocean, and the Arabian Sea: Part II- Committed Piracy Incidents



Source: Robert M. Shelala II, "Maritime Security in the Middle East and North Africa: A Strategic Assessment," Center for Strategic and International Studies, <https://csis.org/publication/maritime-security-middle-east-and-north-africa-strategic-assessment>.

Figure V.5: Trends in Piracy in the Red Sea, Horn, and East Africa - Annual Expansion of Zones of Piracy: 2005-2010



Source: Wikipedia, Somali Piracy Threat Map 2010.png,

Djibouti: A Key Base for US and French Forces

Djibouti is a small Red Sea states whose strategic location and ties to France and the US give it special strategic importance. Djibouti has suffered in the past from some internal tribal tensions and remains deeply poor, but is relatively stable. Nonetheless, its global development rankings have consistently been low. According to Transparency International Djibouti ranks 94th out of 177 countries in corruption, 165th out of 187 in the Human Development Index, and 159 out of 179 for press freedom.²³⁵

In 2014 The World Bank ranked Djibouti 160th out of 182 on its *Ease of Doing Business* scale, an increase of 12 points from 172 in 2013. Yet, in areas such as “getting credit” and “protecting investors” Djibouti remains in the bottom three globally.²³⁶

The CIA calculates the population at approximately 792,000 people, 77% of whom live in Djibouti City’s urban area and 56% of whom are under the age of 24. GDP is currently \$2.3 billion, 187th in the world, and GDP per capita is \$2,600, 180th in the world. The CIA summarized its situation as follows in January 2014:²³⁷

The French Territory of the Afars and the Issas became Djibouti in 1977. Hassan Gouled APTIDON installed an authoritarian one-party state and proceeded to serve as president until 1999. Unrest among the Afar minority during the 1990s led to a civil war that ended in 2001 with a peace accord between Afar rebels and the Somali Issa-dominated government. I

n 1999, Djibouti's first multiparty presidential elections resulted in the election of Ismail Omar GUELLEH as president; he was reelected to a second term in 2005 and extended his tenure in office via a constitutional amendment, which allowed him to begin a third term in 2011.

Djibouti occupies a strategic geographic location at the intersection of the Red Sea and the Gulf of Aden and serves as an important shipping portal for goods entering and leaving the east African highlands and transshipments between Europe, the Middle East, and Asia. The government holds longstanding ties to France, which maintains a significant military presence in the country, and has strong ties with the United States. Djibouti hosts several thousand members of US armed services at US-run Camp Lemonnier.

....Djibouti's economy is based on service activities connected with the country's strategic location and status as a free trade zone in the Horn of Africa. Three-fourths of Djibouti's inhabitants live in the capital city; the remainder are mostly nomadic herders. Scant rainfall limits crop production to small quantities of fruits and vegetables, and most food must be imported. Djibouti provides services as both a transit port for the region and an international transshipment and refueling center.

Imports, exports, and re-exports - primarily of coffee from landlocked neighbor Ethiopia - represent 70% of port activity at Djibouti's container terminal. Djibouti has few natural resources and little industry. The nation is, therefore, heavily dependent on foreign assistance to help support its balance of payments and to finance development projects. An unemployment rate of nearly 60% continues to be a major problem. While inflation is not a concern, due to the fixed tie of the Djiboutian franc to the US dollar, the artificially high value of the Djiboutian franc adversely affects Djibouti's balance of payments. Djibouti holds foreign reserves amounting to less than six months of import coverage.

Per capita consumption dropped an estimated 35% between 1999 and 2006 because of recession, civil war, and a high population growth rate (including immigrants and refugees). Djibouti has experienced relatively minimal impact from the global economic downturn, but its reliance on diesel-generated electricity and imported food leave average consumers vulnerable to global price shocks. Djibouti in 2012 began construction of a third port to secure its position as a critical transshipment hub in the Horn of Africa and the principal conduit for Ethiopia's trade. Djibouti also received funding in late 2012 for a desalination plant to begin address the severe freshwater shortage affecting Djibouti City, and particularly its poorest residents.

Djibouti is the site of a former major French naval and air base which is still a major French facility and where the US has been granted extensive facilities. Djibouti hosts a U.S. military presence at

Camp Lemonnier, a former French Foreign Legion base in the capital, and serves as the primary base of operations for U.S. Africa Command in the Horn of Africa.²³⁸

Djibouti has allowed the U.S. military, as well as other militaries with presences in Djibouti, access to its port facilities and airport. It has extensive facilities for counterterrorism operation and has served in the past as a key base for US UCAV operations. Djibouti could serve as a naval base for both US and French operation – as well as CTF 130 operations – in securing the Red Sea and operations in the Gulf of Oman. It is also thought to be a base for special operations forces and intelligence units conducting operations against al Shabaab in Somalia.

The US State Department assesses its current political and economic stability as follows:²³⁹

Djibouti has had two presidents -- Hassan Gouled Aptidon, was first elected in 1977 and ruled for 22 years until the current president, Ismail Omar Guelleh, was elected in 1999. The country had a single legal party from 1981 to 1992. Additional political parties became legal and formed beginning in 1992. The country's nearly decade-long internal conflict between the government and a rebel group officially ended in 2001.

... Djibouti's economic growth is hindered by a rapidly expanding workforce that is poorly matched to the economic needs of the country, resulting in high unemployment (48%), and a lack of qualified applicants for jobs in certain sectors. Other obstacles to growth include: high electricity costs and chronic water shortages, poor health indicators, food insecurity, and governance challenges. U.S. assistance aims to help improve health and education and to promote stability, which is critical to improving Djibouti's capacity to provide basic services to its people in the long term.

Eritrea and Ethiopia: Continuing Tensions, but No IOR Threat

Relations remain tense between Eritrea and Ethiopia, but neither country seems like to present a serious threat to traffic through the Red Sea. Both countries do face serious internal development problems as well, and the end result is that neither is likely to play a major role in the stability and security of the Red Sea.

The Situation in Eritrea

Eritrea ranks in the very bottom of a variety of International indicators for economic and political development. In the World Bank's 2014 *Ease of Doing Business* report, Eritrea comes in at 184 of 185.²⁴⁰ Other assessments have similarly negative outlooks, including Transparency International's corruption report, which ranks Eritrea 160 out of 177 in its Corruption Perceptions Index, and Reporters Without Borders ranking of 179 out of 179 in its Press Freedom Index.

The CIA summarized Eritrea's somewhat dismal situation as follows in January 2014:²⁴¹

The UN established Eritrea as an autonomous region within the Ethiopian federation in 1952. Ethiopia's full annexation of Eritrea as a province 10 years later sparked a violent 30-year struggle for independence that ended in 1991 with Eritrean rebels defeating government forces. Eritreans overwhelmingly approved independence in a 1993 referendum. ISAIAS Afworki has been Eritrea's only president since independence; his rule, particularly since 2001, has been highly autocratic and repressive. His government has created a highly militarized society by pursuing an unpopular program of mandatory conscription into national service, sometimes of indefinite length.

...Since independence from Ethiopia in 1993, Eritrea has faced the economic problems of a small, poor country, facing chronic drought. These have been exacerbated by restrictive economic policies. Eritrea has a command economy under the control of the sole political party, the People's Front for Democracy and Justice (PFDJ).

Like the economies of many African nations, a large share of the population - nearly 80% - is engaged in subsistence agriculture. That sector only produces a small share of the country's total output. Since the

conclusion of the Ethiopian-Eritrea war in 2000, the government has expanded use of military and party-owned businesses to complete President ISAIAS's development agenda.

The government strictly controls the use of foreign currency by limiting access and availability. Few large private enterprises exist in Eritrea and most operate in conjunction with government partners, although recently a number of large international mining ventures have opened. Eritrea's national income also relies in part on taxes paid by members of the Diaspora.

While reliable statistics on food security are difficult to obtain, erratic rainfall and the percentage of the labor force tied up in national service continue to interfere with agricultural production and economic development. Eritrea's harvests generally cannot meet the food needs of the country without supplemental grain purchases. Copper and gold production is likely to drive economic growth over the next few years, but military spending will continue to compete with development and investment plans. Eritrea's economic future will depend on market reform and success at addressing social problems such as illiteracy and low skills.

Eritrea does have large military forces for a relatively small country – some 200,000 actives – in part because of its struggles with Ethiopia. It also has compulsory military services – which is required for university admittance. Eritrea's forces, however, are largely land forces structured and deployed for defense against Ethiopia. Its small 1,400 man Navy has 1 OSA II class missile patrol boat, four small patrol boats, and three patrol craft and two LSTs. It is not capable of operating against another Navy. It does have some modern combat aircraft but only in very small numbers: 5 MiG-29s 4 Su-27 Flankers, and one Mi-24 Hind. Its other combat aircraft are 4 MiG-23 and 3 MiG-21 – all obsolescent.

Eritrea's history in counterterrorism is poor, but it has not been a serious source of terrorist operations. Ethiopia has cooperated with the US and indirectly with friendly Arab states. The US State Department summarized its status as following in May 2013:²⁴²

The Government of Ethiopia's counterterrorism cooperation with the United States included military, intelligence, and security aspects. The Ethiopian government viewed instability in Somalia as a critical national security threat and maintained a defensive military presence along the Somali border to stem potential infiltration of violent extremists into Ethiopia.

Ethiopian military forces continued counterterrorism operations in Somalia and were instrumental in combating al-Shabaab in southern and central Somalia. Within Ethiopia's borders, the Ethiopian government successfully identified an al-Qa'ida (AQ) cell, and then arrested and convicted cell affiliates. The government remained concerned about groups such as the Ogaden National Liberation Front (ONLF), Oromo Liberation Front, and Ginbot 7, which its parliament designated as terrorist groups in 2011.

The Situation in Ethiopia

Similar to its regional neighbors, Ethiopia has a consistent record of anemic economic and political development. In 2014, it ranked 111 out of 177 in Transparency International's Global Corruption Report,²⁴³ likely contributing to its ranking of 166 out of 182 in the World Bank's 2014 *Ease of Doing Business* report. Furthermore, it ranked 174 out of 187 in the UN Human Development Index in 2012,²⁴⁴ and 127 out of 179 in the 2012 Press Freedom Index.²⁴⁵

The CIA summarized Ethiopia's situation as follows in January 2014:²⁴⁶

In 1974, a military junta, the Derg, deposed Emperor Haile SELASSIE (who had ruled since 1930) and established a socialist state. Torn by bloody coups, uprisings, wide-scale drought, and massive refugee problems, the regime was finally toppled in 1991 by a coalition of rebel forces, the Ethiopian People's Revolutionary Democratic Front (EPRDF). A constitution was adopted in 1994, and Ethiopia's first multiparty elections were held in 1995..

Ethiopia's economy is based on agriculture, which accounts for 46% of GDP and 85% of total employment. Coffee has been a major export crop. The agricultural sector suffers from poor cultivation practices and

frequent drought, but recent joint efforts by the Government of Ethiopia and donors have strengthened Ethiopia's agricultural resilience, contributing to a reduction in the number of Ethiopians threatened with starvation.

The banking, insurance, and micro-credit industries are restricted to domestic investors, but Ethiopia has attracted significant foreign investment in textiles, leather, commercial agriculture and manufacturing. Under Ethiopia's constitution, the state owns all land and provides long-term leases to the tenants; land use certificates are now being issued in some areas so that tenants have more recognizable rights to continued occupancy and hence make more concerted efforts to improve their leaseholds.

While GDP growth has remained high, per capita income is among the lowest in the world. Ethiopia's economy continues on its state-led Growth and Transformation Plan under its new leadership after Prime Minister MELE's death. The five-year economic plan has achieved high single-digit growth rates through government-led infrastructure expansion and commercial agriculture development. Ethiopia in 2013 plans to continue construction of its Grand Renaissance Dam on the Nile-the controversial multi-billion dollar effort to develop electricity for domestic consumption and export.

Ethiopia has some 138,000 actives, almost all in its army. It has no Navy and no ports. Its 3,000-man air force can strike at targets in the Red Sea and off the Somalia coast, but are not trained or armed to do so. It has 42 combat aircraft, some not operable. They include 11 Su-27s, 15 MiG21MF, 2 Su-25s, and 12 MiG-23BN, plus 20 attack helicopters, including 15 Mi-24s and 3 Mi-35s. The EAF's operational history is all against land targets, and it has morale problems. Four of its pilots defected to the G7 opposition in September 2013.²⁴⁷

A History of Tension and Border Issues

Give their mutual hostility and internal challenges, Eritrea and Ethiopia are likely to focus on regime control and border conflicts rather than the IOR area. The CIA summarized Eritrea's posture as follows in late 2013,²⁴⁸

A two-and-a-half-year border war with Ethiopia that erupted in 1998 ended under UN auspices in December 2000. The Eritrea-Ethiopia Boundary Commission (EEBC) created in April 2003 was tasked "to delimit and demarcate the colonial treaty border based on pertinent colonial treaties (1900, 1902, and 1908) and applicable international law." Eritrea for several years hosted a UN peacekeeping operation that monitored a 25 km-wide Temporary Security Zone.

The EEBC on 30 November 2007 remotely demarcated the border, assigning the town of Badme to Eritrea, despite Ethiopia's maintaining forces there from the time of the 1998-2000 war. An increasingly hostile Eritrea insisted that the UN terminate its peacekeeping mission on 31 July 2008.

Eritrea has accepted the EEBC's "virtual demarcation" decision and repeatedly called on Ethiopia to remove its troops. Ethiopia has not accepted the demarcation decision, and neither party has entered into meaningful dialogue to resolve the impasse. Eritrea is subject to several UN Security Council Resolutions (from 2009, 2011, and 2012) imposing various military and economic sanctions, in view of evidence that it has supported armed opposition groups in the region.

...Eritrea and Ethiopia agreed to abide by 2002 Ethiopia-Eritrea Boundary Commission's (EEBC) delimitation decision, but neither party responded to the revised line detailed in the November 2006 EEBC Demarcation Statement; Sudan accuses Eritrea of supporting eastern Sudanese rebel groups; in 2008 Eritrean troops moved across the border on Ras Doumera peninsula and occupied Doumera Island – an island in the Red Sea with undefined sovereignty.

It provided the following summary of Ethiopia's role in the conflict and the tensions that have followed:²⁴⁹

A border war with Eritrea late in the 1990s ended with a peace treaty in December 2000. In November 2007, the Eritrea-Ethiopia Border Commission (EEBC) issued specific coordinates as virtually demarcating the border and pronounced its work finished. Alleging that the EEBC acted beyond its mandate in issuing the

coordinates, Ethiopia has not accepted them and has not withdrawn troops from previously contested areas pronounced by the EEBC as belonging to Eritrea.

Eritrea and Ethiopia agreed to abide by the 2002 Eritrea-Ethiopia Boundary Commission's (EEBC) delimitation decision, but neither party responded to the revised line detailed in the November 2006 EEBC Demarcation Statement; the undemarcated former British administrative line has little meaning as a political separation to rival clans within Ethiopia's Ogaden and southern Somalia's Oromo region; Ethiopian forces invaded southern Somalia and routed Islamist Courts from Mogadishu in January 2007; "Somaliland" secessionists provide port facilities in Berbera and trade ties to landlocked Ethiopia; civil unrest in eastern Sudan has hampered efforts to demarcate the porous boundary with Ethiopia.

Like most reporting on the Horn, there are few prospect for security but the situation is not threatening in terms of any near terms prospects for another major border war, much less a threat to the flow of trade or strategic interests in the IOR.

Sudan and South Sudan

Sudan and South Sudan are a pair of deeply divided countries with a history of conflict. Once again, however, they only have marginal impact on the Red Sea and Horn Sub-Region, much less the overall security and stability of the IOR. Sudan's post-colonial history is one of failed governance, failed development and civil war.

South Sudan and Sudan rank 173 & 174 respectively out of 177 countries in respect to corruption²⁵⁰ and are near the bottom of the UN Human Development Index as well as the Reporters without borders Press Freedom Index. It is also ranked 149 out of 177 in ease of doing business, as reported by the World Bank.²⁵¹

The CIA description of developments in the Sudan is one of the grimmest of any country in the world:, and the situation deteriorated into open civil war along largely tribal lines in January 2014²⁵²

Military regimes favoring Islamic-oriented governments have dominated national politics since independence from the UK in 1956. Sudan was embroiled in two prolonged civil wars during most of the remainder of the 20th century. These conflicts were rooted in northern economic, political, and social domination of largely non-Muslim, non-Arab southern Sudanese. The first civil war ended in 1972 but broke out again in 1983. The second war and famine-related effects resulted in more than four million people displaced and, according to rebel estimates, more than two million deaths over a period of two decades. Peace talks gained momentum in 2002-04 with the signing of several accords.

The final North/South Comprehensive Peace Agreement (CPA), signed in January 2005, granted the southern rebels autonomy for six years followed by a referendum on independence for Southern Sudan. The referendum was held in January 2011 and indicated overwhelming support for independence. South Sudan became independent on 9 July 2011.

Since southern independence Sudan has been combating rebels from the Sudan People's Liberation Movement-North (SPLM-N) in Southern Kordofan and Blue Nile states. A separate conflict, which broke out in the western region of Darfur in 2003, has displaced nearly two million people and caused an estimated 200,000 to 400,000 deaths. The UN took command of the Darfur peacekeeping operation from the African Union in December 2007. Peacekeeping troops have struggled to stabilize the situation, which has become increasingly regional in scope and has brought instability to eastern Chad. Sudan also has faced large refugee influxes from neighboring countries primarily Ethiopia and Chad. Armed conflict, poor transport infrastructure, and lack of government support have chronically obstructed the provision of humanitarian assistance to affected populations.

Sudan is an extremely poor country that has had to deal with social conflict, civil war, and the July 2011 secession of South Sudan - the region of the country that had been responsible for about three-fourths of the former Sudan's total oil production. The oil sector had driven much of Sudan's GDP growth since it began

exporting oil in 1999. For nearly a decade, the economy boomed on the back of increases in oil production, high oil prices, and significant inflows of foreign direct investment.

Following South Sudan's secession, Sudan has struggled to maintain economic stability, because oil earnings now provide a far lower share of the country's need for hard currency and for budget revenues. Sudan is attempting to generate new sources of revenues, such as from gold mining, while carrying out an austerity program to reduce expenditures. Agricultural production continues to employ 80% of the work force. Sudan introduced a new currency, still called the Sudanese pound, following South Sudan's secession, but the value of the currency has fallen since its introduction.

Khartoum formally devalued the currency in June 2012, when it passed austerity measures that included gradually repealing fuel subsidies. Sudan also faces rising inflation, which reached 47% on an annual basis in November 2012. Ongoing conflicts in Southern Kordofan, Darfur, and the Blue Nile states, lack of basic infrastructure in large areas, and reliance by much of the population on subsistence agriculture ensure that much of the population will remain at or below the poverty line for years to come.

...the effects of Sudan's almost constant ethnic and rebel militia fighting since the mid-20th century have penetrated all of the neighboring states; Chad wishes to be a helpful mediator in resolving the Darfur conflict, and in 2010 established a joint border monitoring force with Sudan, which has helped to reduce cross-border banditry and violence; as of 2006, Chad, Ethiopia, Kenya, Central African Republic, Democratic Republic of the Congo, and Uganda provided shelter for over a half million Sudanese refugees, which include 240,000 Darfur residents driven from their homes by Janjawid armed militia and Sudanese military forces; as of January 2011, Sudan, in turn, hosted about 138,700 Eritreans, 43,000 Chadians, and smaller numbers of Ethiopians...

Sudan accuses Eritrea of supporting Sudanese rebel groups; efforts to demarcate the porous boundary with Ethiopia proceed slowly due to civil and ethnic fighting in eastern Sudan; Sudan claims but Egypt de facto administers security and economic development of Halaib region north of the 22nd parallel boundary; periodic violent skirmishes with Sudanese residents over water and grazing rights persist among related pastoral populations along the border with the Central African Republic; South Sudan-Sudan boundary represents 1 January 1956 alignment, final alignment pending negotiations and demarcation; final sovereignty status of Abyei Area pending negotiations between South Sudan and Sudan...

At present, Sudan's security issues are focused almost entirely on internal security and its tensions with Southern Sudan. Its 85,000-man army and 3,000-man air force are deployed for these missions and its small 1,300-man navy consists of 15 patrol boats and craft and 6 landing craft. It has 24 comparatively modern MiG-29 aircraft out of a total of 63 combat aircraft modern, and 23 Mi-24V attack helicopters, but it not capable of engaging any modern force or posing a serious threat to traffic in the Red Sea or Suez Canal.

Sudan does, however, pose a potential threat as a center of extremism and terrorism that might come under more extremist rule or allow non-state actors to operate within its borders. The US State Department described it as follows in its May 2013 country reports on terrorism:²⁵³

Sudan was designated as a State Sponsor of Terrorism in 1993. Sudanese officials regularly discussed counterterrorism issues with U.S. counterparts in 2012 and were generally responsive to international community concerns about counterterrorism efforts. Sudan remained a cooperative counterterrorism partner on certain issues, including al-Qa'ida (AQ)-linked terrorism, and the outlook for continued cooperation on those issues remained somewhat positive.

The Government of Sudan continued to pursue counterterrorism operations directly involving threats to U.S. interests and personnel in Sudan. Sudanese officials have indicated that they view continued cooperation with the United States as important and recognize the potential benefits of U.S. training and information-sharing. While the counterterrorism relationship remained solid in many aspects, hardline Sudanese officials continued to express resentment and distrust over actions by the United States and questioned the benefits of continued cooperation.

Their assessment reflected disappointment that Sudan's cooperation on counterterrorism, as well as the Sudanese government's decision to allow for the successful referendum on Southern independence leading to an independent Republic of South Sudan in July 2011, have not resulted in Sudan's removal from the list of state sponsors of terrorism. Nonetheless, there was little indication that the government would curtail its AQ-related counterterrorism cooperation despite tensions in the overall bilateral relationship.

Elements of designated terrorist groups, including AQ-inspired terrorist groups, remained in Sudan. The Government of Sudan took steps to limit the activities of these organizations, and has worked to disrupt foreign fighters' use of Sudan as a logistics base and transit point to Mali and Afghanistan. Gaps remained in the government's knowledge of, and ability to identify and capture these individuals, however. There was some evidence to suggest that individuals who were active participants in the Iraqi insurgency have returned to Sudan and are in a position to use their expertise to conduct attacks within Sudan or to pass on their knowledge. There was also evidence that Sudanese extremists participated in terrorist activities in Somalia and Mali, activities that the Sudanese government has also attempted to disrupt.

In May, the U.S. government alerted U.S. citizens residing in Sudan that it had received credible reports that extremists were planning to carry out kidnapping operations targeting westerners in greater Khartoum. No such kidnapping had occurred by year's end. The Government of Sudan was responsive to U.S. concerns about the threat. In September, violent extremists attacked the German and U.S. Embassies in Khartoum to protest an American-made film they deemed offensive to the Prophet Mohammed, as well as a Berlin Administrative Court's decision not to ban the use of images of the Prophet by a right-wing group when its members protested outside of a Berlin-area mosque. Demonstrators caused extensive damage to both embassies, and the press reported that local police killed three demonstrators outside of the U.S. Embassy.

The British Embassy also suffered minor damage during the events, due to its proximity to the German Embassy. In December, the Sudanese government announced that its security services had disrupted a terrorist training camp in Sudan's Dinder National Park, approximately 186 miles southeast of the capital. Authorities said they killed 13 violent extremists and arrested another 25. Security officials said the terrorists were planning to assassinate Sudanese government officials and were planning to target Western diplomatic missions in the country.

With the exception of Hamas, the government does not appear to support the presence of violent extremist elements. In November, Hamas political chief Khaled Meshal visited Khartoum during a meeting of Sudan's Islamic Movement, and Meshal met with several senior members of the Sudanese government during his visit.

The United States continued to monitor Sudan's relationship with Iran, itself designated as a State Sponsor of Terrorism. In October 2012, two Iranian warships docked in Port Sudan, which Sudanese officials characterized as a solid show of political and diplomatic cooperation between the two nations.

The kidnapping of foreigners for ransom in Darfur continued in 2012, though no U.S. citizens were kidnapped during the year. These kidnappings have hindered humanitarian operations in Darfur. Abductees have been released unharmed amid rumors of ransoms having been paid.

....Sudan is a member of the Middle East and North Africa Financial Action Task Force (MENAFATF), a Financial Action Task Force (FATF)-style regional body. Since February 2010, Sudan has been publicly identified by the FATF as a jurisdiction with strategic anti-money laundering/combating the financing of terrorism (AML/CFT) deficiencies, for which it has developed an action plan with the FATF to address these weaknesses. Since that time, the Government of Sudan continued to cooperate with the FATF and has taken steps to meet international standards in AML/CTF, but still has strategic deficiencies to address. Sudan was subject to a mutual evaluation conducted by the MENAFATF; this report was adopted by the MENAFATF in November 2012. Sudan continued to cooperate with the United States in investigating financial crimes related to terrorism.

South Sudan became the scene of a serious tribal civil war in late 2013 but is of interest only to the degree that it explains Sudan's focus on security issues to the south rather than the Red Sea. As the CIA reports:²⁵⁴

An Anglo-Egyptian Sudan was established the following year with Equatoria being the southernmost of its eight provinces. The isolated region was largely left to itself over the following decades, but Christian missionaries converted much of the population and facilitated the spread of English. When Sudan gained its independence in 1956, it was with the understanding that the southerners would be able to participate fully in the political system.

When the Arab Khartoum government reneged on its promises, a mutiny began that led to two prolonged periods of conflict (1955-1972 and 1983-2005) in which perhaps 2.5 million people died - mostly civilians - due to starvation and drought. Ongoing peace talks finally resulted in a Comprehensive Peace Agreement, signed in January 2005. As part of this agreement the south was granted a six-year period of autonomy to be followed by a referendum on final status.

The result of this referendum, held in January 2011, was a vote of 98% in favor of secession. Independence was attained on 9 July 2011. Since independence South Sudan has struggled with good governance and nation building and has attempted to control rebel militia groups operating in its territory. Economic conditions have deteriorated since January 2012 when the government decided to shut down oil production following bilateral disagreements with Sudan.

The end result is a continuing set of struggles over control of the border areas between Sudan and South Sudan, much of which is centered around the control of oil resources in South Sudan, inter-tribal conflicts and warfare, Muslim vs. Christian/animist groups, and a territorial dispute over South Sudan's border with the Central African Republic; the boundary that separates Kenya and South Sudan's sovereignty is unclear in the "Ilemi Triangle," which Kenya administers.

Stability and Security in the Red Sea and Horn Sub-Region

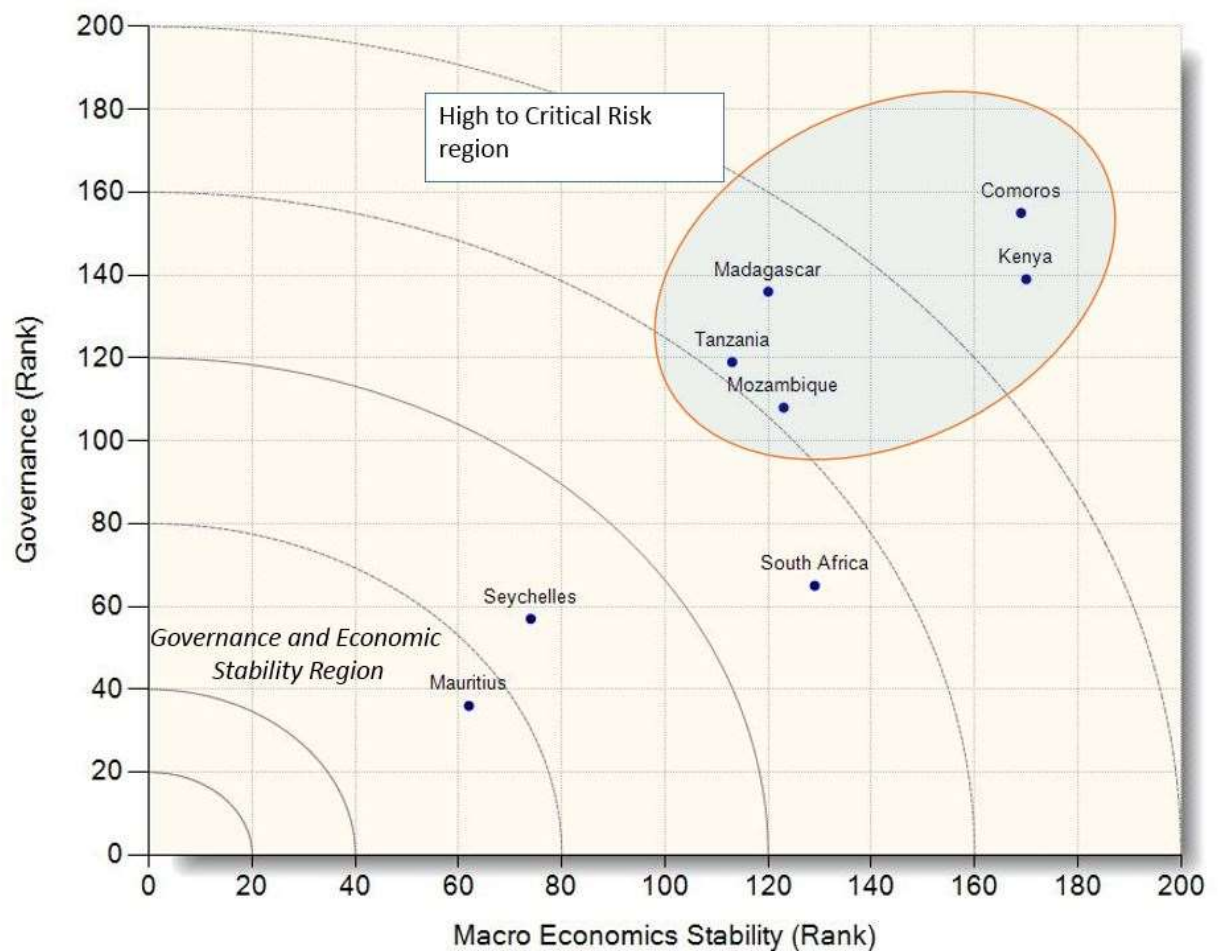
The major short term risk in the Red Sea Subregion is piracy – a risk that international action can control and poses at most an increase in maritime insurance premiums and a limited increase in some operating costs for security routing further off the coast of Africa. The key medium term risk is the stability of Egypt, its ability to secure the Sinai, and its ability to maintain and improve traffic through the Suez Canal and SUMED pipeline.

VI. EAST SUB-SAHARAN AFRICA SUB-REGION

The East Africa Subregion has limited impact on the IOR as a whole and on the global economy. As **Figure VI** shows, it's a an area where most quantitative indicators of national progress show that many countries have high to critical risk, and where other indicators show that most countries have moderate risk.

Aside from South Africa and the security of the Cape maritime route, however, this Subregion is of importance largely as a limited market and the source of some critical minerals and similar exports. The security impact of the sub-region is dominated by the challenge of internal stability, although Kenya faces threats from the al Shahab movement in Somalia and outside Islamist extremists. No power in this Subregion has a major naval or air force, although several could play a role in missions like anti-piracy.

Figure VI.1: Governance and Economic Risk Indicators for the East Africa Sub-Region



The following major country-by-country security issues dominate sub-regional military and security considerations:

Stability and Security in the East Africa Sub-Region

The military forces in the Subregion are summarized in **Figure VI.2** to **Figure VI.6**. There is no military balance in the normal sense of the term. Virtually all of the security issues in the Subregion are problems in internal stability, and there is no current risk of significant conflict at the interstate level. The only exception is a long-standing border security problem between Somalia and Kenya that presents a security problem for both states, but little prospect of war.

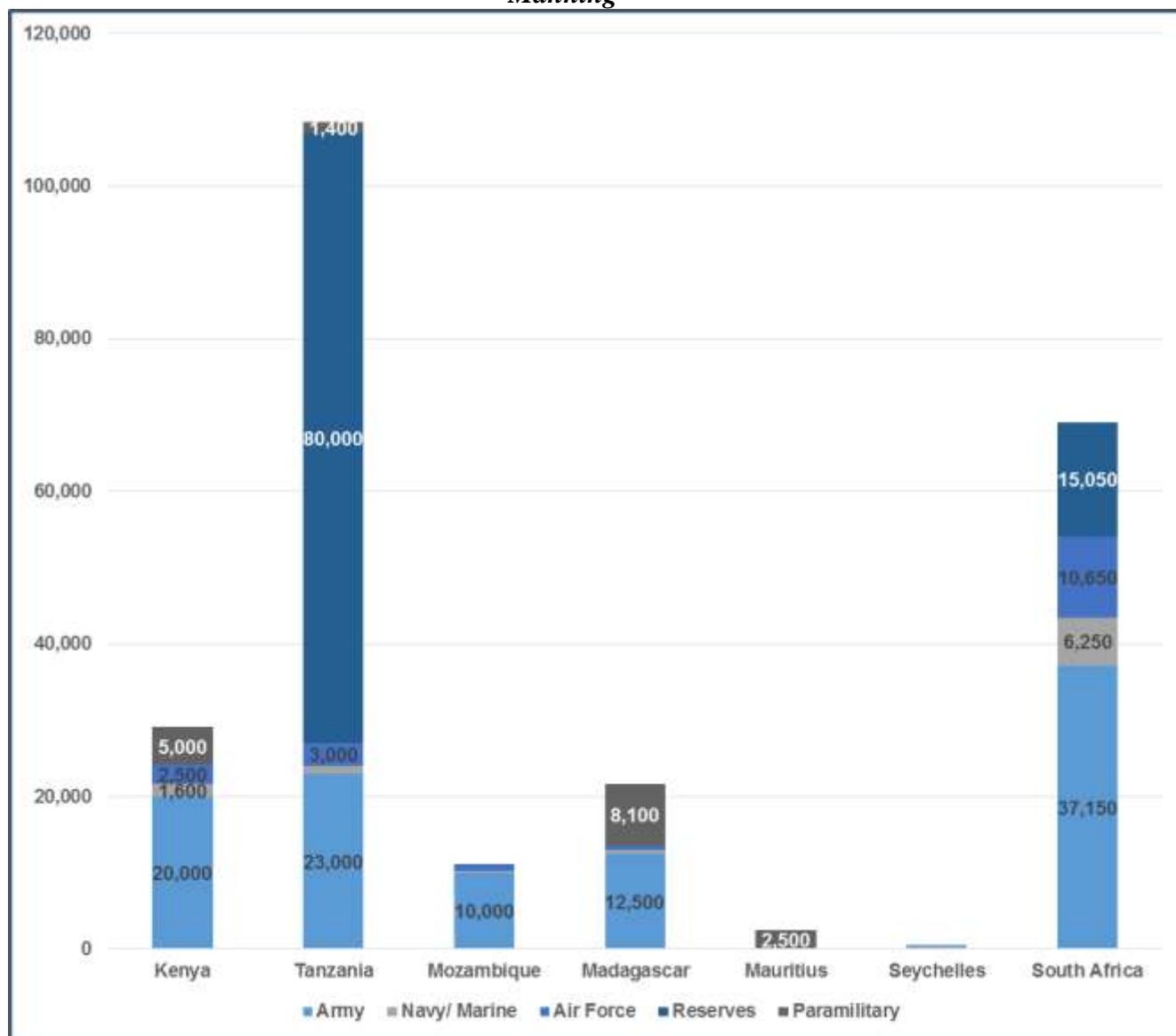
South Africa is the only state with significant military forces that could affect maritime security throughout the IOR, and does not present any current such a risk.

Figure VI.2: East Sub-Saharan Africa Sub-Region Military Balance:

		Kenya	Tanzania	Mozambique	Madagascar	Mauritius	Seychelles	South Africa
Number of Troops	Army	20,000	23,000	10,000	12,500		200	37,150
	Navy/ Marine	1,600	1,000	200	500		200	6,250
	Air Force	2,500	3,000	1,000	500		20	10,650
	Reserves		80,000					15,050
	Paramilitary	5,000	1,400		8,100	2,500		
	Total Troops:	29,100	108,400	11,200	21,600	2,500	420	69,100
Army	MBT	78	45	60				34
	LT TK/ RECCE	92	65	30	85	4	6	82
	APC	189	14	260	30	16		
	AIFV			40		2		534
	Artillery	110	378	126	25	2	6	1,255
	ATK Helicopters			2				11
	Total Land Forces:	469	502	518	140	24	12	1,916
Navy	Amphibious	2	3		1			6
	Mine Warfare/ Countermeasures							2
	Patrol and Coastal Combatants	7	8	1	7	5	8	6
	Principle Surface Combatants							4
	Submarines							3
	Support	2			3	1		7
	Total Naval Forces	11	11	1	11	6	8	28
Air Force	Fighter	22	12					26
	Transport	18	12		16	1	5	35
	Training	24	9					74
	TPT Helicopters	13	3	2	4	5		76
	ISR			2				
	Total Air Forces:	77	36	4	20	6	5	211

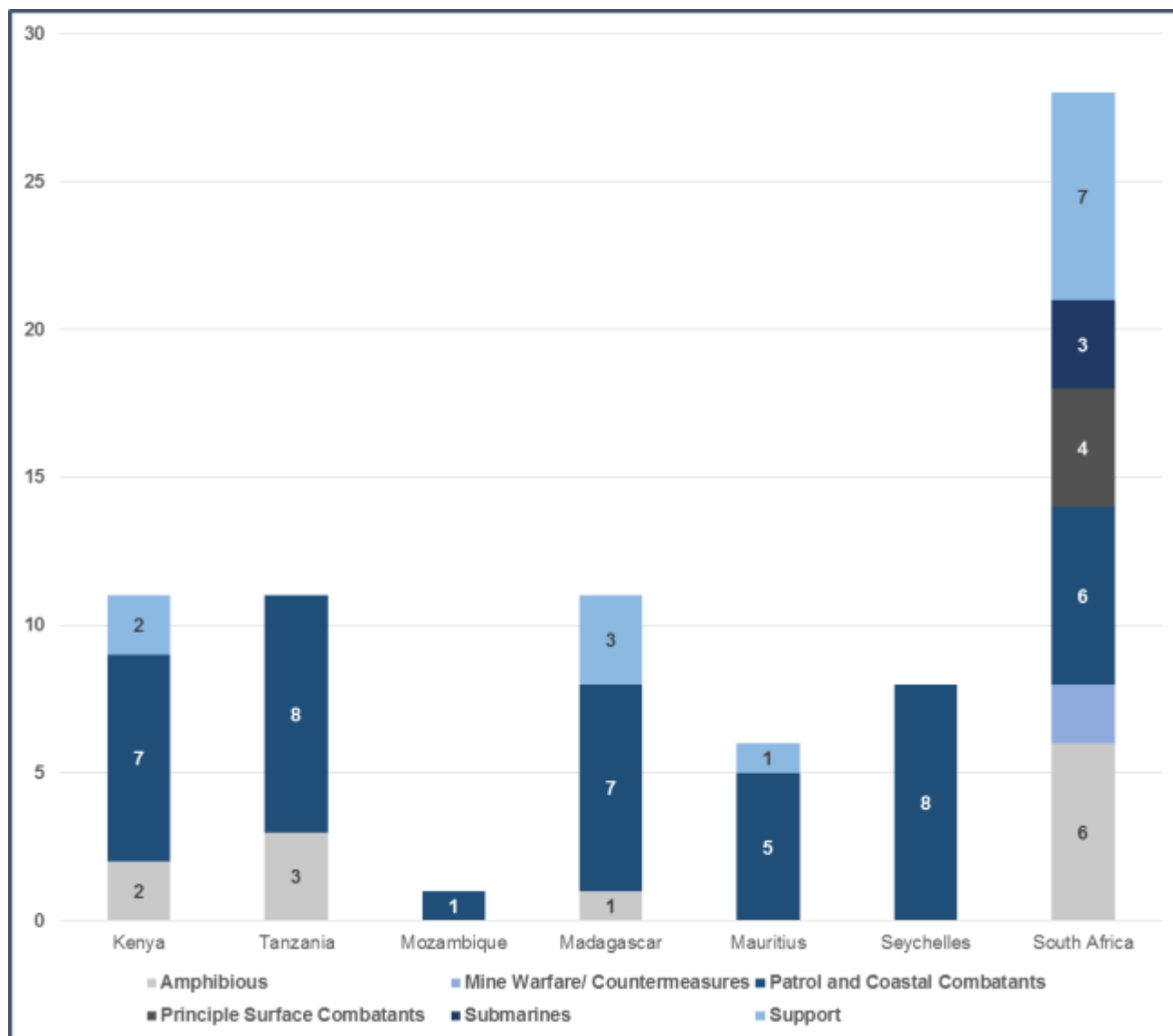
Source: Adapted from IISS, *The Military Balance 2014*, “Chapter 9: Sub-Saharan Africa.”

Figure VI.3: East Sub-Saharan Africa Sub-Region Military Balance: Total Manning



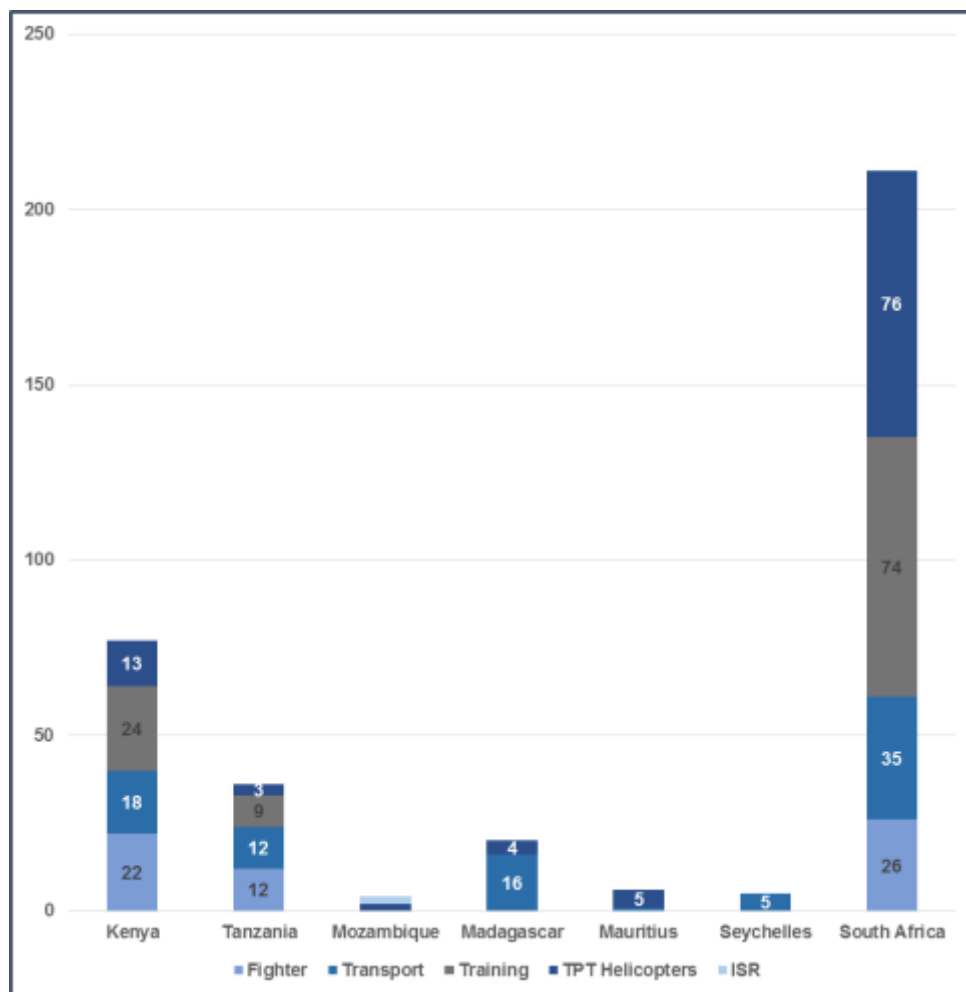
Source: Adapted from IISS, *The Military Balance 2014*, “Chapter 9: Sub-Saharan Africa.”

Figure VI.4: East Sub-Saharan Africa Sub-Region Military Balance: Naval Forces



Source: Adapted from IISS, *The Military Balance 2014*, “Chapter 9: Sub-Saharan Africa.”

Figure VI.5: East Sub-Saharan Africa Sub-Region Military Balance: Air Forces



Source: Adapted from IISS, *The Military Balance 2014*, "Chapter 9: Sub-Saharan Africa."

Kenya

Kenya is a moderate risk state. It achieved independence from Britain in 1963, and was led by Jomo Kenyatta until his death in 1978. Although it remained a democracy, Kenyatta made changes to the constitution to expand his authority and increase his term. He used extra-judicial arrests, tribal and ethnic tensions, and political patronage to strengthen his position. This centralized, and close to one party system continued under the next three presidents, Daniel Arap Moi, Mwai Kibaki, and Jomo's son Uhuru Kenyatta. While the present government is now lead by figures from two competing tribes, this kind of semi-authoritarian leadership remains, and is endemic throughout the Kenyan government and civil society.

The World Bank governance index for 2013 rates Kenya low to moderate in accountability, low in governance, very low in rule of law, low in regulatory capability, very low in political stability and absence of violence, and very low in control of corruption.²⁵⁵ Transparency International ranks Kenya as 136th out of 177 countries in its corruption perceptions index.²⁵⁶

Kenya faces structural challenges that affect many of the states in the region. The US census bureau estimates that its population increased from 6.1 million in 1950 to 44.0 million in 2013, and will increase to 53.2 million in 2025 and 70.8 million in 2050.²⁵⁷ It is also poor. The CIA calculates its GDP at \$75 billion, and GDP per capita at a very poor \$1,800, ranking 196th in the world.²⁵⁸

Kenya has a number of human rights issues, including “the slow pace of police reform, the lack of accountability for security force abuses- including extrajudicial killings, torture, and other human rights violations by the police- and the government’s failure to hold accountable perpetrators of the 2007-2008 post-election violence.”²⁵⁹ This post-election violence has resulted in the current Kenyan President Uhuru Kenyatta and his deputy Ruto “facing charges of crimes against humanity at the International Criminal Court (ICC).”²⁶⁰ Nevertheless, the March 2013 election seems to have brought some degree of added stability to the country, although a terrorist attack at the West Gate Mall that took place in September 2013 has cast doubt on this certainty.

Like most East African states, Kenya focuses on development and internal security. Despite its internal issues, Kenya remains the major economic power in East Africa. GDP is currently \$75 billion, with a real growth rate of 4.6%.²⁶¹ GDP per capita is \$1,800, and the GINI index of 42.5 indicates that wealth is concentrated amongst Kenya’s urban elite. The World Bank ranks Kenya 139th on its ease of doing business index, with serious problems in getting electricity, registering property, taxation, trading across borders, and enforcing contracts²⁶².

Economic security is a major issue. The CIA reports that,²⁶³

Kenya has been hampered by corruption and by reliance upon several primary goods whose prices have remained low. Low infrastructure investment threatens Kenya's long-term position as the largest East African economy. In the key December 2002 elections, Daniel MOI's 24-year-old reign ended, and a new opposition government took on the formidable economic problems facing the nation.

After some early progress in rooting out corruption and encouraging donor support, the KIBAKI government was rocked by high-level graft scandals in 2005 and 2006. In 2006, the World Bank and IMF delayed loans pending action by the government on corruption. The international financial institutions and donors have since resumed lending, despite little action on the government’s part to deal with corruption. Unemployment is very high.

The country has experienced chronic budget deficits, inflationary pressures, and sharp currency depreciation - as a result of high food and fuel import prices. The discovery of oil in March 2012 provides an opportunity

for Kenya to balance its growing trade deficit if the deposits are found to be commercially viable and Kenya is able to develop a port and pipeline to export its oil.

At the same time, Kenya is sharply affected by the violence in Somalia and other states. The CIA reports that,²⁶⁴

Kenya served as an important mediator in brokering Sudan's north-south separation in February 2005; Kenya provides shelter to almost a quarter million refugees, including Ugandans who flee across the border periodically to seek protection from Lord's Resistance Army rebels; Kenya works hard to prevent the clan and militia fighting in Somalia from spreading across the border, which has long been open to nomadic pastoralists; the boundary that separates Kenya's and Sudan's sovereignty is unclear in the "Ilemi Triangle," which Kenya has administered since colonial times

Refugees by country of origin include 34,800 (South Sudan); 34,000 (Ethiopia); 11,500 (Democratic Republic of Congo); 6,000 (Sudan) (2012); 471,906 (Somalia) (2013) IDPs include at least 300,000 (2007-08 post-election violence; the status of the estimated 300,000 IDPs from the 2007-08 post-election violence who found refuge in host communities rather than camps - and IDPs displaced through natural disasters, drought, development and environmental projects, land disputes, cattle rustling, and inter-communal violence - is not captured in Kenya's national database; in 2012, inter-communal violence displaced approximately 118,000 people and floods displaced an estimated 100,000) (2012)

Stateless persons total some 20,000 (2012); note - the stateless population is composed of Nubians, Kenyan Somalis, and coastal Arabs; the Nubians are descendants of Sudanese soldiers recruited by the British to fight for them in East Africa more than a century ago; they did not receive Kenyan citizenship when the country became independent in 1963; only recently have Nubians become a formally recognized tribe and had less trouble obtaining national IDs; Galjeel and other Somalis who have lived in Kenya for decades are lumped in with more recent Somali refugees and denied ID cards.

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Kenya faces a significant threat from trans-border terrorist attacks from Somalia, as evidenced by the September 2013 Westgate Mall terrorist attack in Nairobi that killed at least 67 civilians. Al Shabaab, the Somalia based terrorist organization, claimed responsibility for the attack, citing it as retribution for the Kenyan troops deployed to Somalia in an effort to stamp out the Islamist movement. Even prior to this attack, Kenya has been involved in domestic security and counter terrorism efforts.²⁶⁵

Kenya's Prevention of Terrorism Act, passed by Parliament in September and signed into law by President Kibaki in October, marked a key legislative milestone in the fight against terrorism. Combined with the 2009

Proceeds of Crime and Anti-Money Laundering Act and the 2010 Prevention of Organized Crime Act, Kenyan prosecutors have a robust suite of tools for bringing individuals and organizations to justice, tools which will also greatly facilitate international cooperation and mutual legal assistance in terrorism cases. Even prior to the passage of the new law, Kenyan authorities began prosecution of two ongoing high-profile terrorist cases against Iranian citizens and alleged Islamic Revolutionary Guard Corps-Qods Forces persons Ahmad Abolfathi and Sayed Mansouri on explosives charges, and against British citizen Jermaine Grant on charges of plotting to kill Western tourists on behalf of al-Qa'ida.

Kenya was an active law enforcement partner and participated in the Department of State's Antiterrorism Assistance (ATA) program. ATA programs focused on strengthening border security, enhancing investigative capacity, promoting respect for human rights, and building critical incident response capacity through training, mentoring, advising and equipping Kenyan counterterrorism-focused law-enforcement agencies. Kenya also continued its partnership with the United States on expanding Personal Identification Secure Comparison and Evaluation System, PISCES, border controls to additional ports of entry.

Countering Terrorist Finance: Kenya is a member of the Eastern and Southern Africa Anti-Money Laundering Group, a Financial Action Task Force (FATF)-style regional body. The FATF had previously highlighted the deficiencies in Kenya's anti-money laundering/combating the financing of terrorism regime and intimated possible countermeasures against Kenya. In response, Kenyan authorities developed and made significant progress on an action plan to address those deficiencies, including the establishment of the Financial Reporting Center (FRC) in April and adoption of the Prevention of Terrorism Act (POTA) in October.

As well as regional stability efforts:

Kenya is a member of the AU, the Inter-Governmental Authority on Development, the Community of Eastern and Southern Africa, and the East African Community. The Kenyan government coordinated with these groups significantly during its military campaign against al-Shabaab militants in Somalia. Kenyan law enforcement agencies worked closely with the international community, including the United States, to increase their counterterrorism abilities, secure porous land borders, and improve maritime security. Kenya hosted numerous trainings involving law enforcement professionals from neighboring nations to build counterterrorism capacities and increase regional cooperation. Kenya also cooperated with the United States and other nations to secure especially dangerous pathogens and enhance the Kenyan government's capability to prevent the sale, theft, diversion, or accidental release of chemical, biological or radiological weapons-related materials, technology, and expertise.

Kenya's military forces have aging assets. Its navy is limited to coastal patrol ships and craft and it lacks modern combat aircraft and heavy armor.²⁶⁶ As indicated above, Kenya takes part in stability operations in Somalia, and also regularly participates in international exercises; however, it only has limited power projection capabilities.

The total fleet contains only two amphibious assault vessels, which were deployed in September 2012 to help secure the city of Kismayo in Somalia, which had been controlled by al-Shabaab insurgents.²⁶⁷ Kenya also currently has three infantry battalions deployed to Somalia under the auspices of UN African Union Mission in Somalia (AMISOM.)

Tanzania

Tanzania is a low to moderate risk state. Tanzania has moved slowly away from single party rule, highlighted by government-controlled economic development, since it gained full independence in 1961. It has evolved towards a multi-party political system with decreasing -- but still serious -- government intervention in the economy. The World Bank governance index for 2013 rates Tanzania low to moderate in accountability, low in governance, low in rule of law and regulatory capability, moderate in political stability and absence of violence, and low in control of corruption.²⁶⁸

Tanzania faces serious structural challenges. The US census bureau estimates that its population increased from 7.9 million in 1950 to 38.5 million in 2013, and will increase to 66.9 million in 2025 and 118.6 million in 2050.²⁶⁹ Tanzania only has a slightly more favorable rating than some of its neighbors on the Corruption Perceptions Index, ranking 111 out of 177.²⁷⁰ It did, however, rank 34th out of 179 countries in Reporters without Borders 2011-2012 Press Freedom Index.²⁷¹

Like most states in the Subregion, Tanzania focuses on internal development and security. It has improving political stability but still faces many serious economic challenges. GDP is \$73 billion, 85th in the world, but GDP per capita is \$1,600, 199th in the world. It also ranks a poor 145th out of 182 countries on the World Bank's ease of doing business index.²⁷² The CIA reports that,²⁷³

Shortly after achieving independence from Britain in the early 1960s, Tanganyika and Zanzibar merged to form the nation of Tanzania in 1964. One-party rule ended in 1995 with the first democratic elections held in the country since the 1970s. Zanzibar's semi-autonomous status and popular opposition led to two contentious elections since 1995, which the ruling party won despite international observers' claims of voting irregularities. The formation of a government of national unity between Zanzibar's two leading parties succeeded in minimizing electoral tension in 2010.

...Tanzania is one of the world's poorest economies in terms of per capita income, however, it has achieved high overall growth rates based on gold production and tourism. Tanzania has largely completed its transition to a liberalized market economy, though the government retains a presence in sectors such as telecommunications, banking, energy, and mining.

The economy depends on agriculture, which accounts for more than one-quarter of GDP, provides 85% of exports, and employs about 80% of the work force. The World Bank, the IMF, and bilateral donors have provided funds to rehabilitate Tanzania's aging economic infrastructure, including rail and port infrastructure that are important trade links for inland countries.

Recent banking reforms have helped increase private-sector growth and investment, and the government has increased spending on agriculture to 7% of its budget. The financial sector in Tanzania has expanded in recent years and foreign-owned banks account for about 48% of the banking industry's total assets. Competition among foreign commercial banks has resulted in significant improvements in the efficiency and quality of financial services, though interest rates are still relatively high, reflecting high fraud risk.

All land in Tanzania is owned by the government, which can lease land for up to 99 years. Proposed reforms to allow for land ownership, particularly foreign land ownership, remain unpopular.

Continued donor assistance and solid macroeconomic policies supported a positive growth rate, despite the world recession. In 2008, Tanzania received the world's largest Millennium Challenge Compact grant, worth \$698 million, and in December 2012 the Millennium Challenge Corporation selected Tanzania for a second Compact. Dar es Salaam used fiscal stimulus and loosened monetary policy to ease the impact of the global recession. GDP growth in 2009-12 was a respectable 6% per year due to high gold prices and increased production

Tanzania has a small navy and only limited air capabilities that restrict its capability to intervene in the IOR. At the same time, it must focus on transnational issues like refugees and trafficked persons.

The CIA World Factbook indicates that:²⁷⁴

Tanzania still hosts more than a half million refugees, more than any other African country, mainly from Burundi and the Democratic Republic of the Congo, despite the international community's efforts at repatriation; disputes with Malawi over the boundary in Lake Nyasa (Lake Malawi) and the meandering Songwe River remain dormant.

Tanzania is a source, transit, and destination country for men, women, and children subjected to forced labor and sex trafficking; the exploitation of young girls in domestic servitude continues to be Tanzania's largest human trafficking problem; Tanzanian boys are subject to forced labor mainly on farms but also in mines, in the commercial service sector, in the sex trade, and possibly on small fishing boats; internal trafficking is

more prevalent than transnational trafficking and is usually facilitated by friends, family members, or intermediaries offering education or legitimate job opportunities; trafficking victims from Burundi, Kenya, Bangladesh, Nepal, Yemen, and India are to work in Tanzania's agricultural, mining, and domestic service sectors or may be sex trafficked.

Tier 2 Watch List - Tanzania does not fully comply with the minimum standards for the elimination of trafficking; however, it is making significant efforts to do so; law enforcement made modest anti-trafficking efforts but imposed punishments on offenders that were inadequate for the seriousness of the crimes committed; key victim protection provisions of the 2008 anti-trafficking act remain unimplemented; the government continues to refer child trafficking victims to NGOs for care but has no procedure for the referral of adult victims; the national anti-trafficking action plan has not been implemented; no public awareness campaigns about the dangers of trafficking are conducted (2013).

Illicit drugs: targeted by traffickers moving hashish, Afghan heroin, and South American cocaine transported down the East African coastline, through airports, or overland through Central Africa; Zanzibar likely used by traffickers for drug smuggling; traffickers in the past have recruited Tanzanian couriers to move drugs through Iran into East Asia

In addition, al-Shabab has a presence inside the country, though Tanzania is cooperating at international and regional levels to improve law enforcement, border security, and financial intelligence. The State Department Country Reports on Terrorism show:²⁷⁵

According to Tanzania's interagency National Counterterrorism Center (NCTC), the June arrest of al-Qa'ida (AQ) and al-Shabaab associate, Emrah Erdogan, in Dar es Salaam suggests that the organizations have elements and plans within the country's borders. The NCTC sees itself as a means of preventing terrorist attacks rather than responding to them...

Legislation, Law Enforcement, and Border Security: Regulations for the 2002 Prevention of Terrorism Act were drafted in 2011 and published in August 2012 as the Prevention of Terrorism Regulations 2012. The regulations establish the police and the Financial Intelligence Unit (FIU) as the institutions that are to collect and respond to reports of terrorist activity. The regulations also formalized the process for deeming someone a suspected terrorist, freezing assets, and sharing information between government agencies. To improve border security, the United States provided the police with several patrol boats in Dar es Salaam, Zanzibar, Mwanza, and Tanga. The NCTC reported that its personnel were reviewing border control systems to determine areas of further need...

Tanzania shares borders with eight countries and lacks sufficient resources to adequately patrol those borders. Officers manning border posts are often underequipped and undertrained. Some border posts do not have access to electricity, so computerized systems are not always an option. Among the points of entry that do use computerized systems, there is no single border management software that integrates the information available at all posts. Several Ministry of Home Affairs officials have commented that border posts need better inter-operability.

Countering Terrorist Finance: Tanzania is a member of the Eastern and Southern Africa Anti-Money Laundering Group, a Financial Action Task Force (FATF)-style regional body. Since October 2010, Tanzania has been publicly identified by the FATF as a jurisdiction with strategic anti-money laundering/combating the financing of terrorism deficiencies, for which it has developed an action plan with the FATF to address these weaknesses. In February 2012, Tanzania was named in the FATF Public Statement for its lack of progress in implementing its action plan. Since that time, however, Tanzania has made significant progress to address its outstanding deficiencies, including amending its Prevention of Terrorism Act in June 2012.

Tanzania lacks the naval forces to effectively project power and deal with an emerging piracy threat on its own. Its Navy consists mostly of vessels purchased from China between 1969 and 1971; they possess six patrol boats and two fast attack vessels.²⁷⁶ Given their limited capabilities and untested Navy, it has reached out to South Africa and Mozambique to jointly address piracy issues and has taken part in regional joint exercises.²⁷⁷

Tanzania has, however, received aid and equipment from the United States to help bolster its naval forces. In July 2013, the US, working in conjunction with CJTF-HOA, and soldiers from the Tanzanian Peoples Defense Force, installed a boat ramp that will give the TPDF the ability to launch small patrol boats for coastal operations.²⁷⁸ In October 2013, AFRICOM installed a VHF Communications system across 16 stations throughout Tanzania, and included 182 handheld radios. This deployment will aid Tanzania in its intra-regional cooperation and counter narcotics operations.²⁷⁹

Comoros

Comoros is a moderate risk state that has experienced considerable degree of political instability since gaining its independence from France in 1975. The country experienced 20 coups or attempted coups from 1975 to 2002. African Union forces intervened to prevent the secession of one of Comoros' islands and the subsequent May 2011 elections were considered to be free and fair by observers. Nevertheless, the government is still wracked by internal strife, which has prevented the development of infrastructure, stunted economic growth, and discouraged foreign investment.

The World Bank governance index for 2013 rates the Comoros low in accountability, very low in governance, very low in rule of law and regulatory capability, low in political stability and absence of violence, and low in control of corruption.²⁸⁰ Transparency International ranks Comoros 127th of 177 on the Corruption Perceptions Index, and it ranks 163rd of 187 on the UN Human Development Report.

The US census bureau estimates that its population increased from 148,000 in 1950 to 752,000 million in 2013, and will increase to 906,000 in 2025 and 1,170,000 in 2050.²⁸¹ It is also an extremely poor state. Its GDP is \$868 million, and GDP per capita is only \$1,300.²⁸² The World Bank ranks the Comoros 158th of 182 countries in its ease of doing business index.²⁸³

Comoros is a member of the Partnership for Regional East African Counterterrorism, but its primary transnational issue is that of human trafficking. According to the CIA World Factbook:²⁸⁴

One of the world's poorest countries, Comoros is made up of three islands that have inadequate transportation links, a young and rapidly increasing population, and few natural resources. The low educational level of the labor force contributes to a subsistence level of economic activity, high unemployment, and a heavy dependence on foreign grants and technical assistance. Agriculture, including fishing, hunting, and forestry, contributes 50% to GDP, employs 80% of the labor force, and provides most of the exports. Export income is heavily reliant on the three main crops of vanilla, cloves, and ylang-ylang; and Comoros' export earnings are easily disrupted by disasters such as fires. The country is not self-sufficient in food production; rice, the main staple, accounts for the bulk of imports.

... Comoros is a source country for children subjected to forced labor and reportedly sex trafficking; Comoran children are forced to labor within the country in domestic service, roadside and street vending, baking, agriculture, and sometimes criminal activities; some Comoran students at Koranic schools are exploited for forced agricultural or domestic labor, sometimes being subjected to physical and sexual abuse; Comoros may be particularly vulnerable to transnational trafficking because of inadequate border controls, government corruption, and the presence of criminal networks.

Mozambique

Mozambique is a moderate risk country. It struggled under an autocratic Marxist regime after it gained independence from Portugal in 1975, and fought a civil war until 1989. At this point, a new

constitution was established that set the conditions for multi-party rule and a market economy. Mozambique has since seen relatively strong economic growth and maintained stability through several political transfers of power.

The World Bank governance index for 2013 rates Mozambique low in accountability, low in governance, low in rule of law and regulatory capability, moderate in political stability and absence of violence, and low in control of corruption.²⁸⁵ Transparency International ranks Mozambique 119th out of 177 countries in its corruption perceptions index²⁸⁶ and the World Bank's ease of doing business index ranks Mozambique 139th of 182.²⁸⁷ The United Nation's Human development Index (2011) ranks Mozambique a dismal 184 of 187, citing its abnormally low life expectancy of 52.29 years and high infant mortality rate of 74.63 per 1000.²⁸⁸

Mozambique plays a marginal role in the security of the Indian Ocean Region, and focuses on economic growth and issues on its border. Like most East African states, political stability is a major issue, and its economic outlook is weak. Population pressure, corruption, and business barriers are serious problems. The US census bureau estimates that its population increased from 6.2 million in 1950 to 24.1 million in 2013, and will increase to 32.32 million in 2025 and 59.0 million in 2050.²⁸⁹

Mozambique is also very poor. Its GDP is \$25 billion, ranking 121st in the world, and GDP per capita is \$1,200, ranking 209th in the world.²⁹⁰ The CIA reports that,²⁹¹

Almost five centuries as a Portuguese colony came to a close with independence in 1975. Large-scale emigration, economic dependence on South Africa, a severe drought, and a prolonged civil war hindered the country's development until the mid-1990s. The ruling Front for the Liberation of Mozambique (Frelimo) party formally abandoned Marxism in 1989, and a new constitution the following year provided for multiparty elections and a free market economy.

A UN-negotiated peace agreement between Frelimo and rebel Mozambique National Resistance (Renamo) forces ended the fighting in 1992. In December 2004, Mozambique underwent a delicate transition as Joaquim CHISSANO stepped down after 18 years in office.

His elected successor, Armando Emilio GUEBUZA, promised to continue the sound economic policies that have encouraged foreign investment. President GUEBUZA was reelected to a second term in October 2009. However, the elections were flawed by voter fraud, questionable disqualification of candidates, and Frelimo use of government resources during the campaign. As a result, Freedom House removed Mozambique from its list of electoral democracies.

Mozambique's economy posted impressive gains from 2002-2012, with growth rates ranging from 6%-8%, and a flood of US investment from the Millennium Challenge Corporation, totaling \$506.7 million. Additional outside investment is expected to continue, especially in Mozambique's natural resource sector, revenues from which could overtake foreign investment within the next five years.²⁹²

The CIA reports that,²⁹³

At independence in 1975, Mozambique was one of the world's poorest countries. Socialist mismanagement and a brutal civil war from 1977-92 exacerbated the situation. In 1987, the government embarked on a series of macroeconomic reforms designed to stabilize the economy.

These steps, combined with donor assistance and with political stability since the multi-party elections in 1994, have led to dramatic improvements in the country's growth rate. Fiscal reforms, including the introduction of a value-added tax and reform of the customs service, have improved the government's revenue collection abilities.

In spite of these gains, Mozambique remained dependent upon foreign assistance for 40% of its 2012 annual budget and over half the population remained below the poverty line. Subsistence agriculture continues to employ the vast majority of the country's work force and smallholder agricultural productivity and productivity growth is weak.

A substantial trade imbalance persists although aluminum production from the Mozal smelter has significantly boosted export earnings in recent years. In 2012, The Mozambican government took over Portugal's last remaining share in the Cahora Bassa Hydroelectricity Company (HCB), a significant contributor to the Southern African Power Pool. The government has plans to expand the Cahora Bassa Dam and build additional dams to increase its electricity exports and fulfill the needs of its burgeoning domestic industries.

Mozambique's once substantial foreign debt has been reduced through forgiveness and rescheduling under the IMF's Heavily Indebted Poor Countries (HIPC) and Enhanced HIPC initiatives, and is now at a manageable level.

In July 2007, the US government's Millennium Challenge Corporation (MCC) signed a \$506.9 million Compact with Mozambique. Compact projects will end in September 2013 and are focusing on improving sanitation, roads, agriculture, and the business regulation environment in an effort to spur economic growth in the four northern provinces of the country. Citizens rioted in September 2010, after fuel, water, electricity, and bread price increases were announced.

In an attempt to lessen the negative impact on people, the government implemented subsidies, decreased taxes and tariffs, and instituted other fiscal measures. Mozambique grew at an average annual rate of 6%-8% in the decade up to 2012, one of Africa's strongest performances. Mozambique's ability to attract large investment projects in natural resources is expected to fuel continued high growth in coming years. Revenues from these vast resources, including natural gas, coal, titanium and hydroelectric capacity, could overtake donor assistance within five years.

Mozambique has no real naval and air capabilities for more than coastal defense and action within its waters – if that. The CIA reports that:²⁹⁴

South Africa has placed military units to assist police operations along the border of Lesotho, Zimbabwe, and Mozambique to control smuggling, poaching, and illegal migration.

It notes that Mozambique is a:

southern African transit point for South Asian hashish and heroin, and South American cocaine probably destined for the European and South African markets; producer of cannabis (for local consumption) and methaqualone (for export to South Africa); corruption and poor regulatory capability make the banking system vulnerable to money laundering, but the lack of a well-developed financial infrastructure limits the country's utility as a money-laundering center.

The government has worried that maritime piracy and human trafficking could present a threat beyond homeland security. Their naval involvement has been limited by lack of funds and constrained military capabilities; they are primarily dependent on foreign defense equipment, including stronger developing ties with China.²⁹⁵

Madagascar

Madagascar is another moderate risk state. Like Comoros, Madagascar is plagued by internal political strife that has hindered economic growth. Since gaining independence from France in 1960, Madagascar has undergone numerous changes to its government and constitution due to Cold war alignment, pseudo-coups, and a number of popular uprisings. In 2010, a popular referendum established a new political system which upheld a multi-party system and that held presidential and parliamentary elections in late 2013. The World Bank governance index for 2013 rates Madagascar low in accountability, very low in governance, low in rule of law and regulatory capability, low in political stability and absence of violence, and low in control of corruption.²⁹⁶

These challenges have damaged economic growth in an economy based primarily on the agriculture and tourism sectors, and foreign investment. GDP is currently \$21.1 billion, ranking 130th in the world, with GDP per capita of \$900, ranking only 218th in the world.²⁹⁷ Other barriers to growth are the issues of corruption and ease of doing business, areas where Madagascar ranks 127 of 177 countries in the Transparency International index, and 148 of 182 countries in the World Bank index.²⁹⁸²⁹⁹ The US census bureau estimates that its population increased from 4.6 million in 1950 to 22.6 million in 2013, and will increase to 30.2 million in 2025 and 48.8 million in 2050.³⁰⁰

A GINI index of 47.5 indicate high levels of income inequality and concentration of wealth amongst a small elite. The CIA noted the following regarding Madagascar's current economic situation:

After discarding socialist economic policies in the mid-1990s, Madagascar followed a World Bank- and IMF-led policy of privatization and liberalization that has been undermined since the start of the political crisis. This strategy placed the country on a slow and steady growth path from an extremely low level. Agriculture, including fishing and forestry, is a mainstay of the economy, accounting for more than one-fourth of GDP and employing 80% of the population. Exports of apparel boomed in recent years primarily due to duty-free access to the US, however, Madagascar's failure to comply with the requirements of the African Growth and Opportunity Act (AGOA) led to the termination of the country's duty-free access in January 2010 and a sharp fall in textile production. Deforestation and erosion, aggravated by the use of firewood as the primary source of fuel, are serious concerns. The current political crisis, which began in early 2009, has dealt additional blows to the economy. Tourism dropped more than 50% in 2009 compared with the previous year, and many investors are wary of entering the uncertain investment environment. Growth was anemic during 2010 to 2012 although expansion in mining and agricultural sectors is expected to contribute to more growth in 2013.

Madagascar is involved in the transshipment of trafficked persons to a variety of IOR countries. The CIA World Factbook indicates that:³⁰¹

Madagascar is a source country for men, women, and children subjected to forced labor and women and children subjected to sex trafficking; poor Malagasy women hired as domestic workers in Lebanon and Kuwait are vulnerable to abuse by recruitment agencies and employers; an increasing number of Malagasy men were victimized by labor trafficking abroad in 2012; Malagasy children are subjected to domestic servitude, prostitution, forced begging, and forced labor within the country, often with the complicity of family members; coastal cities have child sex tourism trades, with Malagasy men being the main clients.

Tier 2 Watch List - Madagascar does not fully comply with the minimum standards for the elimination of trafficking; however, it is making significant efforts to do so; law enforcement authorities have made a significant increase in efforts in 2012, resulting in 30 trafficking-related prosecutions and two convictions; public officials complicity in human trafficking, however, remains a significant problem; the government has failed to identify and refer victims to protective services and has not supported NGO-run care facilities; the government also has not engaged any Middle Eastern governments regarding the protection of and legal remedies for Malagasy workers exploited abroad (2013)

Madagascar has a small navy, which has no blue water or power projection capabilities.³⁰²

Mauritius

Mauritius is a moderate risk state. It is a small island in the western Indian Ocean that has a relatively stable democratic government, free and fair elections, and a respectable human rights record. GDP is \$20 billion, 131st in the world, and GDP per capita is \$15,400, ranking 87th in the world.³⁰³ Its GINI index is 39, pointing to only low to moderate income inequality.

The World Bank governance index for 2013 rates Mauritius as having moderate accountability, moderate to high effectiveness of governance, moderate to high rule of law and regulatory

capability, moderate to high political stability and absence of violence, and moderate control of corruption.³⁰⁴ Transparency international ranks Mauritius 52nd of 177 countries on its corruption perceptions index, and the World Bank ranks Mauritius an impressive 20th of 182 on its ease of doing business index.³⁰⁵³⁰⁶ The US census bureau estimates that its population increased from 481,000 in 1950 to 1,320,000 in 2013, and will increase to 1,412,000 in 2025 and 1,441,000 in 2050.³⁰⁷

The CIA provided the following summary description of Mauritius' economy:³⁰⁸

Since independence in 1968, Mauritius has developed from a low-income, agriculturally based economy to a middle-income diversified economy with growing industrial, financial, and tourist sectors. For most of this period, annual growth has been on the order of 5% to 6%. This achievement has been reflected in more equitable income distribution, increased life expectancy, lowered infant mortality, and a much-improved infrastructure. The economy rests on sugar, tourism, textiles and apparel, and financial services, and is expanding into fish processing, information and communications technology, and hospitality and property development. Sugarcane is grown on about 90% of the cultivated land area and accounts for 15% of export earnings. The government's development strategy centers on creating vertical and horizontal clusters of development in these sectors. Mauritius has attracted more than 32,000 offshore entities, many aimed at commerce in India, South Africa, and China. Investment in the banking sector alone has reached over \$1 billion. Mauritius, with its strong textile sector, has been well poised to take advantage of the Africa Growth and Opportunity Act (AGOA). Mauritius' sound economic policies and prudent banking practices helped to mitigate negative effects of the global financial crisis in 2008-09. GDP grew in the 3-4% per year range in 2010-12, and the country continues to expand its trade and investment outreach around the globe.

Mauritius does not have a standing army, and does not contribute naval assets to the protection of the Indian Ocean from piracy, but has entered into two agreements with Britain and the EU Naval Force in Somalia (EUNAVFOR.) the agreement with the UK was signed in June 2012, and allows pirates captured by the royal Navy to be transferred to Mauritius for trial and sentencing.³⁰⁹ The agreement with EUNAVFOR was signed in July of 2011, and stipulates that pirates captured by EUNAVFOR within their specified area of operations can be transferred to Mauritius for prosecution.³¹⁰

As **Figure VI.6** shows, Mauritius does have a coast guard with limited blue water capabilities.

Figure VI.6: Mauritius Forces: Coast Guard

Naval Forces and Coast Guard	Total
Active Manpower	800 (Coast Guard)
Marines	-
Submersibles	-
Major Surface Ships	-
Missile Patrol Boats/Craft and Corvettes with Missiles	-
Other Patrol Boats/Craft	5
Mine Warfare	-
Amphibious	-
Helicopters	-

Source: IISS, *The Military Balance 2014* “Chapter 9: Sub-Saharan Africa.”

Seychelles

Seychelles is a low risk state. It has a stable and increasingly open political system. After independence from the United Kingdom in 1976, it entered a period of successive socialist single-party rulers and a mixture of coups, failed coups, and assassinations. Following the fall of the Soviet Union this cycle came to an end in favor of a more pluralistic multi-party system that remains today.

The World Bank governance index for 2013 rates the Seychelles as having moderate accountability, moderate effectiveness of governance, moderate rule of law, moderate to high political stability and absence of violence, but poor to moderate regulatory capability.³¹¹ The Seychelles ranks 47th out of 177 countries in Transparency International’s 2013 corruption index,³¹² and 80th of 182 countries on the World Bank’s ease of doing business index.³¹³

Seychelles has limited international involvement in the Indian Ocean Region. Though small, it maintains high economic output for its size, which the CIA notes has driven it into the middle-income level.³¹⁴ The Seychelles currently possesses a GDP of \$2.29 billion, ranking 188th in the world, but GDP per capita is \$25,000 – 60th in the world.

Population pressure is real, but moderate compared to many neighboring states. The US Census Bureau estimates that its population increased from 33,000 in 1950 to 91,000 in 2013, but will only increase to 99,000 in 2025 and 100,000 in 2050.³¹⁵

The CIA notes that,³¹⁶

...since independence in 1976, per capita output in this Indian Ocean archipelago has expanded to roughly seven times the pre-independence, near-subsistence level, moving the island into the upper-middle-income group of countries. Growth has been led by the tourist sector, which employs about 30% of the labor force and provides more than 70% of hard currency earnings, and by tuna fishing. In recent years, the government has encouraged foreign investment to upgrade hotels and other services.

At the same time, the government has moved to reduce the dependence on tourism by promoting the development of farming, fishing, and small-scale manufacturing. In July 2008 the government defaulted on

a Euro amortizing note worth roughly US\$80 million, leading to a downgrading of Seychelles credit rating. In an effort to obtain loans to service its debt, Seychelles in November 2008 signed a standby arrangement with the IMF that mandated floating the exchange rate, removing foreign exchange controls, cutting government spending, and tightening monetary policy.

In response to Seychelles' successful implementation of these policies, the IMF upgraded Seychelles to a three-year extended fund facility (EFF) of \$31 million in December 2009. In 2008, GDP fell more than 1% due to declining tourism and the initial effects of liberalization, but the economy recovered in 2010-11 after the reforms took hold and tourism increased. Growth slowed again in 2012 with flagging tourism from Russia and the United Arab Emirates. Seychelles is attempting to implement further structural reforms, including overhauling the tax system, reorganizing of state enterprises, and deregulating the finance and communications sectors.

The Seychelles claims ownership of the Chagos Islands, over which Mauritius also asserts ownership. The Chagos Islands are currently administered by the UK and are located in British Indian Ocean territory. Seychelles is also a source and destination for trafficked children who are often forced into prostitution.³¹⁷

The Seychelles does not have significant armed forces. However, the Coast Guard services shown in **Figure VI.7** are expanding to deal with piracy issues that pose a threat to island safety and stability. The small size of the Seychelles' military prevents any effective power projection, but the United States conducts UAV missions (MQ-9 Reapers) off the Island in order to assist IOR wide counter piracy efforts.³¹⁸

Figure VI.7: Seychelles Forces

Naval Forces and Coast Guard	Total
Active Manpower	200 (Coast Guard)
Marines	80
Submersibles	-
Major Surface Ships	-
Missile Patrol Boats/Craft and Corvettes with Missiles	-
Other Patrol Boats/Craft	8
Mine Warfare	-
Amphibious	1
Helicopters	-

Source: IISS, *The Military Balance*, 2014. Chapter 9: Sub-Saharan Africa. Page 528

South Africa

South Africa is a low to moderate risk state which may be declining to a moderate risk status. It has come a long way since the days of Apartheid, but it faces major internal political and growing economic challenges. The current President, Jacob Zuma, has recently faced criticism for alleged

corruption, particularly over expensive upgrades to his home that were completed with taxpayer money.³¹⁹

South Africa ranks 72nd out of 177 countries in Transparency International's corruption perceptions index.³²⁰ The World Bank governance index for 2013 rates South Africa as having moderate accountability, moderate effectiveness of governance, moderate regulatory capability and rule of law, but low political stability, absence of violence and substantial corruption.³²¹

Economics, Demographics and Trade

South Africa is the major economic power in southern Africa, with a GDP of \$576 billion, ranking 26th in the world, and ranking 41st of 182 countries in ease of doing business.³²² Its GDP per capita is calculated at a relatively high \$11,300, 129th in the world.³²³ However, income is concentrated in urban elites in Cape Town, Pretoria, and Johannesburg. Income distribution is very poor. The GINI index for South Africa is calculated at 63, giving it some of the worst income inequality in the world.

South Africa has been a rapidly growing economic power in Sub-Saharan Africa, and has helped promote region wide growth. The World Bank ranked South Africa a high 41st in the world in ease of doing business in 2014, with significant issues only in terms of availability of electricity and trading across borders.³²⁴

Several of its largest import and export partners are located within in the Indian Ocean region, or have a vested interest in the area, including China, the US, India, and Saudi Arabia.³²⁵ South Africa is also major exporter of gold, diamonds, platinum, other metals and minerals, machinery and equipment, and exports totaled some \$100.7 billion in 2012 versus \$105 billion in imports.

While population pressure has been serious, the rate of increase is projected to decline. The US Census Bureau estimates that its population increased from 13.6 million in 1950 to 48.6 million in 2013, and will increase to 48.7 million in 2025 and 49.4 million in 2050.³²⁶

The CIA reports that,³²⁷

The first multi-racial elections in 1994 brought an end to apartheid and ushered in majority rule under an ANC-led government. South Africa since then has struggled to address apartheid-era imbalances in decent housing, education, and health care. ANC infighting, which has grown in recent years, came to a head in September 2008 when President Thabo MBEKI resigned, and Kgalema MOTLANTHE, the party's General-Secretary, succeeded him as interim president. Jacob ZUMA became president after the ANC won general elections in April 2009.

South Africa is a middle-income, emerging market with an abundant supply of natural resources; well-developed financial, legal, communications, energy, and transport sectors and a stock exchange that is the 15th largest in the world.

Even though the country possesses modern infrastructure that support a relatively efficient distribution of goods to major urban centers throughout the region, some components retard growth. The economy began to slow in the second half of 2007 due to an electricity crisis. State power supplier Eskom encountered problems with aging plants and meeting electricity demand necessitating "load-shedding" cuts in 2007 and 2008 to residents and businesses in the major cities.

Subsequently, the global financial crisis reduced commodity prices and world demand. GDP fell nearly 2% in 2009 but has recovered since then. Unemployment, poverty, and inequality remain a challenge, with official unemployment at nearly 25% of the work force.

Eskom has built two new power stations and installed new power demand management programs to improve power grid reliability. South Africa's economic policy has focused on controlling inflation, however, the country has had significant budget deficits that restrict its ability to deal with pressing economic problems.

The current government faces growing pressure from special interest groups to use state-owned enterprises to deliver basic services to low-income areas and to increase job growth.

South Africa does present an important alternative to the use of the Suez Canal. Closure of the Suez Canal could force ships to take a longer route around the Cape of Good Hope, directing some traffic to South Africa's ports. The additional sailing time (5-7 additional days) makes it a less efficient trade route for ships that would otherwise go through the Suez Canal, but not for larger ships or some going to European ports from Australia.³²⁸

The world has already learned that it can bypass the Suez Canal by going around the Cape at an acceptable cost premium. The Six Days War between Israel and Arab Forces in 1967, and the Israeli invasion of the Sinai led to the closure of the Suez Canal from June 1967 to 1975. This event also helped lead to the development of larger tankers and container ships that reduced the cost of taking the longer route – which adds some 2,700 miles to a tanker moving out of the Gulf to Europe and the Mediterranean. On the other hand, any risk premium from a threat to Suez reduces the cost impact per unit shipped of going around the Cape and some companies like Maersk, one of the world's largest shipper, decided to route oil tankers around the Cape when Somalia piracy was at its peak.

Security and Military Forces

South Africa's primary security concerns focus on its borders and the stability of its neighbors rather than maritime security – where South Africa does not currently face any meaningful threat. The CIA reports that:³²⁹

South Africa has placed military units to assist police operations along the border of Lesotho, Zimbabwe, and Mozambique to control smuggling, poaching, and illegal migration; the governments of South Africa and Namibia have not signed or ratified the text of the 1994 Surveyor's General agreement placing the boundary in the middle of the Orange River.

South Africa partner's with the US State Department's Antiterrorism Assistance Program, which offers courses on "Maritime Interdiction, Explosive Ordinance and Forensics, Land Border Interdiction, Management of Special Events, Document Fraud, and Crime Scene Management," as well as courses offered by the International Law Enforcement Academy in Botswana. However, the State Department reported that attendance and participation in these courses were "plagued by poor participation and it attendees were often unaffiliated with counterterrorism activities."³³⁰

In addition to physical border security, South Africa also focuses on identifying and combating financial terrorist links within their borders. As the US State Department Country Reports on Terrorism indicates:³³¹

As a member of the Financial Action Task Force (FATF) and the Eastern and Southern Africa Anti-Money Laundering Group, a FATF-style regional body, South Africa largely complied with FATF standards for anti-money laundering and counterterrorist finance, and has a well-functioning Financial Intelligence Unit, the Financial Intelligence Centre (FIC). Those required to report to the FIC included banks, financial institutions, car dealers, attorneys, gold dealers, gambling establishments, real estate agents, foreign exchange dealers, securities traders, money lenders (including those who lend against shares, e.g., brokers), entities selling travelers checks, and Johannesburg stock exchange- registered people, and companies. South Africa's FIC is a member of the Egmont group.

Most major cities have a sizable community of those who use a multitude of locally owned money/value transfer (MVTs) services that tend to be poorly regulated, including hawalas. Analysts believe that given a sizable Somali community, and presence of al-Shabaab sympathizers in South Africa, hawalas and other MVTs are likely being exploited to transfer funds to violent extremists in East Africa.

South Africa has one of the largest and best-equipped navies of the Sub Saharan Africa region. However, it has yet to fully engage in securing the Indian Ocean Region. Its only major maritime operation is an ongoing patrol of the Mozambique Channel, called Operation Copper. This Operation has been ongoing since December 2010, when a fishing vessels was attacked by pirates. The Channel is currently patrolled by SAS Galeshewe, a refurbished Offshore Patrol Vessel, which replaced the SAS Amatola frigate in June 2013.³³² Despite this, the mission is fairly small in scope and ad-hoc in nature, raising questions about its sustainability and South Africa's overall influence on maritime security in the IOR region.³³³

In addition to this recurring deployment, South Africa has also sent a frigate along the coast of West Africa to train Namibia, Angola, Ghana, Nigeria and Senegal crews in anti-piracy operations.³³⁴ However, in general, its military deployments have been plagued by lack of coherent strategic doctrine and limited funding.³³⁵

The deployment of a battalion to the Comoros in 2006 was agreed by the foreign ministry without consulting the defence department. The dispatch of a close-protection and training detachment to the CAR in 2007 remains unexplained, while the deployment of a frigate to the Mozambique Channel in early 2011 came in reaction to unexpected pirate attacks in that area, after earlier requests to join anti-piracy operations were not taken up. Most recently, on 27 September, President Zuma agreed, in principle, to provide troops for peacekeeping in Mali, despite the army being overstretched by the demands of foreign deployments and border security duties.

To compound the situation, the treasury only provides limited funding for such deployments.

Similarly, the cabinet transferred border and key-point security to the police, and closed down the army's rear-area security system without any discussion of the implications this might have – before choosing to return border security to the armed forces, without restoring the funding.

The primary offensive capability of the South African Navy lies in their stealth frigates, which are armed with “primarily with surface-to-surface and surface-to-air missiles,” and also has the capacity to embark with one Super Lynx 300 helicopter (see **Figure VI.8.**)³³⁶ In addition, the SAN's submarines lend offensive power and surveillance capabilities. However, as the biggest threats to South African and regional maritime security are posed by piracy, narco trafficking and other illegal commerce, and illegal fishing, the SAN's capabilities are generally unsuited to the threats at hand. Most of the SAN frigates are unable to patrol close to the shore, and those that can are reaching the end of their serviceable lives.³³⁷

Maritime air support is the responsibility of the South African Air Force (SAAF), but it does not currently possess the requisite aircraft to conduct maritime patrols. The Buccaneer maritime strike aircraft was discontinued and the Gripen multirole aircraft is unlikely to replace them, as their range is too limited. The Caravan aircraft provides some air support, but is being discontinued in 2015.³³⁸

Figure VI.8: South African Forces: Naval

Naval Forces and Coast Guard	Total
Active Manpower	6,250
Marines	-
Submersibles	3
Major Surface Ships	4 (Frigates)
Missile Patrol Boats/Craft and Corvettes with Missiles	-
Other Patrol Boats/Craft	6
Mine Warfare	2 (one additional in reserve)
Amphibious	6
Helicopters	4 (MRH, Controlled by Air Force)

Source: IISS, *The Military Balance 2014*, Chapter 9: Sub-Saharan Africa. Page 531

Stability and Security in the East Africa Sub-Region

The major short term risks in the East Africa Subregion are border security, internal stability and economic development. These may affect national trade patterns, but every state needs to maximize its imports and has little latitude in reducing its imports in the face of major population pressures.

The key issue affecting longer term security is the extent to which the security of the Suez Canal and SUMED pipeline, changes in ship size, and other trade and maritime issues affect the flow of trade around the Cape. At present, the level of political instability in South Africa – while significant – does not seem to pose any threats to the flow of such traffic and no external threats have emerged.

VII. SOUTH ASIA SUBREGION

The strategic impact of the South Asia Subregion is dominated by two issues: The risk of another serious round of conflict between the now nuclear-armed forces of India and Pakistan; and the extent to which India emerges as a rival of China in military and economic terms, and as a major regional air-sea power in the entire region.

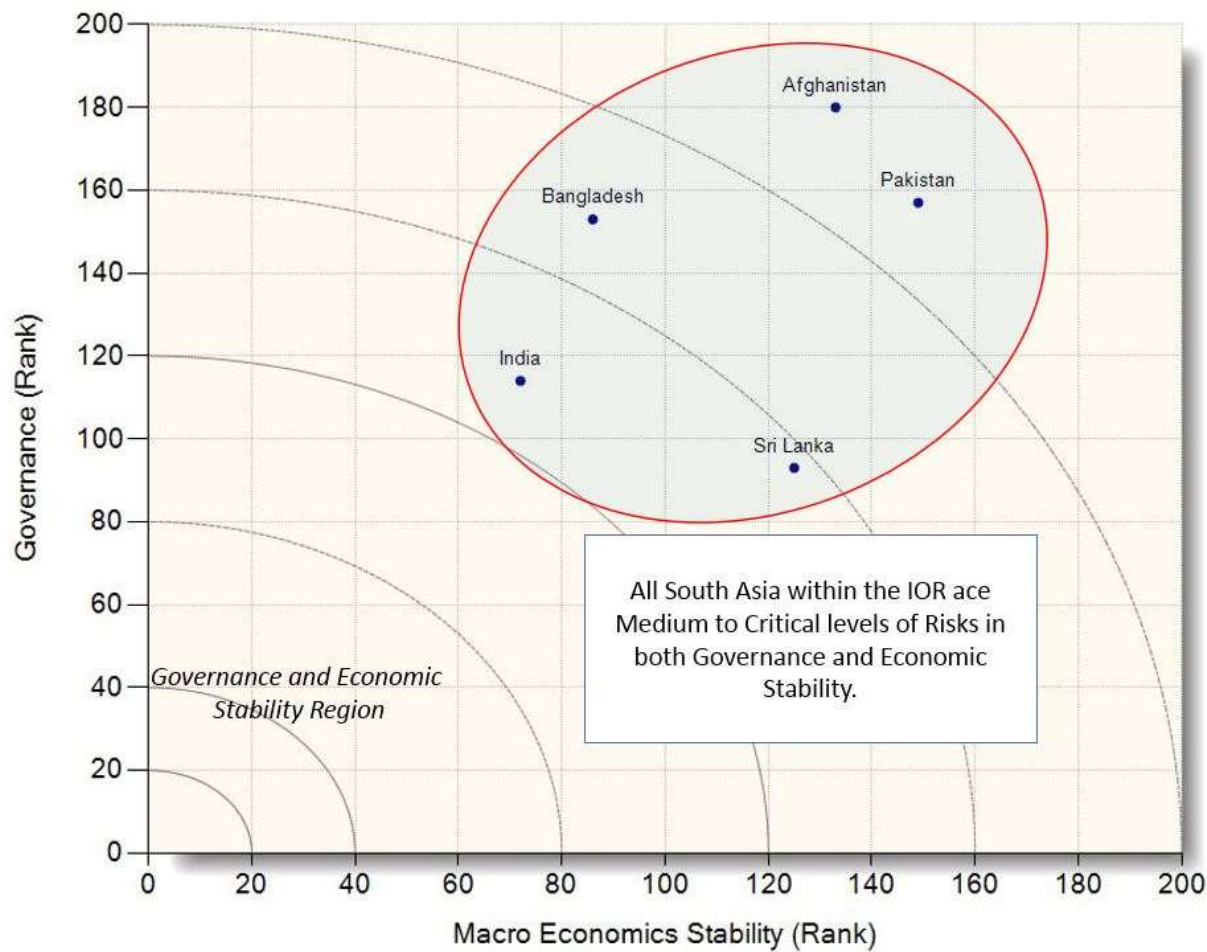
The risk of a major round of conflict seems low, but continuing tension, minor clashes, and terrorist attacks seem likely. The risk of a sudden major crisis and escalation to serious conflict also cannot be dismissed in spite of efforts by both countries to establish better relations.

While the countries in the Subregion present moderate overall risk in terms of their strategic impact on the IOR, **Figure VII.1** shows that they present a higher level of internal risk in terms of economics and governance. In many ways, both India and Pakistan face more of a threat from their own internal politics than from each other or any other foreign threat.

India has the potential to emerge as a major power, but currently lacks the political leadership and effective governance necessary to achieve its potential. The other states in the region – Pakistan, Sri Lanka, and Bangladesh -- are caught up in internal political and economic tensions that threaten their stability and development, marginalize them as powers, and could push them close to the status of failed states.

There are some positive signs in each country as well, but as yet they do not represent dominant forces or indicators that they will become major forces in the region. In practice, the strategic situation will only alter in the mid and long-term to the extent India can expand its broader role in the IOR and to the extent the US and China redefine their roles relative to India, Pakistan, and in securing the flow of petroleum out of the Gulf.

Figure VII.1: Governance and Economic Risk Indicators for the South Asia Sub-Region



India-Pakistan Military Balance

India and Pakistan are radically different states in terms of size and power. India is a nation of 3.29 million square kilometers versus Pakistan's 796,095 square kilometers (4.1:1), and India has a coastline of 7,000 kilometers, versus 1,046 kilometers for Pakistan (6.7:1). In 2013, India had a population of 1,220 million compared to 193 million in Pakistan (6.2:1), and India's GDP in PPP terms was \$4,176 billion versus \$547 billion for Pakistan (7.6:1).³³⁹

Figure VII.2 and **Figure VII.3** show that India has a major advantage in both military spending and total forces relative to Pakistan and the other powers in the Subregion, although it is not close to China in military spending and the size or quality of its forces.

As both Figures show, India has much larger conventional forces than Pakistan. India's military is by far the largest in the sub-region, with some 1.3 million personnel on active duty across the Army, Navy, and Air Force, and another 1.1 million in reserve.³⁴⁰ By comparison, Pakistan maintains a total force of only 643,800, excluding 304,000 paramilitary units focused on internal security and the tribal regions on the Afghan border, which would not be useful in defense against India.³⁴¹ At the same time, **Figure VII.2** and **VII.3** show that China remains the largest military force in Asia, with more Active Forces than India and Pakistan combined – though the vast majority of Chinese forces are stationed in its interior and near its coastline, and would have to be mustered and redeployed to the South Asian border region in order to be actively involved there.

A study by the Stockholm International Peace Research Institute (SIPRI) released in March 2014 estimated estimates that India had had a massive lead in arms imports. It ranked India as the top importer in the world with a 7% share in 2004-2008 and a 14% share in 2009-2013, 75% of which came from Russia, 7% from the US and 6% from Israel. It ranked Pakistan as the third largest importer in the world with only a 2% share in 2004-2008 and a 5% share in 2009-2013; 54% of which came from China, 27% of which came from the US, and 6% of which came from Sweden.³⁴²

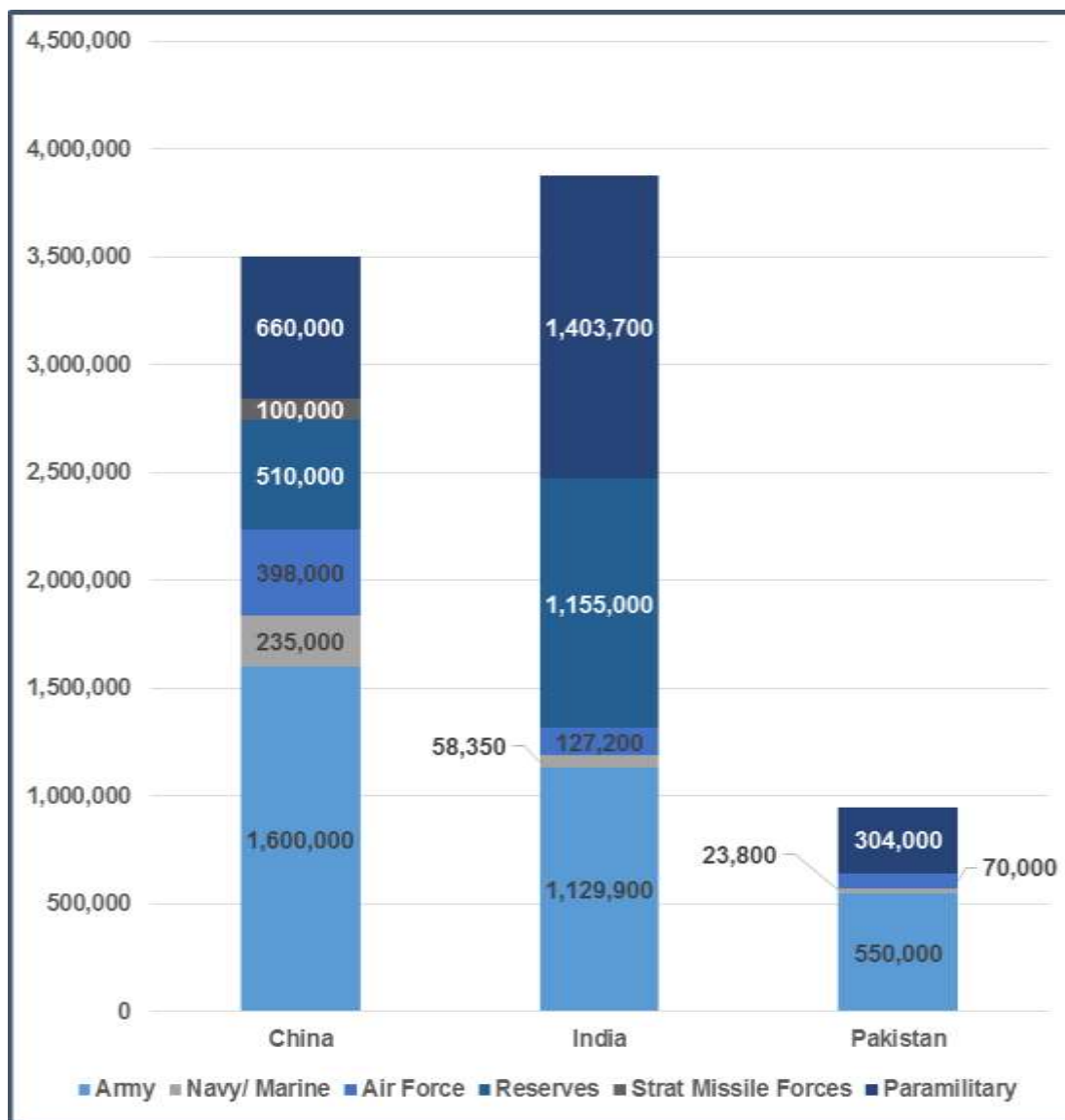
SIPRI reported that India's arms imports had risen by 111% from 2004-2008 to 2009-2013 and the Pakistan's arms imports increase by 119% during that same period. It reported that India received 90 out of an order of 222 modern Su-30Mk II fighters, and 27 out of an order of 45 MiG-29K fighters it had ordered for its carriers. India also has 62 MiG-29SMT and 49 French Mirage 2000-5 fighters on order, and was considering orders of 144 Russian T-50s and 126 French Rafale aircraft. In contrast, Pakistan had taken delivery of 42 Chinese JF-17 fighters out of an order of 147 and had obtained 18 more F-16Cs from the US and 13 used F-16Cs from Jordan.³⁴³

Figure VII.2: India, China, and Pakistan: Summary Force Totals- Part One

		China	India	Pakistan
Number of Troops	Army	1,600,000	1,129,900	550,000
	Navy/ Marine	235,000	58,350	23,800
	Air Force	398,000	127,200	70,000
	Reserves	510,000	1,155,000	
	Strat Missile Forces	100,000		
	Paramilitary	660,000	1,403,700	304,000
	Total Troops:	3,503,000	3,874,150	947,800
Army	MBT	6,840	2,874	2,501
	LT TK/ RECCE	1,023	110	
	APC	4,502	336	1,390
	AIFV	3,450	1,455	
	Artillery	13,054	9,702	4,472
	Total Land Forces:	28,869	14,477	8,363
Navy & Coast Guard	Amphibious	240	40	4
	Aircraft Carrier	1	1	
	Mine Warfare/ Countermeasures	53	8	3
	Patrol and Coastal Combatants	216	84	33
	Principle Surface Combatants	69	24	12
	Submarines	70	14	8
	Support	212	55	14
	Total Naval Forces	861	226	74
Air Force, Navy & Army Aviation	Fighter	890	78	199
	Bomber	120		
	Fighter/Grnd Attack	759	748	174
	Transport	393	278	37
	Training	1,056	281	143
	Support Helicopters	71	105	63
	ISR	51	11	40

	Total Air Forces:	3,340	1,501	656
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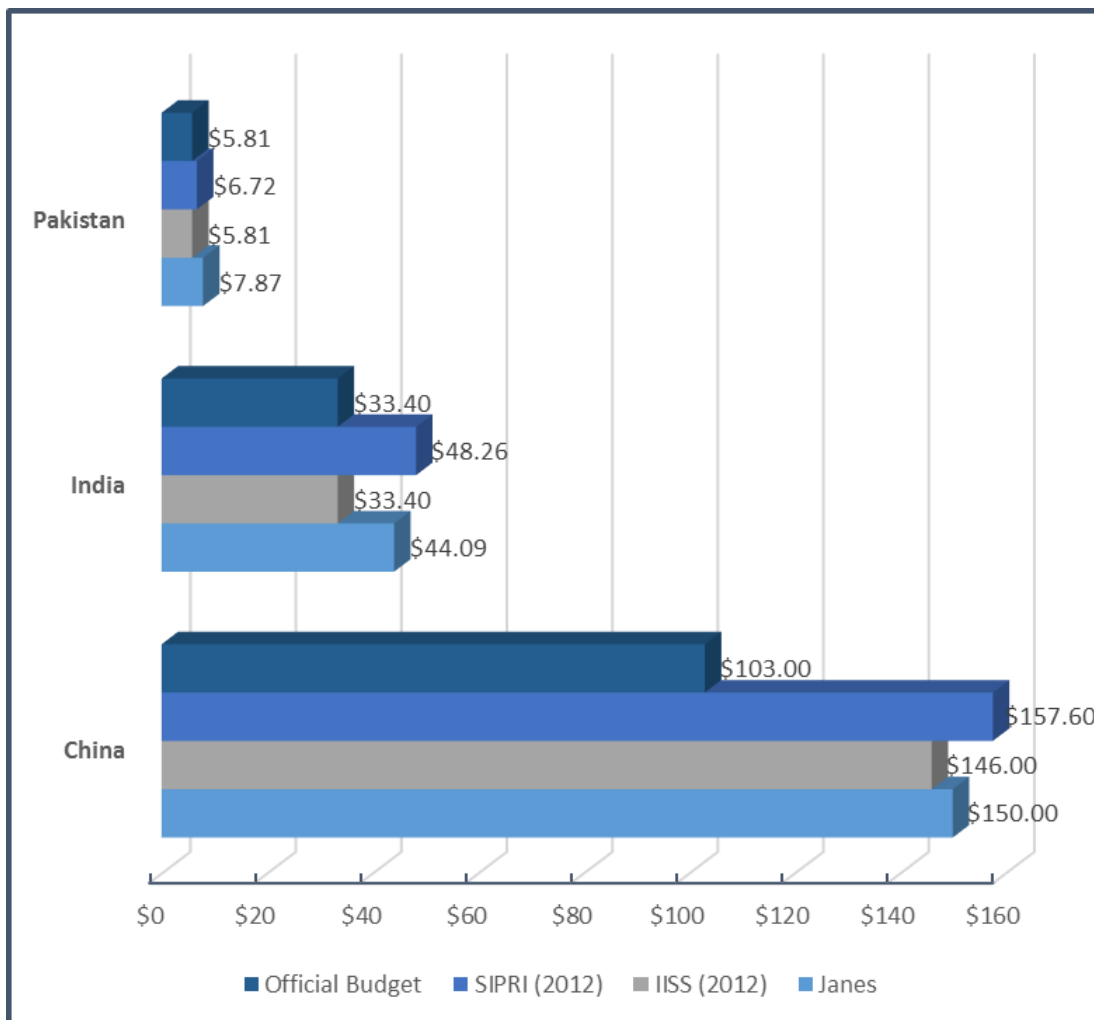
Source: Adapted From IISS, *The Military Balance, 2014*, Chapter Six: Asia.

Figure VII.2: India, China, and Pakistan: Summary Force Totals- Part Two

Source: Adapted From IISS, *The Military Balance, 2014*, Chapter Six: Asia.

Figure VII.3: India, China, and Pakistan: Summary Defense Expenditures

		China	India	Pakistan
Defense Spending 2012 (USD \$Billions)	Janes	\$150.00	\$44.09	\$7.87
	IISS	\$146.00	\$33.40	\$5.81
	SIPRI	\$157.60	\$48.26	\$6.72
	Official Budget	\$103.00	\$33.40	\$5.81



Source: Adapted From IISS, *The Military Balance 2014*, Chapter Six, Asia; and SIPRI Index, & Jane's Sentinel Series

Land and Air Balance

This imbalance of forces extends to both the number and quality of major combat arms across all domains, and particularly in air and sea power – which are the dominant arms that would directly affect any conflict in the Indian Ocean.

India has a major lead in armored maneuver systems, which would form the centerpiece of any conventional ground conflict between the India and Pakistan. As **Figures VII.4, VII.5, and VII.6** show, India maintains some 3,200 main battle tanks to Pakistan's 2,400, as well as some 2,000 mechanized armored fighting vehicles and reconnaissance vehicles to Pakistan's 1,390.³⁴⁴ In a conventional conflict, India could provide fire support to these maneuver units from some 9,600 artillery pieces, in comparison to Pakistan's 4,600.³⁴⁵

These figures do, however, count total weapons inventory and only a fraction of these totals could be engaged in most real world conflicts. Both armies have significant problems in sustaining their operations, in combined arms and joint warfare, and in complex, large-scale maneuvers. India is upgrading its armor and is making an effort to modernize its command and control, combined arms, joint warfare, and army IS&R capabilities, but it is not clear how the results of these efforts compare to those in Pakistan.

As for China, it could not project land forces easily into the region in large numbers, or sustain them, without Pakistani permission and support. Even then, it would take some time to build up major capabilities. China can, however, project and sustain more land forces into the area around its disputed border with India.

The imbalance between India and the other states in the Subregion also exists in air power. **Figures VII.4 through Figure VII.7** show India possesses some 307 3rd and 4th generation fighter aircraft, including 63 MiG 29s, 50 Mirage 2000s, and 194 Su-30s.³⁴⁶ India has also contracted to purchase 126 Dassault Rafale fighters. All told, India has approximately 430 modern and effective combat aircraft out of a total of 870 combat aircraft, plus 20 M-25 and M-35 attack helicopters. India deploys some of its most advanced aircraft, its Su-30s, near its borders with Pakistan and China. It is also seeking to buy at least 272 more Su-30s and more advanced combat aircraft from Russia.³⁴⁷

India has acquired two out of an order of three EMB-145 airborne early-warning and control (AEW&C) aircraft in addition to three larger A-50EI Phalcon AEW aircraft – giving it a significant improvement in overall sensor and air combat management capability.³⁴⁸ Its AE&W aircraft have moderate ELINT capability and India also has 3 Gulfstream IV SRA-4 IS&R aircraft.

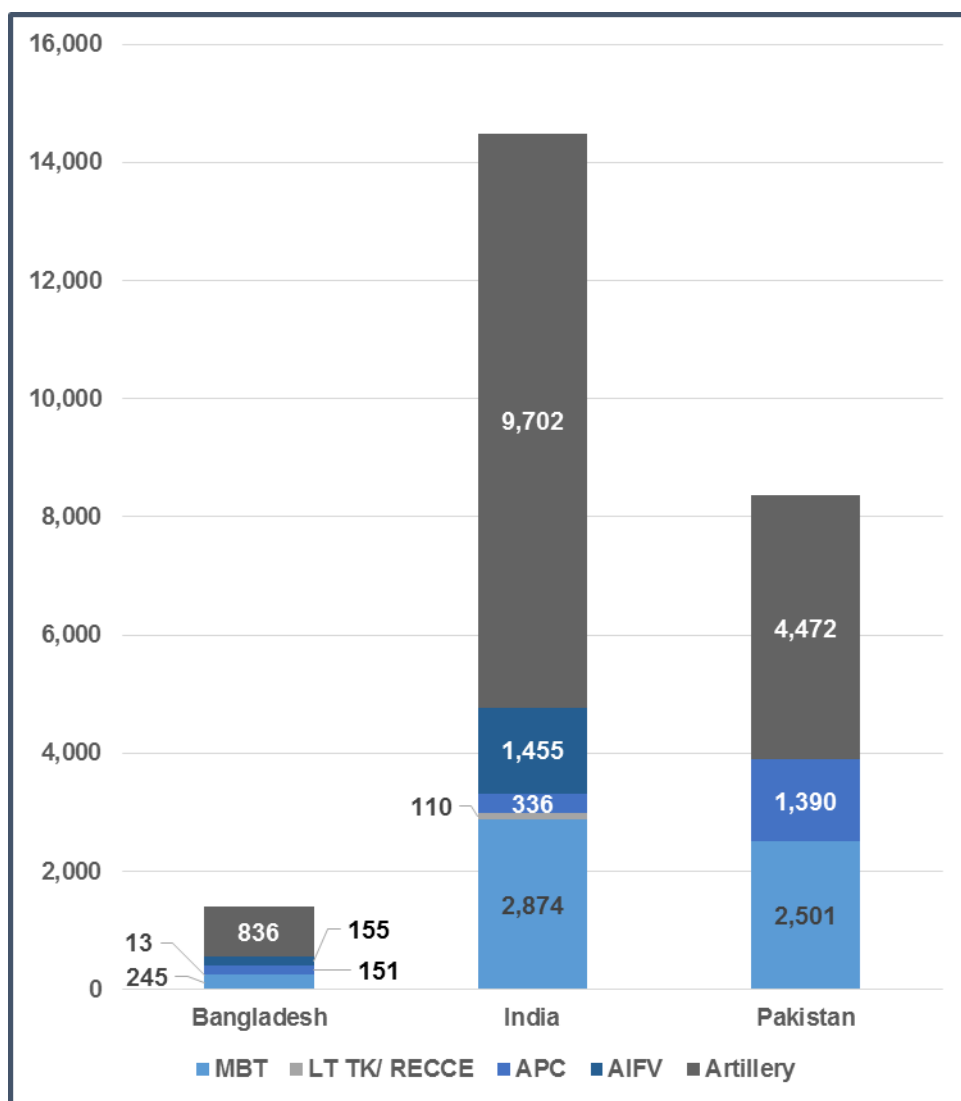
Pakistan's combat air power is considerably smaller and somewhat older. Pakistan maintains 63 F-16s acquired from the US in the 1980s. Its other more advanced aircraft include 50 JF-17 light fighters built in China (with plans to acquire a further 200), as well as 20 Chinese J-10s. It has a total approximately 330 modern and effective combat aircraft out of a total of 423, plus 42:25 AH-1F *Cobra* with TOW anti-tank missiles and 16 AH-1S *Cobra* and 1 Mi-24 Hind attack helicopters. It has 10 obsolescent *Mirage* IIIR (*Mirage* IIIRP) IS&R aircraft, two Falcon 20 electronic intelligence aircraft, and 4 Saab 2000 *Erieye*; and 2 ZDK-03 AEW and C aircraft.

Neither country has an advanced ground based surface-to-air missile defense system. India does, however, have an effective medium to high altitude and some low altitude sensor coverage, S-125 SA-3B *Goa* (Pechore) and 180 SA-6 (2K12 Kub) heavy surface-to-air missile launchers and

extensive holdings of short range and manportable surface-to-air missiles. Pakistan has good medium to high altitude radar coverage, and related C3 facilities, but only has limited numbers of CSA-1 heavy surface-to-air missiles, an upgraded Chinese copy of the new obsolescent SA-2.

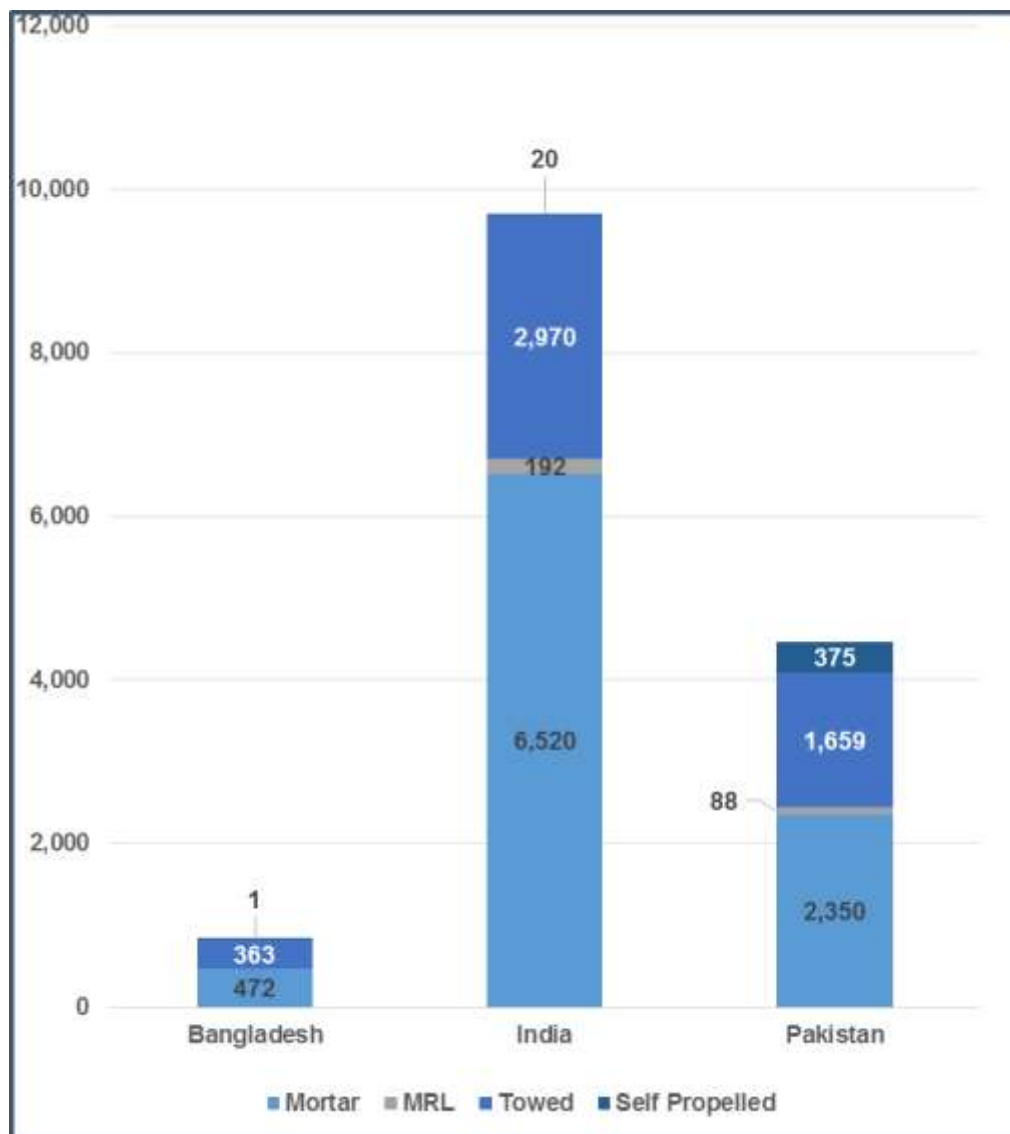
This imbalance should allow India to dominate the air combat dimension in a conflict, and gives it an edge in ground attack capability. The difference in force strength and quality is not so great, however, that much does not depend on how each side deployed its forces, its basing structure and sustainability in the area of combat, its sortie generation rate, and its real-world air training and tactics.

This situation might change if Pakistan gained opened its air bases to Chinese air units, if China and Pakistan developed a capability to repair and sustain Chinese air units, and/or if Pakistan supported a large Chinese deployment of surface-to-air missiles. This, however, is a theoretical option as some shift in Chinese-Pakistani military relation that made Chinese deployment of land forces in Pakistan both possible and credible in terms of military support and sustainment. There are no current indications that either nation has such plans.

Figure VII.4 Bangladesh India, and Pakistan: Land Forces Equipment

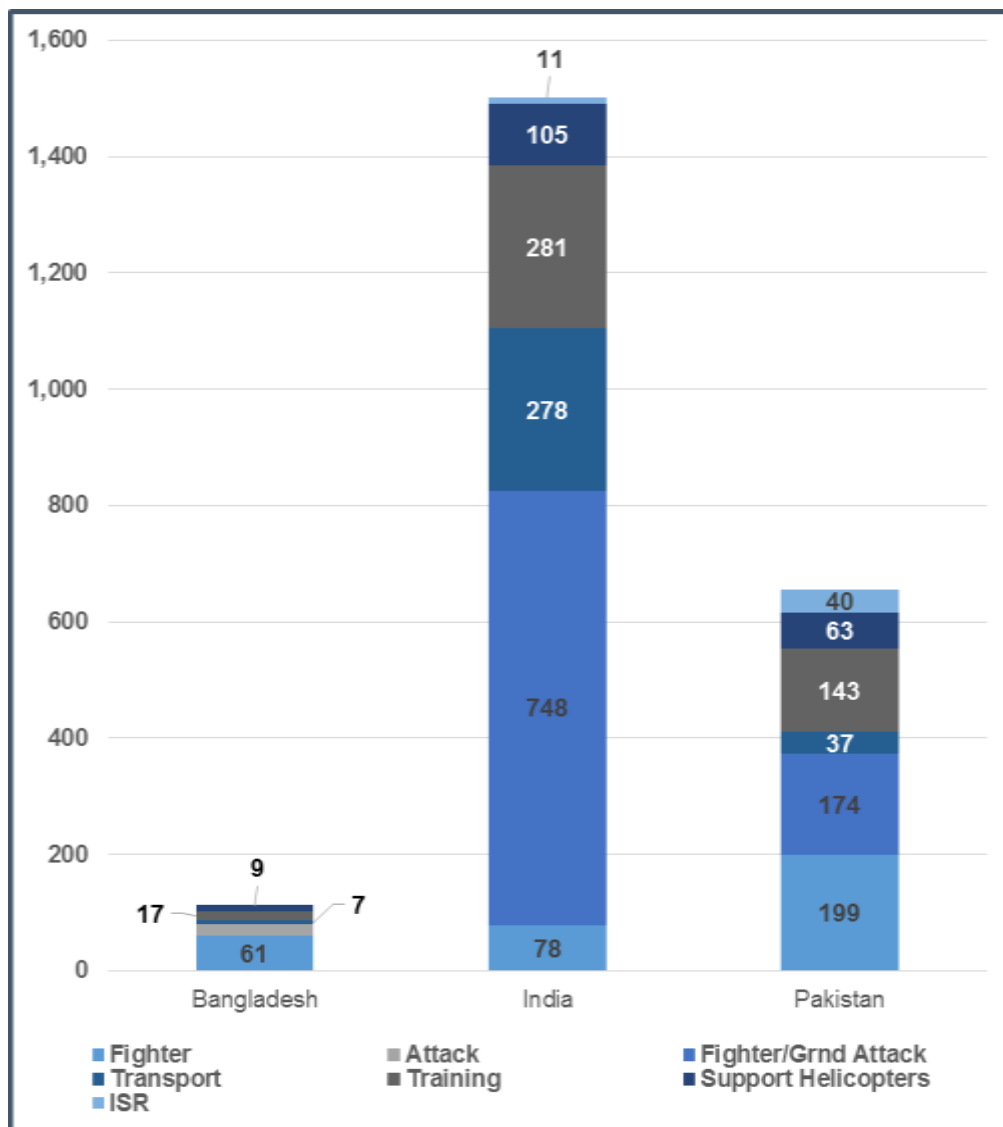
Source: Adapted From IISS, *The Military Balance*, 2014, Chapter Six: Asia.

Figure VII.5: Bangladesh, India, and Pakistan: Artillery



Source: Adapted From IISS, *The Military Balance*, 2014, Chapter Six: Asia.

Figure VII.6: Bangladesh, India, and Pakistan: Air Forces



Source: Adapted From IISS, *The Military Balance, 2014*, Chapter Six: Asia.

Figure VII.7: Bangladesh, India, and Pakistan: Air Forces by Type

		Bangladesh	India	Pakistan
FTR (Fighter)	MiG-29 Fulcrum	8	62	
	MiG-29K (Naval Av)		16	
	F-7 Airguard	33		51
	F-16A Fighting Falcon			24
	F-16B			21
	FT-7 (Multi Variants)	13		27
	FT-6 Farmer	7		
	Mirage IIIB			2
FGA (Fighter Ground Attack)	F-16A/B			45
	F-16C Block 52			12
	F-16D Block 52			6
	JF-17 Thunder			33
	Mirage IIID			7
	Mirage IIIE			63
	Mirage 5			40
	Mirage 5D			3
	Mirage 5PA3			10
	Harrier (Naval Av)		10	
	Jaguar IB/IM/IS		105	
	Su-30MKI Flanker		200	
	Mirage 2000 E/ED		50	
	MiG-21 (Multi Variants)		257	
	MiG 27ML		126	
	Sea Harrier		10	
ISR (Intel, Surveil, Recon)	Mirage IIIR			10
	Searcher Mk II		7	
	Heron		4	
	Gulfstream IV SRA-4		3	
TKR	Il-78 Midas		6	4
TPT (Transport)	C-130B Hercules	4		5
	C-130E Hercules			10
	C-130J		6	
	An-32 Clinet	3	105	
	L-100-20			1
	Il-76MD Candid		24	
	C-17 Globemaster		3	

Source: Adapted From IISS, *The Military Balance*, 2014, Chapter Six: Asia.

Conventional Imbalance Pushes Pakistan Toward Asymmetric Options

India's significant advantage in conventional land, air, and surface-to-air missile strength forces Pakistan to use asymmetric tools to seek a strategic edge, while also forcing Pakistan to rely on a nuclear deterrent to make up for its lack of conventional warfighting capability. Since the 1980s and the military regime of Muhammad Zia ul-Haq, Pakistan has used Islamist militants as proxies to further its strategic goals of advancing its claims for control of Kashmir, preventing an India-Afghanistan alliance, and putting pressure on India by "shifting...the theater of violence from the domestic soil of Pakistan to India," to quote David C. Headley, a Pakistani American arrested for supporting the 2008 Mumbai attacks.³⁴⁹

This strategy has also led Pakistan to covertly support terrorist groups such as Lashkar-e-Taiba and the Haqqani Network.³⁵⁰ These proxy groups allow Pakistan to impose military pressure on India's security while maintaining a high degree of plausible deniability. Pakistan maintains that these groups are banned and operate illegally, but Western experts and intelligence agencies have long maintained that Pakistani Inter-Services Intelligence (ISI) provides them with direct training and material support. David Headley testified that the ISI provided Lashkar-e-Taiba with financial and material assistance and coordinated directly in preparation for the 2008 Mumbai attacks.³⁵¹

In response to Pakistan's emphasis on supporting terrorist groups as asymmetrical proxies against India, Indian conventional force doctrine has shifted to what it calls a "Cold Start." India would respond to a major Pakistani provocation by invading Pakistan fast-moving armored maneuver forces attacking along multiple avenues of approach.³⁵² Its purpose would be to swiftly inflict heavy damage on the Pakistani military in retaliation for a perceived Pakistani provocation before international pressure to prevent hostilities could be brought to bear.

For its part, Pakistan would probably seek to blunt the Indian assault while counter attacking into India as well. As discussed above, India's conventional forces overmatch is such that it would likely achieve rapid dominance over the Pakistan in purely military terms, unless Pakistan received help from an outside power such as China. However, if Pakistan were afraid that it would take major military losses, or especially if it feared Indian seizure of major bases and cities, there is a great likelihood it would resort to the deployment of nuclear weapons against India in order to stave off a complete military collapse.

The Risk of An India-Pakistan Nuclear War

The possibility of a nuclear confrontation between India and Pakistan remains a serious threat. Each state is believed to possess at least 90-110 nuclear warheads in steadily increasing inventories, including theater nuclear weapons, as well as the missile inventories shown in **Figure VII.11**. If these forces were actually used in combat, they could do major damage to each state and the fallout would likely devastate environment of the surrounding region.³⁵³

Figure VII.8: IISS Estimate of India-Pakistan Missile Balance

India	Pakistan
Combat Missile Units 1 gp with <i>Agni</i> I 1 gp with <i>Agni</i> II 1 gp (reported forming) with <i>Agni</i> III 2 gp with SS-150/250 <i>Prithvi</i> I/II	Strategic 60 MRBM ε 30 <i>Ghauri</i> /Ghauri II (<i>Hatf</i> -5)/ <i>Shaheen</i> -2 (<i>Hatf</i> -6- in test) SRBM ε 30 <i>Ghaznavi</i> (<i>Hatf</i> -3 - PRC M-11)/ <i>Shaheen</i> -1(<i>Hatf</i> -4);
Missile Strength	LACM <i>Babur</i> (<i>Hatf</i> -7 - in development); <i>Ra'ad</i> (<i>Hatf</i> -8- in development)
Strategic: 54 IRBM/ICBM: <i>Agni</i> V (in test) IRBM: 24+: ε 12 <i>Agni</i> I (80–100 msl); 12 <i>Agni</i> II (20–25 msl); some <i>Agni</i> III (entering service); <i>Agni</i> IV (in test) SRBM 30+: ε 30 SS-150 <i>Prithvi</i> I/SS-250 <i>Prithvi</i> II; some SS-350 <i>Dhanush</i> (naval testbed) LACM <i>Nirbhay</i> (likely nuclear capable);	ARTY • MRL <i>Nasr</i> (<i>Hatf</i> -9 - likely nuclear capable; in development) Aircraft 1-2 sqn of F-16A/B or <i>Mirage</i> 5 may be assigned a nuclear strike role
Space	
Satellites ISR 3: 1 <i>Cartosat</i> 2A; 2 RISAT	
Aircraft <i>Mirage</i> 2000H or Su-30MKI) may be tasked with a strategic role in development)	

Source: Adapted From IISS, *The Military Balance*, 2014, Chapter Six: Asia.

The rough parity in nuclear capability between India and Pakistan would seem to allow for a deterrence framework similar to the Mutually Assured Destruction (MAD) scheme that prevailed between the US and the Soviet Union during the Cold War. However, some analysts like Paul Bracken, a researcher in the dynamics of nuclear confrontation, feel that newer nuclear powers (such as India, Pakistan, Israel, or potentially Iran) may not be as likely to refrain from deployment of their weapons as the superpowers were during the 20th Century.

He suggests that the possession of nuclear weapons by both countries will in fact make them more crisis prone. Pakistan shapes its defense strategy to rely on nuclear forces in order to offset India's massive superiority in conventional weapons.³⁵⁴ Thus, there is an incentive for Pakistan to deploy

its nuclear weapons at the outset of a crisis in order to prevent India from achieving a swift conventional military victory.

South Asia specialist Steve Coll feels that the possession of nuclear weapons by both sides has made lower-intensity forms of conflict more likely. A major conventional conflict between the two states has become far more dangerous due to the introduction of nuclear weapons, but both sides - especially Pakistan - now see the use of asymmetric tools as more acceptable for advancing military goals in the region.³⁵⁵ At least in the eyes of some in Pakistan, the acquisition of nuclear weapons has become a protective umbrella for aggressive Pakistani asymmetric action in Kashmir since nuclear weapons dramatically increase the risk of Indian retaliation in response to terrorist attacks.

These uncertainties are further complicated by the potential for regional terrorist groups to act as independent spoilers, forcing confrontations between the two nuclear states. This pattern was evident in the 2001-2002 India-Pakistan nuclear crisis, which was precipitated by a terrorist attack on the Indian Parliament on December 13, 2001.³⁵⁶ Due to Pakistan's longstanding support for jihadist groups as an asymmetric weapon against India, there were immediate questions about Pakistani sponsorship of the attacks. India mobilized for war, leading to fears of Pakistani nuclear weapons release in the face of a massive Indian onslaught. Ultimately the crisis was eased through international mediation on the part of US Secretary of State Colin Powell and others who were able to prevail upon Indian leadership not to commit to attacking Pakistan.³⁵⁷

The potential for jihadist groups to force an escalation of India-Pakistan tensions was shown again months later when an attack on the residences of an Indian Army base in Kashmir resulted in the deaths of 34 people, including 22 wives and children of soldiers stationed at the base.³⁵⁸ India prepared to invade Pakistan in retaliation for what was assumed to be a Pakistani sponsored attack.³⁵⁹ It was assumed that Pakistan would respond with nuclear weapons due to its inability to seriously challenge India using conventional means.

The Mumbai attacks of 2008 also resulted in increased tensions between India and Pakistan, with the armies of both states mobilized and preparations made by India for a possible invasion of Pakistan in response to the attacks.³⁶⁰ In each of these instances, war was averted only through conciliatory gestures by both Indian and Pakistani leadership under intense pressure from Western states. The implication of this is that future crisis negotiation will depend heavily on the personalities and temperaments of the leaders involved.

These incidents demonstrate that while neither India nor Pakistan want a nuclear exchange, action by regional jihadist groups such as Lashkar-e-Taiba might force an escalatory cycle which precipitates a nuclear crisis. These two states have, with international assistance, managed to maintain cool heads amidst each of these crises and de-escalated them. However, jihadist groups remain extremely active in the region. There is still strong potential for a terrorist attack in India which could result in another nuclear crisis between India and Pakistan.

The Potential for Non-Nuclear Hostilities

As mentioned above, the presence of nuclear parity between India and Pakistan may make low-intensity conflict more, rather than less, likely and could trigger significant escalation. Pakistan has superior asymmetric forces in the form of jihadist groups supported by Pakistani Inter-Services Intelligence (ISI), but faces the risk of Indian conventional retaliation to terrorist or other asymmetric attacks. Steve Coll quotes an anonymous Pakistani General as saying that during the

2001-02 nuclear crisis, without a Pakistani nuclear deterrent “there might have been a war.”³⁶¹ This General goes on to say that the primary lesson of the crisis is that “possession of nuclear weapons has not been a bad idea.”³⁶²

However, much of the theory which seeks to assess the nuclear crisis dynamics between India and Pakistan is based on speculation, and past cases only provide an uncertain indication of how leaders on each side might be expected to respond to a conventional military crisis in the future. The 1999 Kargil War in fought between Indian and Pakistani forces in Kashmir is to date the only instance of two hostile nuclear powers fighting in conventional conflict. The war attracted intense international scrutiny, specifically over the nuclear issue and the possibility that nuclear weapons were being readied for deployment.³⁶³

The trend since that time has been that any major escalation in tensions between India and Pakistan receives immediate and intense international attention in order to resolve the situation peacefully. It is virtually guaranteed that future escalations would invite similar international intervention due to the potential for conventional war to escalate into the nuclear realm. Thus, the trend of the past 15 years indicates that any escalation in tension will receive immediate international attention, and both India and Pakistan will face enormous pressure to resolve the dispute peacefully.

The continuing presence of jihadist groups in South Asia makes a terrorist attack on India at almost inevitable at some point in the future. If the record of the past 15 years provides any indication, India will in all likelihood mobilize forces to strike against Pakistan in retaliation for such attacks, especially if intelligence points to Pakistani military support for the attackers as was the case in the 2008 Mumbai attacks (detailed fully below).

In such an event, India may be forced to retaliate in some manner against targets in Pakistan, either militant training camps for groups like Lashkar-e-Taiba or official Pakistani military targets. In such an event, the escalation chain will hinge on India’s capabilities for precise targeting. If India can limit its strikes to militant targets, the war would be unlikely to escalate past the nuclear threshold. However, should India stage a conventional invasion of Pakistan as appeared likely during the 2001-02 crisis, the Pakistani military would likely feel compelled to employ nuclear weapons in order to ensure its national survival. Furthermore, in any such crisis, the possibility for miscalculation on both sides is such that the exact chain of events or the precise trigger for nuclear escalation would be impossible to predict.

The Kashmir Conflict

The disputed region of Kashmir, in northernmost India – parts of which are claimed by India, Pakistan, and China, remains an outstanding issue between the three countries. The CIA describes this issue as follows:³⁶⁴

Kashmir remains the site of the world's largest and most militarized territorial dispute with portions under the de facto administration of China (Aksai Chin), India (Jammu and Kashmir), and Pakistan (Azad Kashmir and Northern Areas); India and Pakistan resumed bilateral dialogue in February 2011 after a two-year hiatus, have maintained the 2003 cease-fire in Kashmir, and continue to have disputes over water sharing of the Indus River and its tributaries; UN Military Observer Group in India and Pakistan has maintained a small group of peacekeepers since 1949;

India does not recognize Pakistan's ceding historic Kashmir lands to China in 1964; to defuse tensions and prepare for discussions on a maritime boundary, India and Pakistan seek technical resolution of the disputed boundary in Sir Creek estuary at the mouth of the Rann of Kutch in the Arabian Sea; Pakistani maps continue to show its Junagadh claim in Indian Gujarat State;

Prime Minister Singh's September 2011 visit to Bangladesh resulted in the signing of a Protocol to the 1974 Land Boundary Agreement between India and Bangladesh, which had called for the settlement of longstanding boundary disputes over undemarcated areas and the exchange of territorial enclaves, but which had never been implemented;

Bangladesh referred its maritime boundary claims with Burma and India to the International Tribunal on the Law of the Sea; Joint Border Committee with Nepal continues to examine contested boundary sections, including the 400 square kilometer dispute over the source of the Kalapani River; India maintains a strict border regime to keep out Maoist insurgents and control illegal cross-border activities from Nepal.

India and Pakistan have fought two wars over the disputed province, which has killed an estimated 68,000 people. As the war over the Rann of Kutch showed, it is hard to predict the points at which India and Pakistan can go to war. The Indian army currently has five infantry divisions and an air base, (and another one under construction,) in Kashmir, as well as more infantry divisions and an armored tank division south of the Line of Control.³⁶⁵

The IISS reported in an assessment in the 2013 edition of its annual *Military Balance* that,³⁶⁶

India continues to reinforce its military capability in its border regions with Pakistan and China. The air force has over the past two to three years deployed its most capable multi-role combat aircraft, the Sukhoi Su-30MKI *Flanker*, at bases in the northeast and in the northwest, while the army established two additional mountain divisions (the 56th and 71st) and plans a mountain strike corps in the former region. *Flankers* were deployed to Tezpur and Chabua air bases in 2009 and 2011 respectively, with the type being deployed to Bhatinda and Halwara during 2012. Leh and Nyoma are likely planned forward-operating bases for the *Flanker*, with the latter being upgraded presently. Nyoma is under 15 miles from the Line of Actual Control with China.

In September 2013, however, the Prime Ministers of the respective countries met on the sidelines of the UN General Assembly, though many have expressed doubt that the meeting would lead to any long lasting peace for the region and between the two countries. The meeting took place among several violent clashes over the previous two months that killed a total of eight soldiers of both Pakistani and Indian origin, and caused relations to crater.³⁶⁷ Furthermore, in late October 2013, violence across border posts broke out, leaving 12 people, including children, dead from machine guns and mortar fire. However, it is unclear if this violence is merely a cross border skirmish or indicative of more widespread violence to come.³⁶⁸

Pakistani Nuclear Security Concerns

Aside from the concerns about conflict between India and Pakistan escalating into the nuclear domain, there have been longstanding concerns about the security of Pakistan's nuclear weapons and the possibility that these might fall into the hands of terrorists or rogue elements within the Pakistani military. These concerns were heightened beginning in 2004 by revelations that Abdullah Qadeer Khan, one of the lead physicists in Pakistan's nuclear program and considered the "father of the Pakistani bomb" had been operating a nuclear technology smuggling group which had provided uranium enrichment technology and nuclear development know-how to countries such as Iran, Libya, and North Korea.³⁶⁹

The technology and information provided smuggling network is considered to have been instrumental in bringing both the Iranian and North Korean nuclear programs through the embryonic stage. A.Q. Khan was never formally arrested or charged, and was released from house arrest in 2009 on orders from the Islamabad High Court.³⁷⁰ It is unclear if elements of A.Q. Khan's smuggling network remained active during his house arrest, or if it has been reactivated in the years since his release. Secretary of State Hillary Clinton noted in 2011 that the US and Pakistan

were cooperating to dismantle all nuclear smuggling networks which could present a proliferation threat.³⁷¹

There has been no evidence that A.Q. Khan's network provided nuclear material or know-how to al Qaeda or other terrorist groups, but the Congressional Research Service notes that other scientists from the Pakistani nuclear program, Sultan Mahmood – a known Islamic fundamentalist – and Chaudiri Majeed, met with Osama bin Laden and Ayman al-Zawahiri in August, 2001, to discuss nuclear weapons designs and the technology which would be required to provide al Qaeda with a functioning nuclear weapon.³⁷² It is believed that the Pakistani military effectively disrupted these plans in the wake of the 9/11 attacks when President Musharraf agreed to support the US Global War on Terror. However, this event highlights the continuing potential for members of Pakistan's military or nuclear establishments to divert weapons technology and know-how to terrorist groups either for profit or ideology.

The security of Pakistan's actual nuclear weapons has also been a matter of continuing scrutiny, but US officials and analysts generally agree that the Pakistani military maintains acceptably high levels of security over its nuclear weapons. Pakistani weapons are believed to be stored in "component form," in which their warheads are stored separately from the missiles which will deliver them to their targets. Additionally, the fissile cores of the warheads may be stored separately from the triggering components.³⁷³ These parts would have to be properly assembled before a weapon could be detonated. This allows for a strong additional layer of security over Pakistan's weapons in that a terrorist or nuclear thief would have to penetrate the security around at least two separate storage sites, steal the requisite component parts, and have the technical knowledge to assemble them.

However, a report published in the West Point Combatting Terrorism Center's *Sentinel* journal notes that these measures are not foolproof. The report notes that terrorist groups have attacked military installations believed to store nuclear weapons or related technologies before (including bases at Wah, Kamra, and Saragodha) and that the tactics employed by the Tehreek-i-Taliban Pakistan (TTP) in their attack on the Pakistani Army's General Headquarters in Rawalpindi on October 10, 2009 could feasibly enable the penetration of a nuclear site if they were replicated against one in the future.

During this event, the terrorists were able to gain access to the installation through the use of actual military uniforms, identification documents, and vehicles.³⁷⁴ Furthermore, the attackers had accurate maps and other intelligence of the facility, allowing them to conduct detailed operational planning for every step of their attack. This would also be feasible in the case of Pakistani nuclear facilities. The *Sentinel* report notes that³⁷⁵

As many as 70,000 people in Pakistan reportedly have access to, or knowledge of, some element of the Pakistani nuclear weapons production, storage, maintenance, and deployment cycle, from those involved in manufacture of fissile material, through those engaging in nuclear weapons design, assembly and maintenance, to those who transport and safeguard the weapons in storage and would deploy the weapons in a crisis. That number will also rise steadily as the size of the nuclear arsenal grows.

Finally, upon reaching more secured entry points, the lead elements in the attack detonated suicide vests, destroying security checkpoints with them and allowing follow-on elements to flow through.³⁷⁶ This particular tactic could, in theory, allow penetration of perimeter defenses of any depth, as a terrorist group with proper intelligence of security protocols – which the TTP clearly possessed during the October 2009 attack – and enough suicide bombers could cascade perimeter

defenses, each bomber blowing a hole in a layer of perimeter security through which others could enter. The *Sentinel* report concludes that³⁷⁷

A frontal assault of this kind on nuclear weapons storage facilities, are the most robustly defended elements of Pakistan's nuclear weapons cycle, is no longer an implausible event. The successful location and penetration of such a site by terrorists, even if they were ultimately unsuccessful in accessing nuclear assets, would itself be a transformative event both in terms of the U.S.-Pakistani nuclear relationship and in terms of international anxiety about the security of Pakistan's nuclear weapons. Such an assault would also critically undermine Pakistan's reassurances about the security of its nuclear weapons elsewhere in the weapons cycle, particularly in transit. As the number of Pakistan's nuclear weapons rise, and as the nuclear weapons security challenges thereby steadily multiply, the odds that Pakistan's nuclear weapons security will eventually by compromised continue to rise.

The potential gap in this security arrangement would increase significantly during a crisis in which the military decided to prepare the weapons for potential deployment. Weapons components would presumably have to be removed from storage and assembled with their delivery systems, a process which would by necessity involve compromising at least some of the security measures currently in place. Under crisis circumstances, during which the Pakistani military would be placing far more emphasis on readying nuclear weapons for immediate deployment rather than on standing security measures, it would be far easier for a terrorist group or renegade military unit with proper intelligence of Pakistan's nuclear security protocols to penetrate those measures and capture a weapon. These concerns are heightened due to the deliberate opacity surrounding Pakistan's nuclear doctrine and the circumstances under which the military would begin readying weapons for deployment.

These issues will be compounded as Pakistan begins fielding a new generation of tactical nuclear weapons designed not to deter an Indian nuclear strike, but rather to counter India's overwhelming conventional military superiority.³⁷⁸ In the event of an Indian invasion, especially if India were employing its "Cold Start" doctrine and pursuing an armored blitzkrieg into Pakistani territory, Pakistan intends to employ these smaller nuclear weapons to destroy Indian armored columns where its own conventional units would be unable to do so.

As a result of this different target set, Pakistan's tactical nuclear weapons are forward deployed on short range missiles near the Indian border, where they would be ready for quick deployment in the event of an Indian invasion. The placement of these weapons makes them inherently vulnerable to being overrun by Indian forces, providing an intense "use it or lose it" incentive to Pakistani leaders to launch them before they are seized by Indian units. As a result, there are indications that the Pakistani military has provided "partial pre-delegation" of launch authority to local commanders so that they would be prepared to use their weapons should they be in danger of being overrun before launch orders could be given by Pakistan's central military command in Rawalpindi.³⁷⁹

This arrangement is inherently dangerous as it distributes control of at least some of Pakistan's weapons across a greater array of frontline commanders, which "inevitably dilutes command and control of nuclear weapons, however competent officials might be."³⁸⁰ This obviously increases the chances that one of these commanders, or a member of his staff, could divert weapons, fissile material, or nuclear technology, either due to ideology, for profit, or under coercion.

US options for supporting the security of Pakistan's nuclear arsenal remain extremely limited. The US has offered assistance to Pakistan to support improvements to its nuclear security, but these efforts are hindered due to the secrecy Pakistan maintains around its weapons, and fears aired

publicly in Pakistan that US Special Operations Forces might attempt to seize Pakistan's entire nuclear arsenal – an action that is almost certainly outside the actual capabilities of US forces.³⁸¹ As a result, information sharing between Pakistan and the US regarding nuclear security remains extremely limited, and consists mostly of US officials sharing best practices and various technical options which will increase the reliability of Pakistani security measures.³⁸²

The US military does maintain the capability to secure and “render safe” a nuclear weapon which has fallen into the hands of terrorists. Former Chairman of the Joint Chiefs of Staff Hugh Shelton has been quoted saying that US Special Operations units were already conducting these sorts of operations in the 1990s, and now regularly rotate through Central Asia in case nuclear weapons or fissile material are captured by a terrorist group.³⁸³ Former National Security Council Director for Combatting Terrorism Strategy Michele Malvesti has also written that this is “arguably the nation's most critical capability by virtue of their counterproliferation mission.”³⁸⁴

However, for all the potency of US forces, the size, complexity, and dispersed posture of the Pakistani nuclear force requires that real and lasting security efforts focus on bolstering Pakistani security measures and encouraging greater transparency in terms of its security measures, nuclear doctrine, and command and control structures. This is likely the only way to alleviate international fears over the security of Pakistani nuclear weapons.

The Indian Navy, China, Pakistan, and South Asian Maritime Security

It is the air-sea balance in India-Pakistani forces, rather than the air-land balance – that is most likely to have a broader regional impact on the IOR. While past conflicts have focused on land-air battles, India and Pakistan are involved in an ongoing sea-air arms race, and this could lead to one or both sides interfering with local maritime traffic as well as a more serious sea-air battle in any future conflict.

India has a much greater lead over Pakistan in sea power than in air and land forces. **Figure VII.12** shows this imbalance in terms of major combat vessels. India has one carrier and a nuclear submarine. It has a comparatively large mix of amphibious ships -- including one large LPD, 5 LMs, and 5 LSTs – and 50 support ships. It has a marine force of 1,200 men and 8 LCUs. and a substantial naval aviation force of 7,000 men. Pakistan a 1,600-man marine force, but no carrier or nuclear submarine program. It only 4 has landing craft, and 11 smaller logistic and support craft.

The comparative size of Indian and Pakistani naval aviation is shown in **Figure VII.10**.

Indian Naval Buildup and Capability for Sea Control

India's naval order of battle is in many ways a smaller version of an advanced Western blue-water navy, fully support by an air component and missile forces, and constitutes the most powerful naval force amongst countries actually bordering the Indian Ocean. Indian naval planning focuses on the creation of a powerful maritime strike capability employing sophisticated surveillance platforms – to include unmanned aerial surveillance – and air- and surface-launched precision guided munitions.³⁸⁵

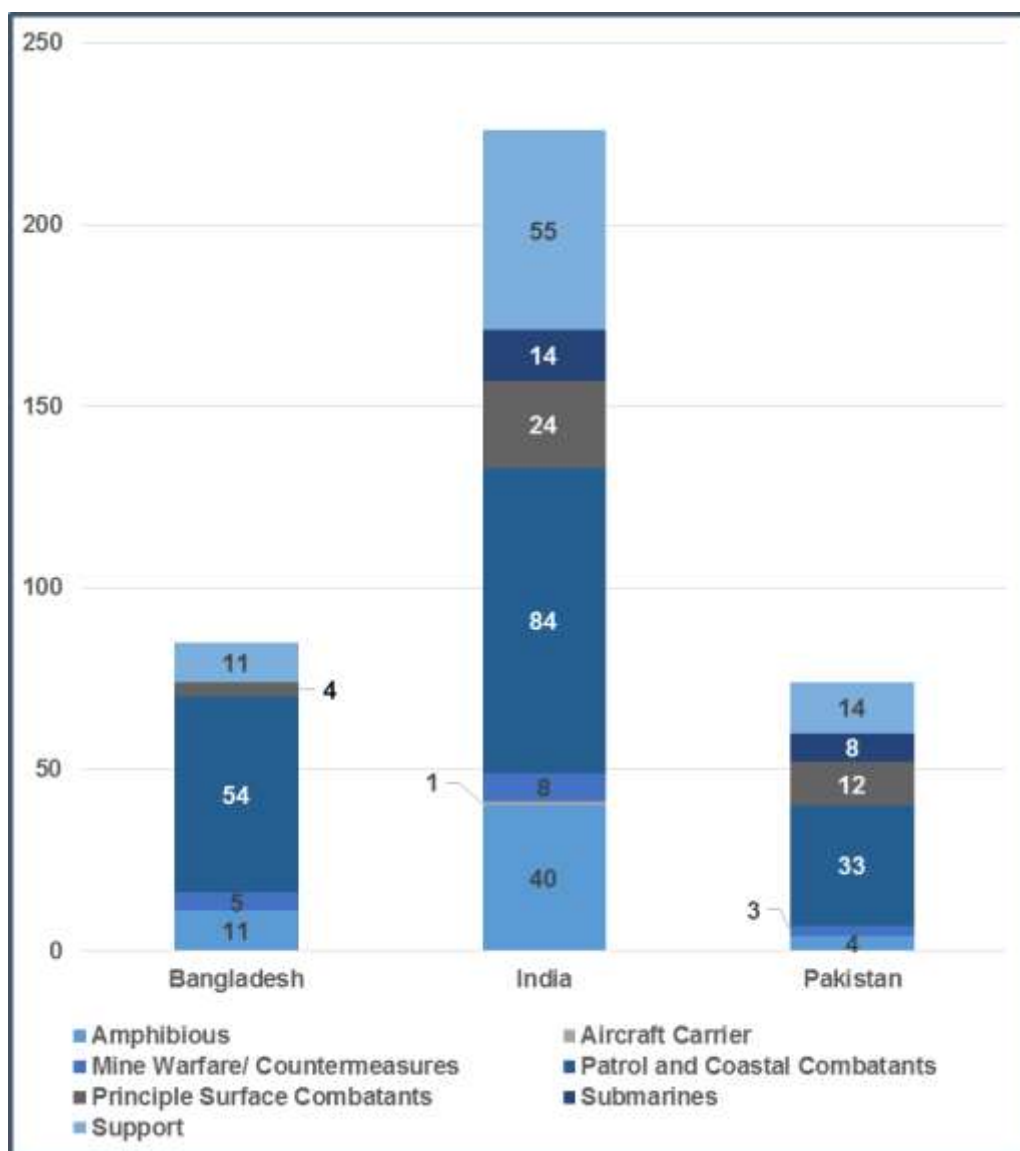
India's forces are designed primarily for sea control and maritime power projection, allowing India to protect maritime shipping and trade as well as its energy supplies. This is a mark of naval dominance over the other states (with the exception of Australia) fronting the Indian Ocean, which do not have powerful enough naval forces to engage in activities outside of coastal defense.

According to IISS, the Indian Navy receives 18% of the national defense budget, and has major procurement programs aimed at modernizing its naval capabilities.³⁸⁶ This plan centers on India's acquisition of aircraft carriers in order to have two combat-ready carriers at any given time.³⁸⁷ For the time being these include the newly-acquired *Vikramditya*, a former Soviet carrier which has was transferred to India at the end of 2013, as well as the older *Viraat*, which initially entered service with the Royal Navy in 1959.

Indian naval aviation is further bolstered by its acquisition of eight P-8I aircraft from the US, the first of which was delivered in December 2012.³⁸⁸ These aircraft are highly capable anti-submarine and anti-surface warfare platforms, which include advanced radars and magnetic detection equipment to track both surface and sub-surface targets, and can be armed with AGM-84 cruise missiles in both anti-ship and standoff land-attack variants, Mk54 torpedoes, and sea mines.³⁸⁹ India's naval aviation assets are complimented by sophisticated surface and submarine warfare capabilities, including 11 guided missile destroyers, 11 guided missile frigates, and 14 diesel fast attack submarines.³⁹⁰

India is developing six new *Scorpena* class diesel-electric submarines, and is also developing an indigenous ballistic missile submarine, capable of firing the K-15 ballistic missile with a range of 750km.³⁹¹ This will give India a highly survivable nuclear missile capability, akin to the US nuclear triad, and will allow for a guaranteed second strike capability in the event of a nuclear exchange.

India has further enhanced its naval security by pursuing extensive naval agreements with a number of other countries in the region as well as out-region partners including Vietnam, Indonesia, Malaysia, and Japan. The Indian Navy also regularly conducts exercises with the US and Royal Australian Navies.³⁹²

Figure VII.9: South Asian Major Combat Ships by Country

Source: Adapted From IISS, *The Military Balance*, 2014, Chapter Six: Asia.

Figure VII.10: Indian and Pakistani Naval Aviation**India****FIGHTER/GROUND ATTACK**

1 sqn with MiG-29K/KUB *Fulcrum*

1 sqn with *Sea Harrier* FRS 1 (Mk51); *Sea Harrier* T-4N (T-60)

ANTI SUBMARINE WARFARE

4 sqn with Ka-25 *Hormone*; Ka-28 *Helix A*; SA316B *Alouette III* (*Chetak*); *Sea King* Mk42A/B

MARITIME PATROL

2 sqn with BN-2 *Islander*; Do-228-101; Il-38 *May*; Tu-142M *Bear F*

AIRBORNE EARLY WARNING & CONTROL

1 sqn with Ka-31 *Helix B*

SEARCH & RESCUE

1 sqn with SA316B *Alouette III* (*Chetak*); *Sea King* Mk42C

TRANSPORT

1 (comms) sqn with Do-228
1 sqn with HS-748M (HAL-784M)

TRAINING

1 sqn with HJT-16 MkI *Kiran*; HJT-16 MkII *Kiran II*

TRANSPORT HELICOPTER

1 sqn with UH-3H *Sea King*

ISR UAV

1 sqn with *Heron*; *Searcher* MkII

AIRCRAFT 34 combat capable

FTR 15 MiG-29K/KUB *Fulcrum*

FGA 10: 8 *Sea Harrier* FRS 1 (Mk51); 2 *Sea Harrier* T-4N (T-60)

ASW 9: 5 Il-38 *May*; 4 Tu-142M *Bear F*

MP 14 Do-228-101

TPT 37: **Light** 27: 17 BN-2 *Islander*; 10 Do-228 **PAX** 10

HS-748M (HAL-784M)

TRG 12: 6 HJT-16 MkI *Kiran*; 6 HJT-16 MkII *Kiran II*

HELICOPTERS

ASW 54: 7 Ka-25 *Hormone*; 12 Ka-28 *Helix A*; 21 *Sea King* Mk42A; 14 *Sea King* Mk42B

MRH 53: 4 *Dhruv*; 26 SA316B *Alouette III* (*Chetak*); 23 SA319 *Alouette III*

AEW 9 Ka-31 *Helix B*

TPT • Medium 11: 5 *Sea King* Mk42C; up to 6 UH-3H *Sea King*

UAV • ISR 12 **Heavy** 4 *Heron* **Medium** 7 *Searcher* Mk II

MISSILES

AShM *Sea Eagle* (service status unclear); KH-35/*Sea Skua* (*Bear* and *May* ac cleared to fire Kh-35)

ASCM PJ-10 *Brahmos*

AAM • IR R-550 *Magic* 2/R-550 *Magic*; R-73 (AA-11 *Archer*) **IR/SARH** R-27 (AA-10 *Alamo*) **ARH** *Derby*; R-77 (AA-12 *Adder*)

Pakistan**AIRCRAFT** 7 ac combat capable

ASW 7: 3 *Atlantic*; 4 P-3C *Orion* (additional 2-4 ac on order)

MP 6 F-27-200 MPA

TPT • PAX 1 Hawker 850XP

HELICOPTERS

ASW 12: 5 *Sea King* Mk45; 7 Z-9C *Haitun*

MRH 6 SA319B *Alouette III*

MSL • AShM AM-39 *Exocet*

Source: Adapted From IISS, *The Military Balance*, 2014, Chapter Six: Asia.

Pakistan's Asymmetric Maritime Capabilities

Pakistan, India's longtime international rival, lacks the conventional naval forces to challenge India. With 10 frigates and 8 submarines, Pakistan has some ability to protect its coastline and inhibit an adversary's seaborne maneuverability. It cannot sustain an intense naval campaign against an enemy like India with its advanced naval assets.³⁹³

If a confrontation were to take place, Pakistan would probably try to apply asymmetric warfare tactics to circumvent India's conventional strengths, much as it has done in the land-warfare domain. While maritime terrorism has historically been less effective than its land-based counterpart, it is not without precedent. While al-Qaeda's 2000 attack on the *USS Cole* in Aden Harbor is the most prominent example, South Asia also has a history of seaborne terrorist attacks against naval and commercial maritime assets.

This includes the 2008 Mumbai attack by Pakistani-based terrorist group Lashkar-e-Taiba (reportedly with some degree of support from Pakistani military intelligence), in which the attackers departed by boat from Karachi, hijacked a fishing vessel at sea, and used it to make an amphibious landing in seaside slums in Mumbai, away from Indian police presence. The attackers then split into small cells to attack multiple dispersed targets around the city center, while their actions were coordinated by a command group in Pakistan via voice and text-message communications on cellular phone networks.³⁹⁴

Another example is the Sea Tigers, the maritime suicide bombing unit of the Liberation Tigers of Tamil-Elam (LTTE) in Sri Lanka. This group was able to conduct repeated large scale attacks against the Sri Lankan Navy using fast attack craft, swarming tactics, vessel-borne IEDs, and mines placed in harbors and sea lanes by divers.³⁹⁵ Its actions were supported by "warehouse ships" that stored weapons, ammunition, and supplies and hid in shipping and fishing fleets sometimes thousands of kilometers from the engagement area, effectively creating a sanctuary for terrorist actions in international waters.

Pakistan could choose to employ similar tactics in the event of hostilities with India as a means to inflict damage on India's more capable navy, as well as on its commercial shipping, which is critical for India's economy. Pakistan would likely be even more capable than the LTTE in such an effort as it could apply the resources of a state towards organizing, training, and equipping a highly capable maritime asymmetric force, while still maintaining a semblance of plausible deniability should that group conduct attacks against civilian targets.

The use of such asymmetric tactics and forces has been the Pakistani model for advancing its interests in Afghanistan and Kashmir since at least the 1980s.³⁹⁶ As the Mumbai case demonstrates, the Pakistani military can provide superior training, intelligence, and command and control than a non-state actor would otherwise be able to achieve. This would be critical in maritime asymmetric warfare due to the need for a networked command structure to coordinate swarming attacks against a sophisticated naval force such as the Indian Navy.

India has responded to this threat. As its severity became apparent in the wake of the 2008 Mumbai attacks, India established the Sagar Prahari Bal, a maritime force protection group with 1,000 Marines and 80 patrol boats.³⁹⁷ India also has a maritime special operations unit, the Special Forces Marine Commando, with a strength of 2,000 Marines.³⁹⁸ These forces are supported by a Coast Guard of some 9,500 sailors and 76 patrol vessels of various classes.

The development of these units suggests that India takes the threat of maritime terrorism and asymmetric warfare seriously. However, investments in the Indian Navy remain focused on the development of a blue-water battle fleet capable of confronting a technologically sophisticated adversary at sea, despite the fact that a confrontation with Islamist militants (potentially supported by Pakistani ISI) remains far more likely than a major engagement against the Chinese People's Liberation Army Navy.

While maritime terrorism has historically been far less effective than its land-based counterpart, it is not without precedent. While al-Qaeda's 2000 attack on the *USS Cole* in Aden Harbor is the most prominent example, South Asia also has a history of seaborne terrorist attacks against naval and commercial maritime assets.

This includes the 2008 Mumbai attack by Pakistani-based terrorist group Lashkar-e-Taiba (reportedly with some degree of support from Pakistani military intelligence), in which the attackers departed by boat from Karachi, hijacked a fishing vessel at sea, and used it to make an amphibious landing in seaside slums in Mumbai, away from Indian police presence. The attackers then split into small cells to simultaneously attack multiple dispersed targets around the city center, shown in **Figure VII.11**, while their actions were coordinated by a command group in Pakistan via voice and text-message communications on cellular phone networks.³⁹⁹

Figure VII.11: Mumbai Attack Sites



Source: Dr. Abdullah Toukan and "Mumbai Attack Sites," *The New York Times*, August 29, 2012, Accessed November 8, 2013. <http://www.nytimes.com/interactive/2008/11/26/world/asia/20081126-mumbai-attacks.html>

Another example is the Sea Tigers, the maritime suicide bombing unit of the Liberation Tigers of Tamil-Elam (LTTE) in Sri Lanka. This group was able to conduct repeated large scale attacks against the Sri Lankan Navy using fast attack craft, swarming tactics, vessel-borne IEDs, and mines placed in harbors and sea lanes by divers.⁴⁰⁰

Pakistan could choose to employ similar tactics in the event of hostilities with India as a means to inflict damage on India's more capable navy, as well as on its commercial shipping, which is critical for India's economy. Pakistan would likely be even more capable than the LTTE in such an effort as it could apply the resources of a state towards organizing, training, and equipping a highly capable maritime asymmetric force, while still maintaining a semblance of plausible deniability should that group conduct attacks against civilian targets.

This has been a Pakistani model for advancing its interests in Afghanistan and Kashmir since at least the 1980s.⁴⁰¹ As the Mumbai case demonstrates, the Pakistani military can provide superior training, intelligence, and command and control than a non-state actor would otherwise be able to achieve. This would be critical in maritime asymmetric warfare due to the need for a networked command structure to coordinate swarming attacks against a sophisticated naval force such as the Indian Navy.

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China as a Growing Factor in Indian and Pakistani Sea-Air Developments

At the same time, the extent to the tensions between India and Pakistan will be affected by Indian concern over China's air-sea-missile build up is a growing uncertainty in making term strategic assessments of the military situation in the IOR. India has long engaged in engaged in a confrontation with China over its land border, and while this conflict is far from the IOR, but inevitably affects Indian attitudes towards China. It is clear that the history of Indian conflicts, clashes, and tensions with China.

India also has long seen itself as the dominant naval power in the IOR in spite of the role of US air and sea forces have played. India may accept US maritime superiority, particularly since it has never had any strategic impact on India, but China is a very different story. China's emergence as major air-sea power is a challenge to India's position in the IOR; it is also a potential source of aid to Pakistan, and is a future source of political or military challenges to India.

Chinese naval operations in the Indian Ocean have centered on counter-piracy and the protection of maritime trade, and Admiral Terry McKnight, who commanded the multinational counter-

piracy Combined Task Force-151 in 2009 recounts that the Chinese Navy maintained friendly and cooperative relations with other navies operating in the region.⁴⁰⁴

China has also become involved in port construction and upgrades at several locations around the Indian Ocean, including the development of a new facility at Gwadar in Pakistan. These activities, along with Chinese port development agreements with various countries in the Indian Ocean have led to concerns that there is a Chinese “String of Pearls” strategy for a sustained naval presence throughout the region.⁴⁰⁵ Some posit that China is constructing naval ports around the world in ways that could threaten India, including the ability to halt massive amounts of their trade via maritime chokepoints. In addition to the Gwadar port, China has also constructed a port in Karachi, Pakistan, several ports in Myanmar, and container terminals in Sri Lanka and Bangladesh.

As yet, however, none of these ports have become active naval bases. They are a long way from ports and bases on the Chinese mainland, and China would also need to be able to establish bases for its naval and air forces, and such bases would be subject to the control of the host country.⁴⁰⁶ It is likely that some of the more current fears about the “String of Pearls” have been exaggerated, but there is little question such a basing capability could evolve over time, and that the possibility has already contributed to a growing Indian concern over Chinese intensions in the region, particularly since Chinese ships began activity in the Indian Ocean in 2008 -- for the first time in 500 years.

While China seems to be focused on the Pacific, India cannot ignore the fact that China has recently been developing its aircraft carrier and other naval offensive weapons capabilities. These include new surface and sub-surface combatants such as the Type 52 destroyer and Russian *Kilo* class diesel-electric fast attack submarines. This mix of weapon systems indicates that China intends to develop an advanced blue-water naval capability. This force is currently focused on waters closer to China, and is not yet capable of projecting major combat power into the Indian Ocean in a manner that would threaten the Indian Navy.

It is clear that the longstanding tensions between India and China, the emergence of both countries as regional naval powers, and China’s close relations with Pakistan have led India to plan for naval competition and even confrontation with China in the Indian Ocean. Tensions between India and China rose throughout 2013 due to an incursion by Chinese forces into an Indian-controlled portion of disputed territory in Kashmir.⁴⁰⁷ While this dispute itself is currently confined to the land domain, it reinforces the sense in India that China is willing to act aggressively towards India, which will inevitably have repercussions for Indian planning with regard to China’s naval presence in the IOR.

India: An Emerging Global Economic Power?

India is a nation under massive demographic pressure. The US Census Bureau estimates that its population increased from 370 million in 1950 to 1,221 million in 2013, and will increase to 1,396 million in 2025 and 1,657 million in 2050.⁴⁰⁸ Even so, if India can avoid major conflicts and deal with its internal stability problems, it still has the potential to become a major world economic power and a major regional military power.

As yet, however, India has been unable to establish either a stable pattern of economic growth, or the quality of governance and political stability necessary to achieve this status. As the debates that shaped India’s election in 2014, have highlighted, India remains corrupt, deeply divided by

province, caught up in sectarian and ethnic divisions, and still presents serious barriers to outside and internal investment and economic development.

Politics, Governance, and Development Mix Progress with Self-Inflicted Wounds

The World Bank governance index for 2013 rates India as having moderate accountability, effectiveness of governance, and rule of law, but low political stability, absence of violence and substantial corruption.⁴⁰⁹ Transparency International ranked India as 94th in world in terms of overall corruption – a rating that preceded much of India's current internal political debate over its high level of corruption.⁴¹⁰ The World Bank ranked India 134th in the world in ease of doing business in 2014, with exceptional barriers in starting a business, enforcing contracts, and construction permits.⁴¹¹

The CIA reports that India's per capita income only averaged \$3,800 in 2012, ranking a low 168th in the world, with almost 30% of its population below the poverty line. It summarized India's political and economic status as follows in January 2014:⁴¹²

India and Pakistan... have fought three wars since independence, the last of which was in 1971 and resulted in East Pakistan becoming the separate nation of Bangladesh. India's nuclear weapons tests in 1998 emboldened Pakistan to conduct its own tests that same year. In November 2008, terrorists originating from Pakistan conducted a series of coordinated attacks in Mumbai, India's financial capital.

Despite pressing problems such as significant overpopulation, environmental degradation, extensive poverty, and widespread corruption, economic growth following the launch of economic reforms in 1991 and a massive youthful population are driving India's emergence as a regional and global power.

...India is developing into an open-market economy, yet traces of its past autarkic policies remain. Economic liberalization measures, including industrial deregulation, privatization of state-owned enterprises, and reduced controls on foreign trade and investment, began in the early 1990s and have served to accelerate the country's growth, which averaged under 7% per year since 1997.

India's diverse economy encompasses traditional village farming, modern agriculture, handicrafts, a wide range of modern industries, and a multitude of services. Slightly more than half of the work force is in agriculture, but services are the major source of economic growth, accounting for nearly two-thirds of India's output, with less than one-third of its labor force. India has capitalized on its large educated English-speaking population to become a major exporter of information technology services, business outsourcing services, and software workers.

In 2010, the Indian economy rebounded robustly from the global financial crisis - in large part because of strong domestic demand - and growth exceeded 8% year-on-year in real terms. However, India's economic growth began slowing in 2011 because of a slowdown in government spending and a decline in investment, caused by investor pessimism about the government's commitment to further economic reforms and about the global situation.

High international crude prices have exacerbated the government's fuel subsidy expenditures, contributing to a higher fiscal deficit and a worsening current account deficit. In late 2012, the Indian Government announced additional reforms and deficit reduction measures to reverse India's slowdown, including allowing higher levels of foreign participation in direct investment in the economy.

The outlook for India's medium-term growth is positive due to a young population and corresponding low dependency ratio, healthy savings and investment rates, and increasing integration into the global economy. India has many long-term challenges that it has yet to fully address, including poverty, corruption, violence and discrimination against women and girls, an inefficient power generation and distribution system, ineffective enforcement of intellectual property rights, decades-long civil litigation dockets, inadequate transport and agricultural infrastructure, limited non-agricultural employment opportunities, inadequate availability of quality basic and higher education, and accommodating rural-to-urban migration.

The World Bank's [India Development Update of October 2013](#) was more favorable but still guarded,⁴¹³

...although the recent turmoil in global markets has amplified India's macroeconomic vulnerabilities, the country's growth potential remains high. Indeed, the current economic turmoil provides [India](#) an opportunity to accelerate growth momentum through further reforms that improve the business environment, strengthen the banking and financial sector, narrow the infrastructure gap, and enhance fiscal space.

The report says that India's macroeconomic environment is expected to improve, with growth likely to accelerate gradually over the next two years. Economic activity is expected to pick up in the second half of FY 2014, although the speed of economic recovery could be impacted by the country's present vulnerabilities—high headline inflation, an elevated current account deficit, and rising pressure on fiscal balances from the depreciation of the rupee. Nonetheless, core inflation is trending down, a bumper crop is expected in agriculture, and exports are likely to benefit substantially from the rupee's depreciation.

However, with the currencies of many other emerging economies weakening against the dollar, lasting improvements in export competitiveness will require policy efforts to fully take advantage of the emerging global opportunities. The report finds that growth has become more effective at reducing poverty. Between 2005 and 2012, India lifted 137 million people out of poverty and reduced the poverty rate to 22%.

It notes that a much larger fraction of the decline in poverty is taking place in low-income states, and the poorest 40% are increasingly sharing the benefits of growth. On the other hand, inequality has continued to increase—the Gini coefficient rose from 30.9 in 2005 to 32.3 in 2012—and growth of the bottom 40% has not yet fully caught up with the average. With more than half of India's population living between one and two poverty lines, many of the newly non-poor remain vulnerable to falling back into poverty as a result of minor shocks.

Transnational Problems and Counterterrorism

As discussed earlier, India faces several serious transnational problems, due primarily to Pakistan's longstanding support for terrorist and insurgent groups – many of which now operate semi-autonomously from Pakistani control – but also due to internal security threats from Maoist terrorists and separatist groups.

India's counterterrorism efforts have only limited to moderate effectiveness, and reporting tends to undercount domestic ethnic and religious violence that is not tied to outside sources. The US State Department summarizes these challenges and India's responses as follows:⁴¹⁴

According to the South Asia Terrorism Portal, 805 people were killed as a result of terrorist attacks in India in 2012. While this figure represents a 25 percent decrease from the previous year, India remained subject to violent terrorist attacks and continued to be one of the most persistently targeted countries by transnational terrorist groups such as Lashkar-e-Tayyiba (LeT). Included in the total number of fatalities were the 364 deaths ascribed to left-wing violent extremism, almost 80 percent of which were Communist Party of India Maoist or Maoist/Naxalite violence, which the Indian government considers its most serious internal security threat. To date, those groups have not specifically targeted U.S. or other international interests.

In 2012, Indian sources continued to attribute violence and deaths in Jammu and Kashmir to transnational terrorist groups it alleges are backed by Pakistan. India and Pakistan attempted to decrease tensions in their bilateral relationship by increasing official dialogue between their two governments, lessening trade restrictions, and relaxing some visa requirements in 2012. Continued allegations of violations of the Line of Control between India and Pakistan (the border along Jammu and Kashmir), however, and Indian concerns about Pakistani-based terrorist groups remained impediments to normalizing relations.

In December, the Indian government reached an agreement with the Pakistani government for a second visit of a Pakistan Judicial Commission to visit India to cross-examine witnesses for the Mumbai attack prosecutions in Pakistan, but the visit must be approved by the courts in both countries; this had not occurred by year's end. Terrorist opponents of better India-Pakistan relations, including LeT and its leader Hafiz Saeed, continued to call for violent attacks against India.

The United States and India increased counterterrorism capacity building efforts and cooperation, with the Indians participating in several courses provided by the Department of State's Antiterrorism Assistance program, along with other regional capacity building programs. The annual U.S.-India Counterterrorism Joint Working Group meeting allowed both countries to share counterterrorism perspectives and policies, as well as propose initiatives for future cooperation. In addition, the U.S. Federal Bureau of Investigation, through the Office of the Legal Attaché, conducted additional exchanges with Indian law enforcement personnel, and DHS, through the Homeland Security Dialogue with the Ministry of Home Affairs, expanded its interaction with Indian officials on cyber security, counterfeit Indian currency that could be used to finance terrorism, port security, and megacity policing initiatives.

As part of its strategy to increase border security, the Ministry of Home Affairs Department of Border Management is building fences and roads and installing floodlights along both the Indo-Pakistan border and the Indo-Bangladesh border. In 2012, land was identified for the establishment of 116 of 131 new coastal police stations and the land acquisition process began for 74 of those stations as part of the government's Coastal Security Plan.

The Government of India's efforts to establish a National Counterterrorism Center were stalled when Chief Ministers from several states objected to its establishment on the grounds that it infringed upon the states' constitutional rights and responsibilities to maintain law and order. Earlier 2009 initiatives to establish a National Intelligence Grid, a platform for information-sharing between law enforcement, intelligence services, and other government agencies, and a national crime record database had not been implemented by year's end, but some progress was reported. The Crime and Criminal Tracking Network and Systems will create a nation-wide environment for the real-time sharing of crime and criminal information.

...India is a member of the Financial Action Task Force (FATF) and two FATF-style regional bodies; the Eurasian Group on Combating Money Laundering and Terrorist Financing and the Asia/Pacific Group on Money Laundering. The international community has targeted LeT individuals and entities under terrorism sanctions, and through FATF, the United States has worked with India to help improve its anti-money laundering/combating the financing of terrorism regime. The number of cases under investigation has continued to increase, but the number of persons convicted has remained low in comparison with the terrorism finance risk faced by India.

... India is a founding member of the Global Counterterrorism Forum (GCTF) and was an active participant in the GCTF and other UN forums on counterterrorism throughout the year. The Indian and Bangladeshi governments agreed in December to enhance cooperation under their bilateral Coordinated Border Management Plan to control illegal cross-border activities and reviewed the functioning of their system for sharing information on security-related matters.

... India's counter radicalization and violent extremism efforts are mostly directed by state and local authorities; under the Indian Constitution police and public order issues are state functions. The Indian government has programs that attempt to rehabilitate and integrate various groups, mostly insurgents, back into the mainstream of society, such as the "Scheme for Surrender cum-Rehabilitation of militants in North East." While not a counter radicalization scheme per se, it is directed at disaffected members of Indian society who support separatist and at times violent movements. Indian government officials have raised concerns about how social media and the internet can be used to stir communal unrest and radicalization. However, there was no national program or policy on countering radicalization or violent extremism.

Reporting by the US National Consortium for the Study of Terrorism, which has ties to the US National Counterterrorism Center, rated India as the fourth most violent single country in the world in terms of internal terrorism in 2012.⁴¹⁵

Pakistan: A State That Never Quite Fails But Does Not Succeed

Pakistan is another state under intense demographic pressure. The US Census Bureau estimates that its population increased from 40.4 million in 1950 to 193.2 million in 2013, and will increase to 228.46 million in 2025 and 290.8 million in 2050.⁴¹⁶ Pakistan is making some progress towards

a more stable pattern of democratic elections, but has failed to make effective progress in terms of internal stability and security, economic reform, and improved governance.

The World Bank governance index for 2013 rates Pakistan as having poor accountability, poor effectiveness of governance, poor regulatory accountability, very poor rule of law, and very high corruption.⁴¹⁷ Transparency International ranked Pakistan 127th in world in terms of overall corruption, with major problems in terms of budget openness and controlling corruption.⁴¹⁸ The World Bank ranked Pakistan at 110th in the world in ease of doing business in 2014, with exceptional problems in getting electricity, paying taxes, and enforcing contracts.⁴¹⁹

The CIA reports that Pakistan's per capita income only averaged \$3,100 in 2012, ranking a low 175th in the world, but had not current estimate of its population below the poverty line. It summarized its current political and economic situation as follows in early 2014:⁴²⁰

The separation in 1947 of British India into the Muslim state of Pakistan (with West and East sections) and largely Hindu India was never satisfactorily resolved, and India and Pakistan fought two wars - in 1947-48 and 1965 - over the disputed Kashmir territory. A third war between these countries in 1971 - in which India capitalized on Islamabad's marginalization of Bengalis in Pakistani politics - resulted in East Pakistan becoming the separate nation of Bangladesh.

In response to Indian nuclear weapons testing, Pakistan conducted its own tests in 1998. India-Pakistan relations have been rocky since the November 2008 Mumbai attacks, but both countries are taking small steps to put relations back on track.

In February 2008, Pakistan held parliamentary elections and in September 2008, after the resignation of former President MUSHARRAF, elected Asif Ali ZARDARI to the presidency. Pakistani government and military leaders are struggling to control domestic insurgents, many of whom are located in the tribal areas adjacent to the border with Afghanistan. In January 2012, Pakistan assumed a nonpermanent seat on the UN Security Council for the 2012-13 term.

Decades of internal political disputes and low levels of foreign investment have led to slow growth and underdevelopment in Pakistan. Agriculture accounts for more than one-fifth of output and two-fifths of employment. Textiles account for most of Pakistan's export earnings, and Pakistan's failure to expand a viable export base for other manufactures has left the country vulnerable to shifts in world demand.

Official unemployment is under 6%, but this fails to capture the true picture, because much of the economy is informal and underemployment remains high. Over the past few years, low growth and high inflation, led by a spurt in food prices, have increased the amount of poverty - the UN Human Development Report estimated poverty in 2011 at almost 50% of the population. Inflation has worsened the situation, climbing from 7.7% in 2007 to almost 12% for 2011, before declining to 10% in 2012. As a result of political and economic instability, the Pakistani rupee has depreciated more than 40% since 2007.

The government agreed to an International Monetary Fund Standby Arrangement in November 2008 in response to a balance of payments crisis. Although the economy has stabilized since the crisis, it has failed to recover. Foreign investment has not returned, due to investor concerns related to governance, energy, security, and a slow-down in the global economy. Remittances from overseas workers, averaging about \$1 billion a month since March 2011, remain a bright spot for Pakistan. However, after a small current account surplus in fiscal year 2011 (July 2010/June 2011), Pakistan's current account turned to deficit in fiscal year 2012, spurred by higher prices for imported oil and lower prices for exported cotton.

Pakistan remains stuck in a low-income, low-growth trap, with growth averaging about 3% per year from 2008 to 2012. Pakistan must address long standing issues related to government revenues and energy production in order to spur the amount of economic growth that will be necessary to employ its growing and rapidly urbanizing population, more than half of which is under 22. Other long term challenges include expanding investment in education and healthcare, adapting to the effects of climate change and natural disasters, and reducing dependence on foreign donors.

Pakistan and India have made cyclical efforts at creating stable, friendly relations, but every such effort has so far failed. As a result, Pakistan is stuck in a pattern of military confrontation it cannot really afford and where it cannot win. It is increasingly relying on nuclear weapons and support of extremist or terrorist movements in dealing with India – efforts that have backfired in terms of its own internal stability and terrorist attacks. The CIA describes Pakistan's overall mix of transnational challenges as follows:⁴²¹

...various talks and confidence-building measures cautiously have begun to defuse tensions over Kashmir, particularly since the October 2005 earthquake in the region; Kashmir nevertheless remains the site of the world's largest and most militarized territorial dispute with portions under the de facto administration of China (Aksai Chin), India (Jammu and Kashmir), and Pakistan (Azad Kashmir and Northern Areas);

UN Military Observer Group in India and Pakistan has maintained a small group of peacekeepers since 1949; India does not recognize Pakistan's ceding historic Kashmir lands to China in 1964; India and Pakistan have maintained their 2004 cease-fire in Kashmir and initiated discussions on defusing the armed standoff in the Siachen glacier region;

Pakistan protests India's fencing the highly militarized Line of Control and construction of the Baglihar Dam on the Chenab River in Jammu and Kashmir, which is part of the larger dispute on water sharing of the Indus River and its tributaries; to defuse tensions and prepare for discussions on a maritime boundary, India and Pakistan seek technical resolution of the disputed boundary in Sir Creek estuary at the mouth of the Rann of Kutch in the Arabian Sea; Pakistani maps continue to show the Junagadh claim in India's Gujarat State; by 2005,

Pakistan, with UN assistance, repatriated 2.3 million Afghan refugees leaving slightly more than a million, many of whom remain at their own choosing; Pakistan has sent troops across and built fences along some remote tribal areas of its treaty-defined Durand Line border with Afghanistan, which serve as bases for foreign terrorists and other illegal activities; Afghan, Coalition, and Pakistan military meet periodically to clarify the alignment of the boundary on the ground and on maps...

This description does not provide a realistic picture of the degree to which Pakistani military and intelligence services have direct ties to the Taliban in Afghanistan, Pakistan has failed to limit the existence of Afghan insurgents in its FATA area, and still covertly supports Islamist extremist groups that have committed acts of terrorism in Kashmir and the rest of India. The US State Department is somewhat tactful and politically correct in describing the situation in Pakistan than other countries, in part because of the US need to have Pakistan as a key route in removing its forces from Afghanistan but it still reports an increasing level of violence that is supported by studies by Pakistani analysts and NGOs:⁴²²

In 2012, Pakistan remained an important partner in counterterrorism efforts against al-Qa'ida (AQ). Pakistan also undertook operations against terrorist groups that carried out attacks within Pakistan, such as the Tehrik-e Taliban Pakistan (TTP or Pakistani Taliban). Pakistan did not take significant action against some other violent extremist groups, including Lashkar-e-Tayyiba (LeT), which continued to operate and raise funds openly in Pakistan through its political and charitable wing, Jamaat ud Dawa (JuD). The Afghan Taliban and Haqqani Network (HQN) continued to conduct operations against U.S. and Coalition Forces in Afghanistan from Pakistan. Pakistan took steps to support an Afghan peace process and publicly called on the Taliban to enter into talks with the Afghan government. Hundreds of terrorist attacks occurred nationwide against all sectors of society, including Pakistani military and security personnel.

Pakistani officials continued to make public statements against terrorism and violent extremism. The widely publicized shooting of a 14-year-old girl, Malala Yousufzai, by the TTP led to public calls for the government to do more against terrorist groups. In March, Pakistan's parliament affirmed its commitment to eliminating terrorism and countering violent extremism. The Government of Pakistan also moved forward several pieces of counterterrorism legislation.

Some banned organizations openly participated in political rallies and forged alliances with religious political parties. In September and October, militant groups and religious parties joined forces to protest and conduct

public demonstrations nationwide over the video *The Innocence of Muslims*. Violence occurred during the early days of the protests. The government and security agencies undertook enhanced security measures during the protests and sought to convince the militant groups to participate peacefully.

Pakistan's Shia minority continued to be targeted in large-scale sectarian attacks, including in Karachi, Balochistan, and northwest Pakistan. Targeted killings of both Shia and Sunni activists occurred in Karachi. The TTP claimed credit for some sectarian attacks during the Shia holiday of Moharram, although increased levels of security prevented many TTP-planned suicide attacks on Shia processions and mosques, according to law enforcement reports. Despite the government's stringent security measures, including a ban on both cell phone usage and motorbikes, a series of four major bombings in Karachi, Dera Ismail Khan, and Rawalpindi marred the Moharram religious week.

...Over 2,000 Pakistani civilians and 680 security forces personnel were killed in terrorist-related incidents in 2012. Terrorist incidents occurred in every province. Terrorists attacked Pakistani military units, police stations, and border checkpoints, and conducted coordinated attacks against two major military installations. Terrorists displayed videos on the internet of the murders and beheadings of security forces. Terrorist groups also targeted police and security officials with suicide bombings and improvised explosive devices (IEDs). Terrorist groups targeted and assassinated tribal elders, members of peace committees, and anti-Taliban government officials. The TTP often claimed responsibility for attacks targeting civilians and security personnel in Pakistan.

... In November, the Cabinet approved the National Counter Terrorism Authority Act of 2012, which was designed to strengthen counterterrorism coordination and information-sharing between security agencies and provincial police and provide a vehicle for national counterterrorism policy and strategy formulation. In December, Pakistan's National Assembly approved the Fair Trial Act, which was designed to provide the necessary legal tools to intelligence agencies, law enforcement agencies, and prosecutors to detect, disrupt, and dismantle terrorist activities and organizations. The law authorizes trial courts to use evidence obtained by electronic interception and surveillance.

Pakistani security forces conducted counterterrorism operations in Khyber Pakhtunkhwa province and throughout the Federally Administered Tribal Areas that resulted in the detention or arrest of thousands of militants. Security forces intercepted large stockpiles of weapons and explosives, and discovered bomb-making facilities.

Pakistan's Anti-Terrorism Courts have a high acquittal rate. Witnesses routinely recant their statements or fail to appear because of threats against them and their families. In June, an Anti-Terrorism Court acquitted four men accused of assisting Faisal Shahzad, the TTP-trained militant who attempted to explode a car bomb in New York City's Times Square in 2010, claiming a lack of evidence. The court would not accept evidence collected by electronic surveillance. The Fair Trial Act, approved by parliament in December, will allow evidence obtained by electronic interception and surveillance to be admitted as evidence in the courts system.

Pakistan did not conclude the trials of seven alleged perpetrators of the 2008 Mumbai attacks, although it continued to maintain a dialogue with India on steps both sides need to take to enable the prosecutions to move forward.

Information sharing and counterterrorism activities with Pakistan's security establishment continued. Pakistani law enforcement reinforced security at U.S. facilities in Pakistan during the protests over the *Innocence of Muslims* video in September 2012, and took steps to ensure the security of U.S. personnel. Long delays in visa processing for U.S. personnel impeded counterterrorism-related assistance and training for security forces and prosecutors.

Pakistan remained a partner nation in the Department of State's Antiterrorism Assistance program, which provided tactical and investigative training at the federal and provincial levels.

...Pakistan is a member of the Asia/Pacific Group on Money Laundering, a Financial Action Task Force (FATF)-style regional body. The FATF named Pakistan on its public statement in February due to Pakistan's failure to address strategic deficiencies in its anti-money laundering/combating the financing of terrorism (AML/CFT) regime. The FATF recommended Pakistan enact legislation to strengthen authorities to prosecute terrorist financing as well as to identify, freeze, and confiscate terrorist assets. The Anti-Terrorism

(Amendment) Act of 2012 introduced in Parliament in December includes several of the recommended changes but still failed to bring Pakistan into compliance with international AML/CFT standards.

In April, the Federal Board of Revenue (FBR), Pakistan's customs and tax authority, established Currency Detection Units in Pakistan's 12 international airports to counter bulk cash smuggling. The FBR also instituted improved information-sharing protocols on counterterrorism-related arrests and seizures.

UN-designated terrorist organizations continued to avoid sanctions by reconstituting themselves under different names, often with little effort to hide their connections to previously banned groups. Although Pakistan added some named groups to its proscribed organizations list, Pakistan needs to take additional steps to implement and enforce UNSCRs 1267/1989, 1988, and 1373.

...Pakistan actively participated in regional and international counterterrorism efforts, including the Global Counterterrorism Forum and the Global Initiative to Combat Nuclear Terrorism. Pakistan commanded Combined Task Force 151, an international naval task force set up to conduct counter-piracy operations in the Gulf of Aden. Pakistan was a partner in the UK's Counterterrorism Prosecution Reform Initiative and the UN Development Program, which worked with provincial governments on rule of law programs in Punjab and Malakand. Pakistan participated in South Asian Association for Regional Cooperation meetings on counterterrorism and participated in multilateral groups where counterterrorism cooperation was discussed, including the Shanghai Cooperation Organization (as an observer) and the D-8, a group of developing nations with large Muslim populations. In October, Pakistan's Interior Minister participated in a Law Enforcement and Counterterrorism working group in Washington, DC.

...Pakistan's military worked with civil society leaders to operate the Sabaoon Rehabilitation Center, a de-radicalization program in Mingora, Swat where radicalized youth are rehabilitated through education and counseling.

In practice, Pakistani counterinsurgency forces have had a mixed record of success to date, and even when they have been tactically successful, they rarely can secure any area they attempt to clear without displacing the population. Pakistani counterterrorism capabilities are compromised by support of extremist movement in pressuring India and Afghanistan, and by the excessive use of force and repression in dealing with Baluchi and other internal opposition groups.

Reporting by the US National Consortium for the Study of Terrorism, which has ties to the US National Counterterrorism Center, rated Pakistan as the most violent single country in the world in terms of internal terrorism in 2012. It had a total of 1,404 documented attacks, 1,848 killed and 3,643 wounded. Its report described Pakistani terrorism as follows:⁴²³

Terrorist attacks in Pakistan were attributed to 18 different perpetrator organizations in 2012; however, Pakistan also had a particularly high percentage of attacks with unidentified perpetrators (82.5%) compared to the global average of unattributed attacks (61.7%).

- Among the organizations identified, Tehrik-e Taliban Pakistan (TTP) was by far the most active. TTP was attributed responsibility for 100 attacks, nearly 500 deaths, and more than 900 injuries in Pakistan in 2012. The group claimed responsibility for 70 percent of these attacks, typically via telephone following the attack.

- More than one-third of all terrorist attacks in Pakistan took place in the Khyber Pakhtunkhwa Province, and an additional 23 percent took place in Balochistan, where a number of Baloch separatist groups were particularly active. Attacks in the Federally Administered Tribal Areas represented 19.6 percent of the total. Eighteen percent of all attacks took place in Sindh Province.

- Consistent with global patterns, the most common type of target in Pakistan was private citizens and property, which represented 23 percent of attacks. Attacks targeting police were 33 percent *less* prevalent in Pakistan compared to the rest of the world. In contrast, attacks against educational institutions were 108 percent *more* prevalent in Pakistan, owing to 120 bombings of girls' and boys' primary, middle, and high schools in 2012. These attacks typically occurred when the schools were unoccupied, causing relatively few casualties (0.39 deaths and 0.79 injuries per attack, on average). Attacks against educational institutions were also relatively common in Nigeria (56), Afghanistan (23), Turkey (21), and Thailand (20); however, the total

number of terrorist attacks against education targets in Pakistan (136) was greater than in these four countries combined.

In short, Pakistan remains a high-risk country because of poor governance and failed economic reform, a military that arms to confront India and supports terrorism outside the country, and serious in country tensions and violence. The Sharif government has promised reforms and efforts to change this situation, but has not had time to attempt major reforms and its capability to make them remains uncertain.

Bangladesh

Bangladesh faces serious demographic and economic challenges and has growing problems with political stability as is two major factions struggle for power and the ruling faction becomes increasingly authoritarian. It is also highly vulnerable to weather factors and to rising sea levels as a result of global warming. Even so, it has made significant political and economic progress. The US Census Bureau estimates that its population increased from 45.6 million in 1950 to 163.7 million in 2013, and will increase to 197.7 million in 2025 and 250.2 million in 2050.⁴²⁴

Bangladesh has failed to make progress in terms of internal stability and security, and improved governance. The World Bank governance index for 2013 rates Bangladesh as having poor accountability, very poor political stability and absence of violence, poor effectiveness of governance, very poor regulatory accountability, very poor rule of law, and poor control of corruption.⁴²⁵ Transparency International ranked Bangladesh as 136th in world in terms of overall corruption, with problems in terms of budget openness.⁴²⁶ The World Bank ranked Bangladesh at 130th in the world in ease of doing business in 2014, with major problems in getting electricity, registering property, registering property, and enforcing contracts.⁴²⁷

The CIA reports that Sri Lanka's per capita income was a relatively high \$6,000 in 2012, ranking a 148th in the world, and had less than 9% of its population below the poverty line. The CIA described Sri Lankan political stability and its economy as follows in January 2014:⁴²⁸

The CIA reported in late 2013 that,⁴²⁹

Calls for greater autonomy and animosity between the eastern and western wings of Pakistan led to a Bengali independence movement. That movement, led by the Awami League (AL) and supported by India, won independence for Bangladesh in 1971, although at least 300,000 civilians died in the process.

The post-independence, AL government faced daunting challenges and in 1975 was overthrown by the military, triggering a series of military coups that resulted in a military-backed government and subsequent creation of the Bangladesh Nationalist Party (BNP). That government also ended in a coup in 1981, followed by military-backed rule until democratic elections in 1991.

The BNP and AL have alternately held power since then, with the exception of a military-backed, emergency caretaker regime that suspended parliamentary elections planned for January 2007 in an effort to reform the political system and root out corruption. That government returned the country to fully democratic rule in December 2008 with the election of the AL and Prime Minister Sheikh HASINA. With the help of international development assistance, Bangladesh has made great progress in food security since independence, and the economy has grown at an average of about 6 percent over the last two decades.

In real terms Bangladesh's economy has grown 5.8% per year since 1996 despite political instability, poor infrastructure, corruption, insufficient power supplies, and slow implementation of economic reforms. Bangladesh remains a poor, overpopulated, and inefficiently-governed nation. Although more than half of GDP is generated through the service sector, 45% of Bangladeshis are employed in the agriculture sector with rice as the single-most-important product. Bangladesh's growth was resilient during the 2008-09 global

financial crisis and recession. Garment exports, totaling \$12.3 billion in FY09 and remittances from overseas Bangladeshis, totaling \$11 billion in FY10, accounted for almost 12% of GDP.

Nevertheless, Bangladesh is too poor to play a meaningful role in maritime or external issues in the IOR. It does face some limited transnational challenges over its borders and maritime rights.⁴³⁰

Bangladesh referred its maritime boundary claims with Burma and India to the International Tribunal on the Law of the Sea;

Indian Prime Minister Singh's September 2011 visit to Bangladesh resulted in the signing of a Protocol to the 1974 Land Boundary Agreement between India and Bangladesh, which had called for the settlement of longstanding boundary disputes over undemarcated areas and the exchange of territorial enclaves, but which had never been implemented;

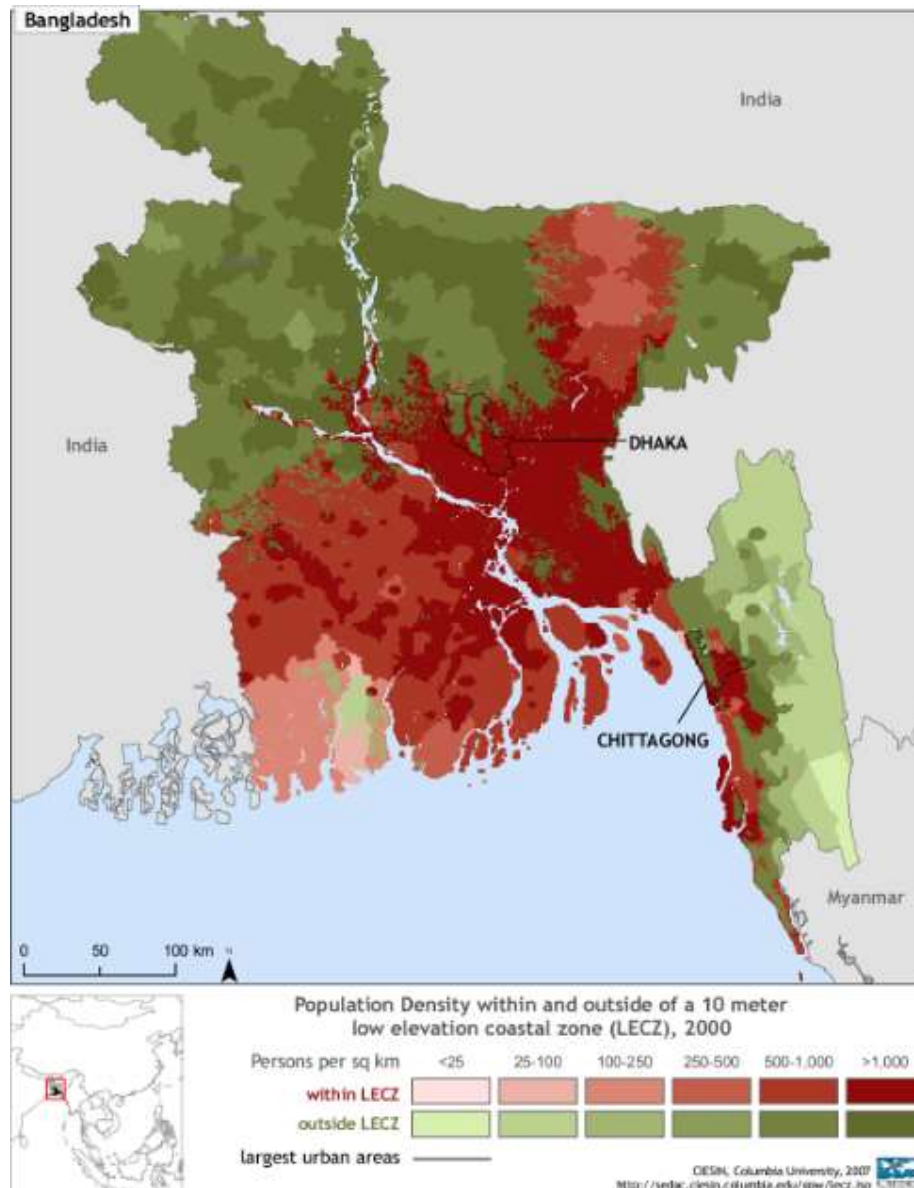
Bangladesh struggles to accommodate 29,000 Rohingya, Burmese Muslim minority from Arakan State, living as refugees in Cox's Bazar; Burmese border authorities are constructing a 200 km (124 mi) wire fence designed to deter illegal cross-border transit and tensions from the military build-up along border.

Exemplar of Future Sources of Instability

Bangladesh in many ways exemplifies the confluence of global trends that may drive instability in the Indian Ocean Region in coming decades, with a large and extremely dense population living in an environmentally vulnerable coastal region, under weak national governance.⁴³¹ This has resulted in half the population living below the poverty line in slum conditions that have allowed for Islamist terrorist groups and transnational criminal organizations to make inroads into Bangladeshi society.⁴³²

Bangladesh has suffered from numerous humanitarian disasters due to the flooding of its low lying terrain and river systems (which are also heavily polluted) during the annual monsoon seasons.⁴³³ This has resulted in a continuous internal migration to major cities such as Dhaka, in which as much as half of the population lives in slums.⁴³⁴ **Figure VII.12** below illustrates the high population density throughout Bangladesh, with those areas of the country that are also 10 meters or less above sea level marked in red. As can be seen from this map, significant portions of the country have greater than 1,000 people per square kilometer packed into areas of low elevation, which are highly susceptible to flooding of the Ganges Delta either during annual monsoons or due to heavy rains upstream.

Figure VII.12: Population Density in Low-Elevation Coastal Zones (LECZ) in Bangladesh



Source: CIESIN, Columbia University. Accessed November 8, 2013.
<http://sedac.ciesin.columbia.edu/data/collection/gpw-v3>

The government of Bangladesh, which *IHS Jane's* characterizes as “politically unstable,” and notable for “poor civilian governance interspersed with military rule,” has been unable to address these issues.⁴³⁵ The military is small, with only 139,000 soldiers, and has in the past been a source of political instability. From 2006-2008 the country was led through a military backed caretaker government, and in 2009 the Bangladesh Rifles staged a mutiny resulting in several dozen deaths.⁴³⁶ In November 2013, a Bangladeshi court sentenced 153 soldiers from the unit to death on charges of torture and murder stemming from the mutiny.⁴³⁷

This situation has allowed for the spread of Islamist militant groups into Bangladesh in a manner similar to that seen in Pakistan, where groups have both political and militant wings which stand opposed to secular democracy, and jointly seek to “Talibanize” the country through the imposition of strict interpretations of Sharia law.⁴³⁸ South Asia expert Selig Harrison noted as early as 2006 that the Al Qaeda network was developing ties to local Islamist groups in order to expand its presence in a strategically located country at the nexus of South and Southeast Asia.⁴³⁹ His report for *The Washington Post* stated that the Bangladeshi Jamaat-e-Islami party had some 15,000 trained militants spread across 19 known camps.

Harrison reported again in 2008 that Bangladeshi jihadist Fazlur Rehman Khalil, one of the six signatories to Osama bin Laden’s original “declaration of war” against the US in 1998, was at-large in Bangladesh, and was likely tied to attacks across India in 2006-2007.⁴⁴⁰

These groups are believed to maintain close ties to the large network of transnational criminal organizations which have developed a significant presence in South Asia in the past decade. The Bangladeshi ports of Chittagong and Cox’s Bazar are known as major havens for arms smugglers transporting sophisticated military hardware including Soviet small arms and explosives.⁴⁴¹ Many of these networks are connected by refugee ties to Myanmar, a country which also has large surpluses of military weaponry in the hands of transnational networks.⁴⁴²

Bangladesh has been able to field a small counter-terrorist unit, the Rapid Action Battalion, which the *IHS Jane’s* report on Bangladesh characterizes as “surprisingly effective.”⁴⁴³ However, it has also pursued its counterterrorism campaign entirely through kinetic targeting of militant groups, without putting any effort towards countering violent extremism.⁴⁴⁴ This will likely mean that Bangladeshi militant groups will continue to find fresh recruits amongst the country’s marginalized slum population.

The Bangladeshi Navy is also small, with only 15,000 personnel and 29 craft, consisting of 5 frigates and 24 coastal patrol boats.⁴⁴⁵ A force that small will be able to respond to specific emergencies in Bangladeshi coastal waters, however it is unlikely that it will be able to provide continuous presence in the complex waterways of the Ganges Delta which makes up most of Bangladesh’s coastal zone. Transnational criminal organizations and terrorist groups will likely find ample opportunities to skirt Bangladeshi coastal patrols and move weapons and personnel into and out of Bangladeshi territory.

The situation in Bangladesh is likely a portent of future instability in the region. As Dr. David Kilcullen, a noted expert on irregular warfare recently reported, urbanization in unstable coastal zones, which provide access to transnational organizations, extremist groups, and flows of arms and other contraband, will likely characterize future conflicts around the globe.⁴⁴⁶ Countering these threats will require persistent maritime presence, and partnering between international militaries and those of Bangladesh in order to build Bangladesh’s internal capacity to counter these threats effectively, without exacerbating the causes of instability.

Sri Lanka: Winning a Civil War and Shifting to Internal Political Conflict

Sri Lanka is a moderate risk country that is still recovering from a serious civil war and one which has that as yet has done little to reconcile the defeated side. The Sinhalese majority decisively defeated the Tamil minority in 2009 after some 16 years of civil conflict. It also has reduced its refugee problems, although some 118,000 people were still IDPs in 2012, and many of the more than 470,000 IDP that existed at the time of the civil war had not found stable relocations. The government has not, however, made serious progress in reach reconciliation and viable political solution. It also has become a narrow power structure at the top and national politics and governance have become more repressive in dealing with both the Sinhalese population and political opposition.

Outside reporting has not yet fully assessed these growing internal political problems. It is clear, however, that Sri Lanka faces serious challenges. The US Census Bureau estimates that its population increased from 40.4 million in 1950 to 193.2 million in 2013, and will increase to 228.46 million in 2025 and 290.8 million in 2050.⁴⁴⁷

Sri Lanka is making some progress towards a more stable pattern of democratic elections – as is ranked better in many indices than India and Pakistan – but has failed to make progress in terms of internal stability and security, and improved governance. The World Bank governance index for 2013 rates Sri Lanka as having poor accountability; poor political stability and absence of violence; poor to moderate effectiveness of governance and regulatory accountability; poor to moderate rule of law; and moderate control of corruption.⁴⁴⁸ Transparency International ranked Sri Lanka as 91st in world in terms of overall corruption, with problems in terms of budget openness.⁴⁴⁹ The World Bank ranked Sri Lanka at 85th in the world in ease of doing business in 2014, with problems in taxes, registering property, and enforcing contracts.⁴⁵⁰

The CIA reports that Sri Lanka's per capita income was a relatively high \$6,000 in 2012, ranking a 148th in the world, and had less than 9% of its population below the poverty line. The CIA described Sri Lankan political stability and its economy as follows in January 2014:⁴⁵¹

Tensions between the Sinhalese majority and Tamil separatists erupted into war in 1983. After two decades of fighting, the government and Liberation Tigers of Tamil Eelam (LTTE) formalized a cease-fire in February 2002 with Norway brokering peace negotiations.

Violence between the LTTE and government forces intensified in 2006, but the government regained control of the Eastern Province in 2007. By May 2009, the government announced that its military had defeated the remnants of the LTTE.

Since the end of the conflict, the government has enacted an ambitious program of economic development projects, many of which are financed by loans from the Government of China. In addition to efforts to reconstruct its economy, the government has resettled more than 95% of those civilians who were displaced during the final phase of the conflict and released the vast majority of former LTTE combatants captured by Government Security Forces. At the same time, there has been little progress on more contentious and politically difficult issues such as reaching a political settlement with Tamil elected representatives and holding accountable those alleged to have been involved in human rights violations at the end of the war.

... Sri Lanka continues to experience strong economic growth following the end of the 26-year conflict with the Liberation Tigers of Tamil Eelam (LTTE). The government has been pursuing large-scale reconstruction and development projects in its efforts to spur growth in war-torn and disadvantaged areas, develop small and medium enterprises and increase agricultural productivity.

The government's high debt payments and bloated civil service have contributed to historically high budget deficits, but fiscal consolidation efforts and strong GDP growth in recent years have helped bring down the government's fiscal deficit. However, low tax revenues are a major concern. The 2008-09 global financial crisis and recession exposed Sri Lanka's economic vulnerabilities and nearly caused a balance of payments crisis. Growth slowed to 3.5% in 2009.

Economic activity rebounded with the end of the war and an IMF agreement, resulting in two straight years of 8% growth in 2010-11. Growth moderated to about 6% in 2012. Agriculture slowed due to a drought and weak global demand affected exports and trade. In early 2012, Sri Lanka floated the rupee, resulting in a sharp depreciation, and took steps to curb imports. A large trade deficit remains a concern. Strong remittances from Sri Lankan workers abroad have helped to offset the trade deficit.

The US State Department reports that the government has largely dealt with Tamil resistance but still faces limited problems.⁴⁵²

In 2009, the Government of Sri Lanka militarily defeated the Liberation Tigers of Tamil Eelam (LTTE), which was seeking an independent homeland for Sri Lanka's Tamil population. The Sri Lankan government's comprehensive and aggressive counterterrorism stance is a direct result of its experience in this nearly three decades-long conflict. Counterterrorism cooperation and training with the United States in 2012 was limited, however, due to statutory and policy restrictions based on concerns about alleged past human rights abuses committed by Sri Lankan security forces.

The Sri Lankan government claimed that it continued to uncover abandoned weapons and explosives in areas of the country formerly controlled by the LTTE. Although there were no known LTTE activities in Sri Lanka in 2012, the government asserted that peaceful protests at Jaffna University in November were organized by students trained by overseas LTTE supporters and made several arrests.

The Government of Sri Lanka remained concerned that the LTTE's international network of financial support was still functioning; many counterterrorism activities undertaken by the government targeted alleged LTTE finances. Also, the Sri Lankan government maintained a strong military presence in post-conflict areas and voiced concern about the possible re-emergence of pro-LTTE sympathizers.

...Counterterrorism legislation in Sri Lanka has focused on eliminating the remnants of the LTTE and enforcing general security throughout the island. The Sri Lankan government continued to implement the Prevention of Terrorism Act of 1978, which was made a permanent law in 1982 and remains in force.

Sri Lanka has a higher standard of living than India or Pakistan in spite of its problems in governance and economic development, and has few transnational challenges.

Unfortunately, the near defeat of the Tamil resistance has been followed by new problems that make Sri Lanka a high risk state. Sri Lanka's ruling party has become steadily more authoritarian, repressive, and unwilling to deal with legitimate political opposition. The CIA notes that its main problems in dealing with outside threats now consist of human trafficking.⁴⁵³

Sri Lanka's Lessons in Maritime Asymmetric Warfare

Sri Lanka is currently emerging from three decades of civil war between the Sinhalese-majority and the Tamil separatist movement in the country's north. This civil war, which lasted for 26 years, was finally resolved through a decisive victory by the Sri Lankan military, which crushed the Liberation Tigers of Tamil-Eelam (LTTE) and retook all of the territory under its control. Since 2009, the LTTE, which invented the tactic of suicide bombings, no longer presents a serious threat to Sri Lankan security.⁴⁵⁴

Though this conflict was primarily fought on land and was internal to Sri Lanka, the LTTE, as, were able to deploy one of the most sophisticated maritime capabilities ever fielded by a non-state actor. The Terrorism Research and Analysis Consortium notes that the LTTE's maritime force, known as the Sea Tigers, had capabilities which define the maritime terrorism "state of the art,"

and that its functions were “reflective of those of a conventional navy.”⁴⁵⁵ These functions included protection of sea lines of communication necessary to provide supplies of arms and ammunition to the LTTE ground units in Tamil-held Sri Lanka, as well as an asymmetric offensive capability that was successfully able to challenge Sri Lanka’s conventional naval forces. The RAND corporation reported in 2012 that the Sea Tigers would direct attacks “against a range of Sri Lankan Navy (SLN) assets, including offshore patrol vessels, submarine chasers, Dvora/Super Dvora fast assault ships, personnel carriers, and amphibious landing craft.”⁴⁵⁶ The RAND report goes on to note that⁴⁵⁷

Assaults generally employed Tiger “wolf packs” that singled out and surrounded Sri Lankan Navy surface combat, patrol, and utility ships. These packs would then either fire on their targets or ram them with suicide boats. In the former case, the Sea Tigers used tactical craft equipped with 23-mm twin-barrel cannons, backed up by four 12.7-mm machine guns and various combinations of rocket launchers. In the latter case, specially modified “cigar” torpedo riders would be employed.

The Sea Tigers also possessed what is believed to be the first stealth surface and undersea offensive warfare capability by a non-state actor, though the use of improvised submersibles and “manned torpedo” devices used to mine harbors and ships at sea.⁴⁵⁸ The RAND report on maritime irregular warfare states that⁴⁵⁹

To defeat Sri Lankan naval radar scans, for instance, attack vessels were deliberately designed with angled metallic superstructures that reduced their radar cross-section. Sea Tiger teams would also typically sail in close formation, hugging the coastline. The technique was designed to mask the electronic train of individual craft by avoiding sonar signals altogether, or, failing this, giving the impression of one large vessel. The tactic was based on the same procedure used by combat air wings to avoid aerial surveillance and, according to Sri Lankan intelligence officials, was highly effective in facilitating cover approaches and surprise strikes against naval frigates, destroyers, and transporters.

These offensive maritime capabilities were used to disrupt Sri Lankan naval actions off the coast of Tamil-held territory, in order to support LTTE ground force actions in a manner similar to a combined sea-land campaign in a conventional military.⁴⁶⁰ However, the Sea Tiger’s suicide attack capabilities were strong enough that they were also able to mount direct attacks against hardened naval installations, such as the attack on the Sri Lankan naval base at Trincomalee in October, 2000.

After the collapse of the Sri Lankan cease-fire in 2006, the Sri Lankan Navy engaged in several pitched battles at sea against Sea Tiger craft employing swarming tactics with fast boats that could outrun the Sri Lankan Navy’s Super Dvora fast attack craft.⁴⁶¹ The SLN was successfully able to counter this trend through the indigenous development of small, highly mobile attack craft to engage Sea Tiger forces directly,⁴⁶² resulting in a series of SLN victories over the Sea Tigers.⁴⁶³

These offensive maritime capabilities were supplemented by the use of sea-borne smuggling routes, often known as “maritime rat lines,” to provide supplies to LTTE forces as well as illegally procured naval weapons systems.⁴⁶⁴ These actions were supported by “warehouse ships” that stored weapons, ammunition, and supplies and hid in shipping and fishing fleets sometimes as far away as the coast of Thailand, thousands of kilometers from the engagement area.⁴⁶⁵ This effectively created a sanctuary for terrorist activities in international waters.

The Sri Lankan military was eventually able to defeat this threat through a combination of ground and naval warfare, which destroyed the Sea Tiger’s boats while also seizing all of the territory held by the LTTE during the first months of 2009 through a series of decisive maneuver-based engagements,⁴⁶⁶ denying the Sea Tigers safe harbor and resupply. By May 2009, all LTTE sea and

ground assets had been defeated, and the Sri Lankan government was able to declare victory in the civil war.

The Sri Lankan case demonstrates both the height of maritime offensive capabilities to which terrorist groups can aspire in the future, as well as the combined arms approach that will be required to successfully confront these threats. The SLN had to reorganize itself for battles against small, high speed boats, effectively taking on the same platforms and swarming tactics in order to defeat the Sea Tigers. However, the effect was only decisive when combined with a major land-based offensive to seize the LTTE controlled parts of Sri Lanka and deny the group a safe haven for operations. The dénouement to the war illustrates this paradigm, as SLN assets at sea cut off seaborne escape routes at from the last LTTE positions at Mullaitivu in northeast Sri Lanka, while the Sri Lankan Army destroyed the last LTTE formations on land.⁴⁶⁷

Since the war's end, the Sri Lankan Navy has refocused on inshore patrolling and the defense of its home waters.⁴⁶⁸ The Navy is comprised of some 442 vessels, all of which are inshore patrol or small fast attack craft, with the exception of 9 amphibious landing craft.⁴⁶⁹ With this set of naval platforms, the SLN will not be capable of providing for maritime security in any expeditionary capacity outside its near waters. Furthermore, the Sri Lankan government has shown no ambitions towards deploying a naval presence into the greater Indian Ocean.

Diego Garcia

Diego Garcia is a small coral atoll located in the central Indian, located 7 degrees south of the equator. It is one of six atolls in Chagos Islands that are a remnant of British colonialism from the time Britain withdrew its forces from East of Suez. It has become a de facto British and US military base capable of supporting naval operations and basing combat aircraft, including B-2 bombers. Britain has faced several legal challenges from former residents, but effectively overturned several courts decisions by making it a maritime sanctuary and appealing to the House of Lords.

When it is fully operational, it has some 1,700 US military personnel and 1,500 civilian contractors. Only some 50 British troops are present. The base is operated by the US Navy and is used by both the US Navy and Air Force.⁴⁷⁰

As long as Britain continues to operate the Britain, the US, and potentially other allies the ability to operate long-range aircraft throughout the IOR areas.

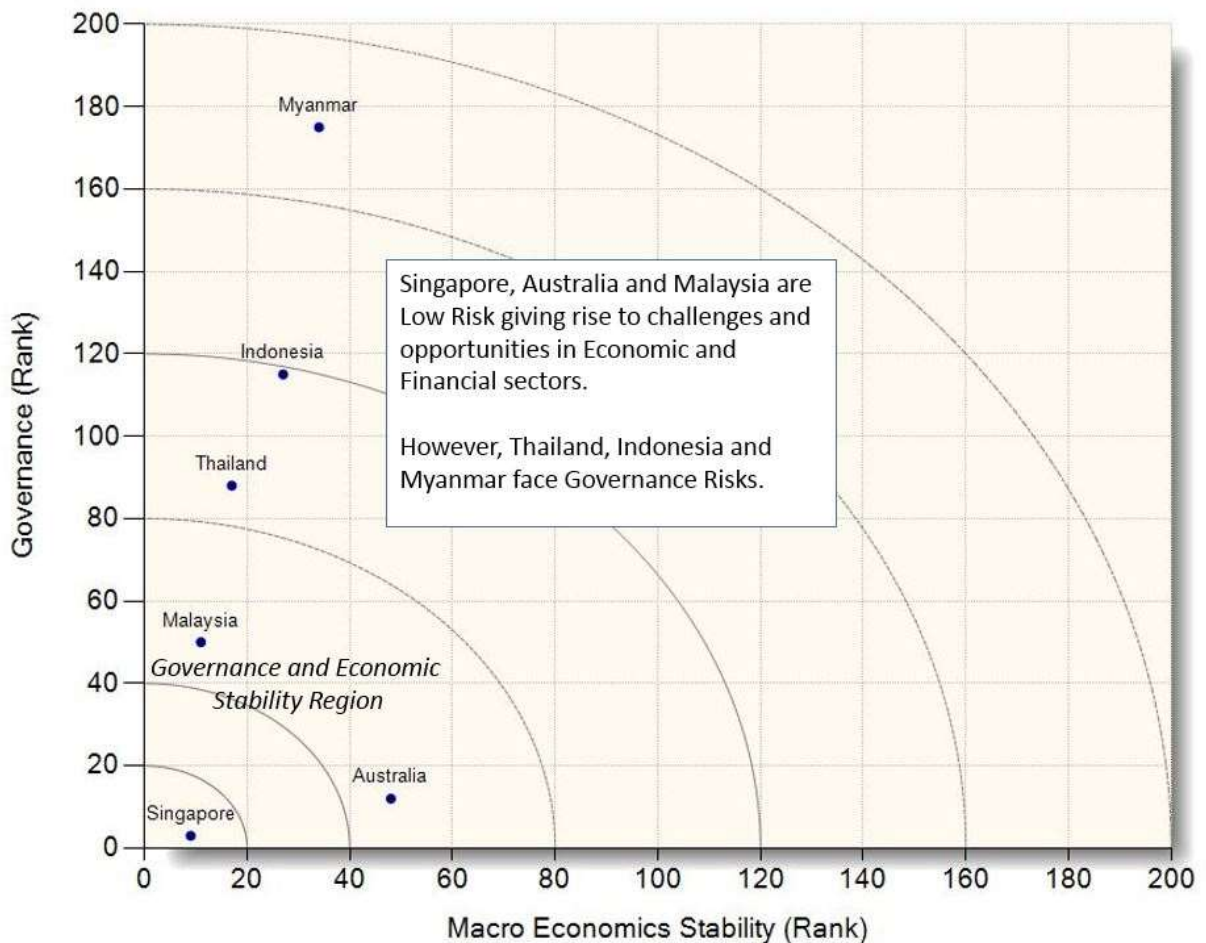
Stability and Security in the South Asia Sub-Region

The risk of serious fighting involving India and Pakistan remains a key risk in the Subregion and with patterns of poor governance, uncertain economic reform and development, and extremism and terrorism. All the countries in the Subregion are making progress, however, except for Pakistan, and India may emerge as a major regional military and world economic power over the decades to come. At present, these risks are localized – and large air-land -- although India does have major naval ambitions and China may seek a forward military presence in Pakistan.

VIII. SOUTHEAST ASIA - OCEANIA SUB-REGION

Many of the nations in Southeast Asia Subregion present less risk than the counterparts in other Subregions. **Figure VIII.1** shows that the quantitative risk indicator for governance and economics are relatively favorable for most states, although Thailand, Indonesia, and especially Myanmar present significant governance risks.

Figure VIII.1: Governance and Economic Risk Indicators for the Southeast Asia Sub-Region



The broader risks driving security and stability in the Subregion are shaped by the threats posed by piracy, ethnic and sectarian divisions, the strategic threats posed by rising competition with China and potential military threats the flow of energy exports to Asia. At the same time, the region is still largely one of independent national forces. In spite of the existence of the Association of Southeast Asian Nations or ASEAN, the nations in this Subregion of the IOR – Myanmar, Thailand, Malaysia, Singapore, Indonesia, and Australia – do not operate in a structure that offers effective collective security.

The only meaningful formal collective security effort – and it is relatively loosely structured -- are the Five Power Defense Arrangements between the United Kingdom, Australia, New Zealand,

Malaysia and Singapore. In actual practice, the key partners are now the Five Power Defense Arrangements between, Australia, Malaysia and Singapore, and the United States.

All of the states in the region, with the exception, of Myanmar – have some form of security ties to the United States and are concerned with the potential emergence of China as a regional superpower. Their major immediate security concerns, however, are territorial defense and claims; piracy and the security of sea lanes, including the Strait of Malacca; and internal security in dealing with extremism, terrorism, and ethnic and sectarian tensions and threats.

Several are building up their air and sea capabilities that will improve their local defense capabilities, but none of these efforts seem likely to make a significant real-world improvement in broader regional capabilities independent of the US. Progress in internal security and stability is mixed, and Myanmar, Thailand face significant ongoing challenges. None of the states where religious extremism, narcotics trafficking and/or human trafficking are major problems is making significant progress in dealing with these threats.

The Southeast Asia Military “Non-Balance”

Southeast Asia is another Subregion that does not have a military balance in the normal sense of the term. There are tensions between individual states, and China’s claims to territory in the South China Sea, which borders many states in the region, add to the complexity of Southeast Asian security concerns. Nevertheless, no state seriously prepares, deploys, and arms its forces to deter or fight a neighboring state or a state outside the Subregion.

There is far more informal bilateral and multilateral cooperation than preparation for conflict in both the economic and military domains. All the states that affect the IOR are members of ASEAN, which provides a useful forum for dialogue if not for collective security, and some regularly train and cooperate with each other on a host of security issues of mutual concern, such as piracy

At the same time, several countries in the region face serious internal instability of one form or another, including different forms of political protest movements, separatist groups, transnational criminal problems, and Islamist terrorism. In some cases, these threats cross national boundaries. For example, Indonesian terrorist groups maintain close ties to those in the Philippines, and piracy has affected the region as a whole for more than a decade. Political upheavals divide Thailand, and Cambodia is effectively a one party states whose control over power seems increasingly tenuous. This has led several countries to strengthen their internal security forces, and acquire the training and equipment for counterterrorism and counterinsurgency missions.

To the extent that there is any form of regional arms race, it is shaped largely by concerns over China’s emergence as a naval power. China’s growing status as a regional power, and its claims to most of the South China Sea, have led states like Thailand, Indonesia, and Singapore to make strengthen their air and naval forces. Concerns over China’s rise have led to marked increases in naval procurement in Southeast Asia in recent years.

China’s continued in military development, as well as its “9-Dashed Line” claims for much of the South China Sea, have left made nations in the region increasingly wary.⁴⁷¹ So has the fact that China is slated to overtake the entire European Union in defense expenditures,⁴⁷² and China has begun regularly conducting naval exercises in the Indian Ocean, most recently in late January 2014.⁴⁷³ As a result, Southeast Asian states are buying naval ships and weapons systems at an increasing rate, and the region is set to overtake Europe as world’s second largest naval market by volume, behind the United States.⁴⁷⁴ For the same reason, states like Singapore play an

increasingly important role in US plans to create regional strategic partnerships and “rebalance” its forces in Asia.

Comparing Forces by Country

The military developments in the Subregion are dominated by the capability to carry out sea-air warfare, although disputes over land borders and internal security struggles give ground forces considerable importance as well. Accordingly, a comparison of air and sea combat forces is necessary to understand the relative military strengths of each country in the region. It is also necessary to assess the capabilities of each state to employ these systems in a joint, combined-arms manner for maximum effect in an air-sea campaign.

Figure VIII.2 to VIII.6 compare the major combat weapons systems possessed by the major Southeast Asia countries assessed in this report. However, these numbers can be deceiving as they do not by themselves account for the varied qualities of weapon systems possessed by each country. Australia, for example, while one of the smallest military powers in terms of pure numbers, possesses higher quality equipment, such as F/A-18F Super Hornet fighters and M1A1 Abrams main battle tanks, which can offset a numerical disadvantage. Additionally, a country like Australia or Singapore, which have no internal threats and are able to commit some percentage of their forces to international security efforts, are also better trained and more experienced than those of their neighbors who focus on challenges to their internal stability.

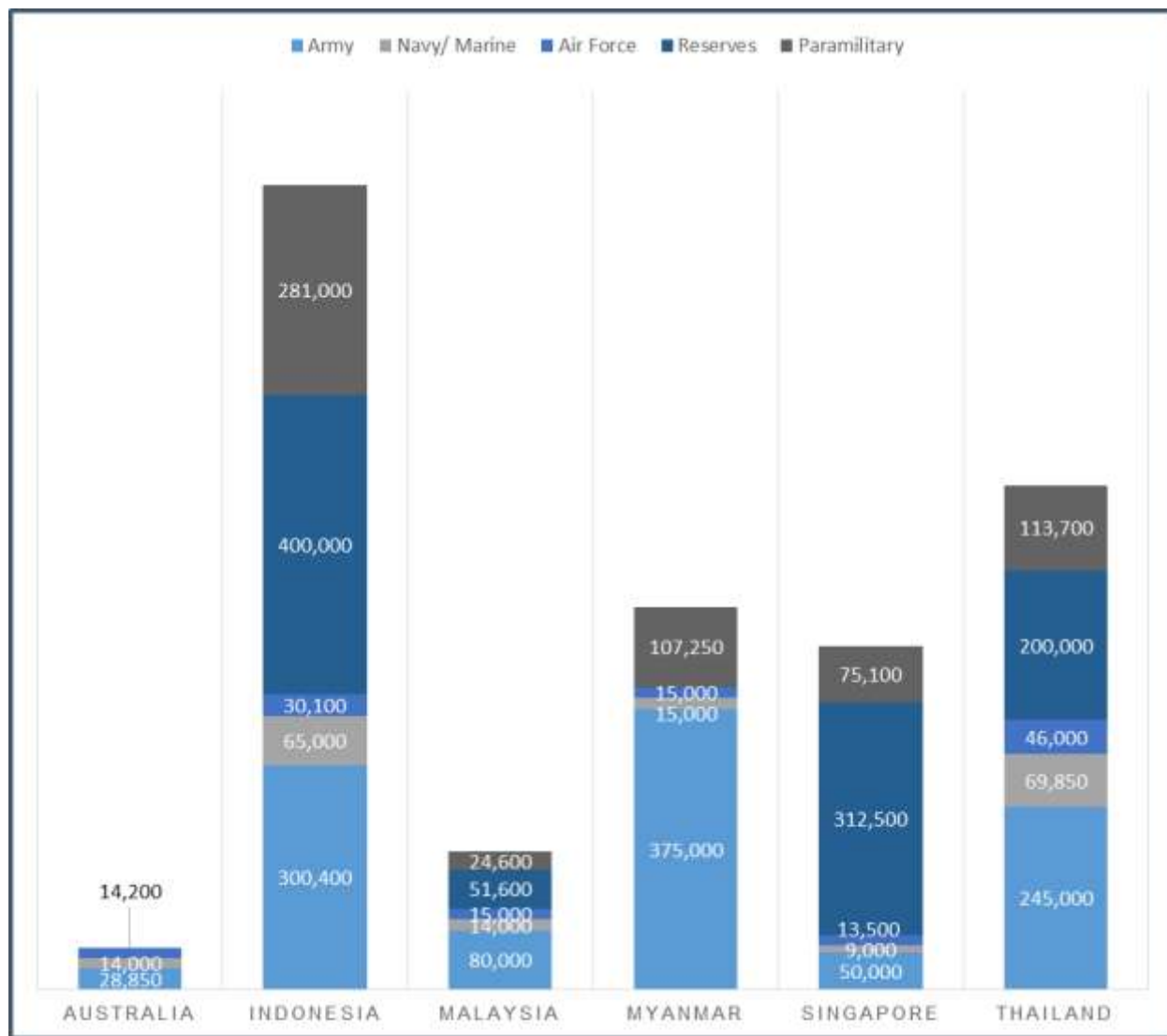
- **Figure VIII.2 summarizes the total force strength of each country** in the Subregion. Australia and Singapore are the most modern forces. Indonesia and Thailand are the largest effective force forces. Malaysia is a smaller but still effective regional power. Myanmar or Burma, and Cambodia, have large but high political forces with limited capability and effectiveness.
- **Figure VIII.3 compares the total manpower strength of each country.**
- **Figure VIII.4 highlights the relative strength of the land forces** in the Subregion. It shows that Indonesia, Myanmar, and Thailand have by far the large forces. Indonesia, however, is an island complex, and Myanmar’s forces have little maneuver capability and sustainability outside its border. Thailand is the only power whose land forces could play a major role outside its borders.
- **Figure VIII.5 compares air strength.** It says little about aircraft quality, however, or such key capabilities as training, sorties rates and sustainability, ISR, sensor nets, command and control and airborne warning and intelligence platforms. Malaysia, Indonesia, Thailand, and Singapore all seem to have moderate capability in these areas, but only Singapore sets consistently high standards in training and none of the air forces in the Subregion have been proven in modern air combat or joint warfare.
- **Figure VIII.6 compares naval strength in terms of major ships.** With the exception of Australia, these forces are tailored for operations in local waters, anti-piracy, and to enforce the security of major shipping channels. They would require the support of an outside navy and of air forces for substantial combat operations.

Figure VIII.2: Comparative Total Force Strength in the Southeast Asia Subregion

		Australia	Indonesia	Malaysia	Myanmar	Singapore	Thailand
Number of Troops	Army	28,850	300,400	80,000	375,000	50,000	245,000
	Navy/ Marine	14,000	65,000	14,000	15,000	9,000	69,850
	Air Force	14,200	30,100	15,000	15,000	13,500	46,000
	Reserves		400,000	51,600		312,500	200,000
	Paramilitary		281,000	24,600	107,250	75,100	113,700
	Total Troops:	57,050	1,076,500	185,200	512,250	460,100	674,550
Army	MBT	59		48	160	96	283
	LT TK		405	21	105	350	194
	APC	1,431	641	787	361	1,695	1164
	AIFV	257	105	44		407	96
	Artillery	364	1,138	424	404	798	2,603
	ATK Helicopters	22	6				7
	Total Land Forces:	2,133	2,295	1,324	1,030	3,346	4,347
Navy	Amphibious	2	5			4	1
	Mine Warfare/ Countermeasures	9	11	4		4	17
	Patrol and Coastal Combatants	14	72	37		35	84
	Principle Surface Combatants	12	11	10	3	6	11
	Submarines	6	2	2		5	
	Support	24		13	18	2	14
	Total Naval Forces	67	101	66	21	56	127
Air Force	Fighter		22	21	69	29	88
	Fighter/ Ground Atk	95	10	26		84	6
	Transport	42	39	32	19	9	59
	Training	95	118	80	45	19	119
	Support Helicopters	7	31	33	46	40	36
	ISR			3		8	
	Total Air Forces:	239	220	195	179	189	308

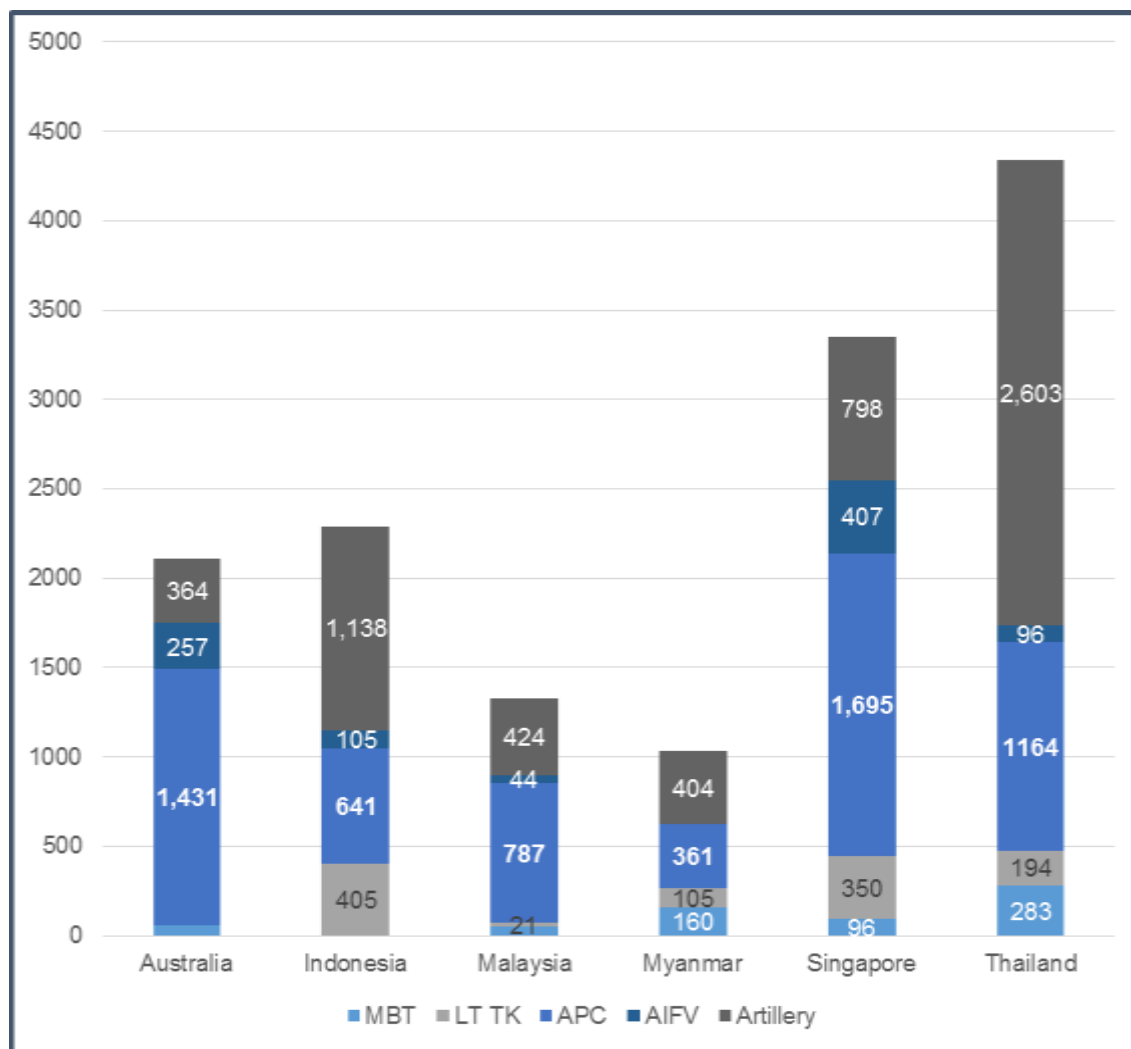
Source: Adapted from *IJSS Military Balance, 2014*, and material from IHS Jane's

Figure VIII.3: Comparative Manpower Strength in the Southeast Asia Subregion

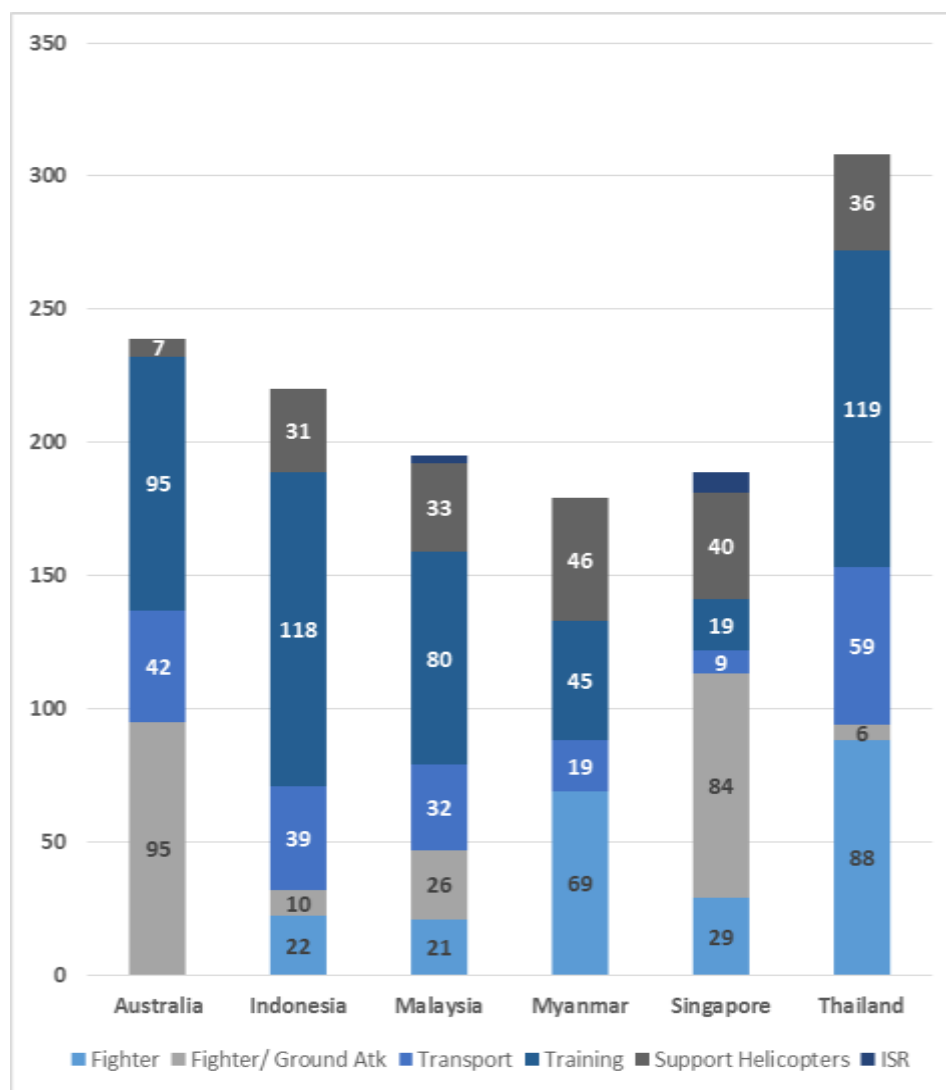


Source: IISS, *Military Balance*, 2014, and IHS Jane's Sentinel series.

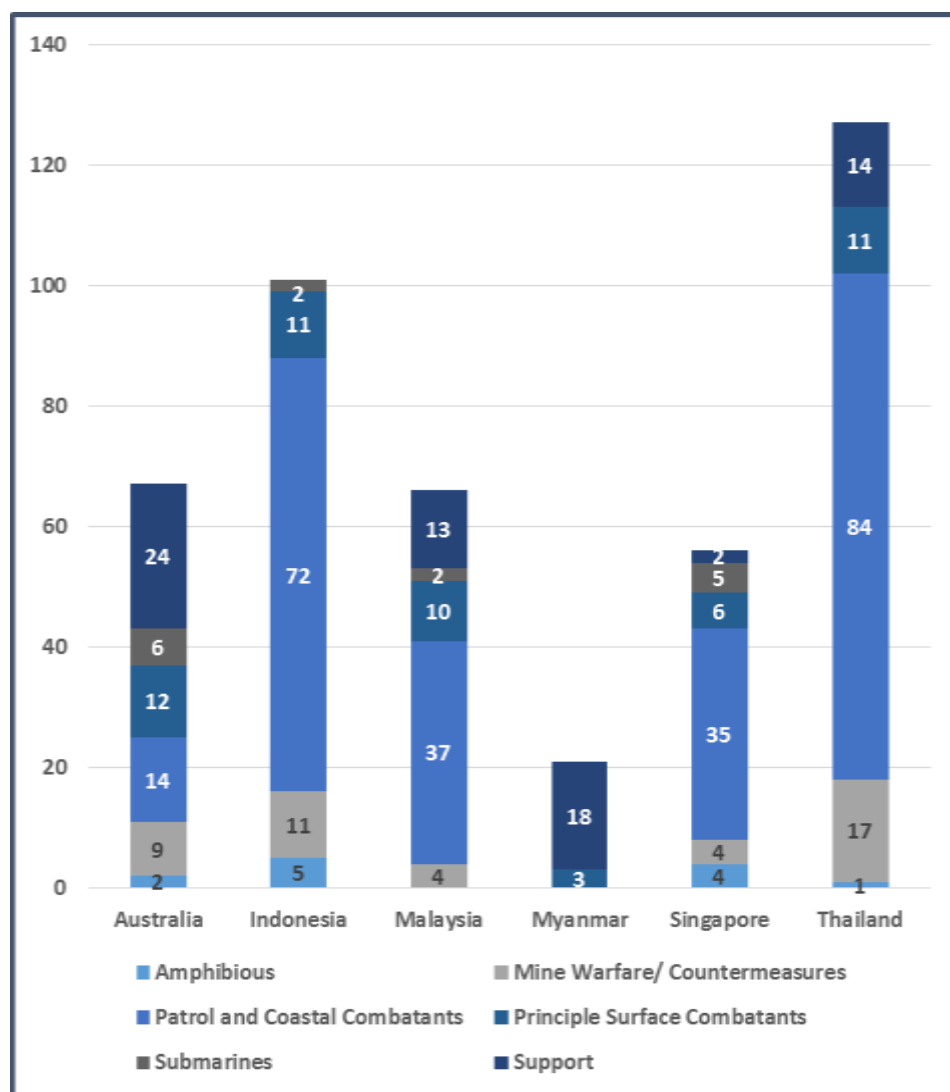
Figure VIII.4: Comparative Land Force Equipment in the Southeast Asia Subregion



Source: IISS, *Military Balance*, 2014, and IHS Jane's Sentinel series.

Figure VIII.5: Comparative Combat Aircraft in the Southeast Asia Subregion

Source: IISS, *Military Balance*, 2014, and IHS Jane's Sentinel series.

Figure VIII.6: Comparative Combat ships in the Southeast Asia Subregion

Source: IISS, *Military Balance*, 2014, and IHS Jane's Sentinel series.

Accelerating Military Procurement

The lack of intra-national tensions and conflict does not mean, however, that military developments in the Subregion are static. Southeast Asia has become one of the world's largest arms markets in terms of overall procurement spending, and a major center for procurement of naval and air weapons systems, including aircraft, anti-ship missile systems, unarmed Unmanned Aerial Vehicles (UAVs), and particularly submarines. Much – if not most – of these efforts are driven by concerns over China's military build-up and the issues discussed in the following chapter.

Several Southeast Asian nations are purchasing submarines. Singapore, already a regional leader for submarine procurement, is purchasing new equipment from Germany, while Vietnam, Indonesia, and Myanmar are all actively procuring or examining options to purchase Russian *Kilo*-class diesel-electric submarines.⁴⁷⁵ Australia is reviewing plans to double the size of its submarine fleet by replacing its current fleet of six aging boats with 12 new conventionally powered craft. Thailand is actively building submarine facilities at its naval base in Chon Buri. Singapore's submarines have advanced air-independent propulsion systems which allow them to operate submerged on electric engines for extended periods without a need to snorkel, making them the most advanced submarines in the region.

Militaries in the Subregion have expressed a need for new surveillance platforms, and UAV systems. Long-endurance UAVs would allow countries in the region to maintain situational awareness of maritime activities over a wide area. This makes them attractive to states such as Singapore, Malaysia and Indonesia which have to confront a regional confluence of terrorism, piracy, and Chinese maritime claims.⁴⁷⁶ Singapore in particular is thought to be interested in purchasing US Triton drones, the maritime surveillance version of the Global Hawk UAV, which can operate continuously for more than 24 hours at a time.⁴⁷⁷

Purchases of fighter aircraft – whose primary use would be against the aircraft or ships of a hostile nation state – are also accelerating, though the exorbitant cost of modern fighter platforms and fiscal uncertainties in countries throughout the region often cast doubt on such plans. In early 2014, Indonesia announced intentions to purchase a new series of fighter jets to replace aging platforms, and the Russian Su-35 is seen as the most likely candidate.⁴⁷⁸ Indonesia is also planning to acquire 24 F-16 C/D fighters retired from US inventory.⁴⁷⁹

Singapore is currently upgrading its fleet of F-16s, and is also examining options to purchase new F-35 Joint Strike Fighters from the US.⁴⁸⁰ Malaysia had announced plans in May, 2013, to purchase a series of new fighter jets, however budgetary restrictions are now forcing it to lease the aircraft instead; it is currently examining options to lease fighters from BAE (Eurofighter Typhoons), Boeing (F/A-18 Hornets), SAAB (JAS-39 Gripen) and Dassault (Rafale).⁴⁸¹

Finally, the Rajaratnam School of International Studies in Singapore has noted that a number of regional militaries, including Indonesia, Malaysia, and Vietnam have expressed interest in procuring high-speed land-attack and anti-ship cruise missiles.⁴⁸² There is particular emphasis on developing super-and hypersonic missiles. This may be a response to the fact that several other Asian powers, including China, Taiwan, South Korea, and Japan all have active hypersonic missile development programs.

As with the other technologies described above, the interest in these missile systems indicates serious concern about future hostilities against nation-state competitors. Cruise missiles, especially

of the anti-ship variety, cannot be reasonably employed against terrorists, pirates, or other non-state threats. Missiles of this variety would instead be primarily employed in an anticipated maritime campaign against a hostile nation-state.

Taken together, these purchases show that Southeast Asia is an active region for arms purchases. However, it is important to stress that the countries making such purchases are not making these acquisitions in order to compete with each other, and the region does not exhibit the geopolitical activities characteristic of a true arms race.⁴⁸³ As Koh Swee Lean Collin of the Institute of Defense and Strategic Studies in Singapore recently noted, all of the countries of Southeast Asia are increasing the amount of naval cooperation that they undertake with one another, effectively bringing these navies closer together.⁴⁸⁴ He notes that,⁴⁸⁵

The geopolitical environment in Southeast Asia has never been as benign as it has over the past decade or so. The region was once fraught with maritime territorial and sovereignty disputes, but since the early 2000's, Southeast Asia countries have amicably resolved most of the pressing maritime disputes through international law proceedings.

...While submarines feature prominently within the overall scheme of Southeast Asia naval modernization efforts, often overlooked is the recent intensification of cooperation among regional navies. Indonesia and Singapore established a submarine rescue and cooperation agreement back in 2012, followed by an equivalent pact between Singapore and Vietnam in 2013. These bilateral efforts augment existing multilateral arrangements in the region, such as Exercise Pacific Reach – a multinational submarine rescue exercise since 2000 – and the Asia-Pacific Submarine Conference (APSC) which first began in 2001 as a platform to designed to promote cooperation and mutual trust among submarine operators and aspiring ones in the Pacific and Indian Ocean regions....These gradual, incremental steps are noteworthy. They can facilitate the creation of wider multilateral participation and institutionalized cooperative arrangements in the future, modeling on foreign examples such as the NATO Submarine Escape and Rescue Working Group (SMERWG).

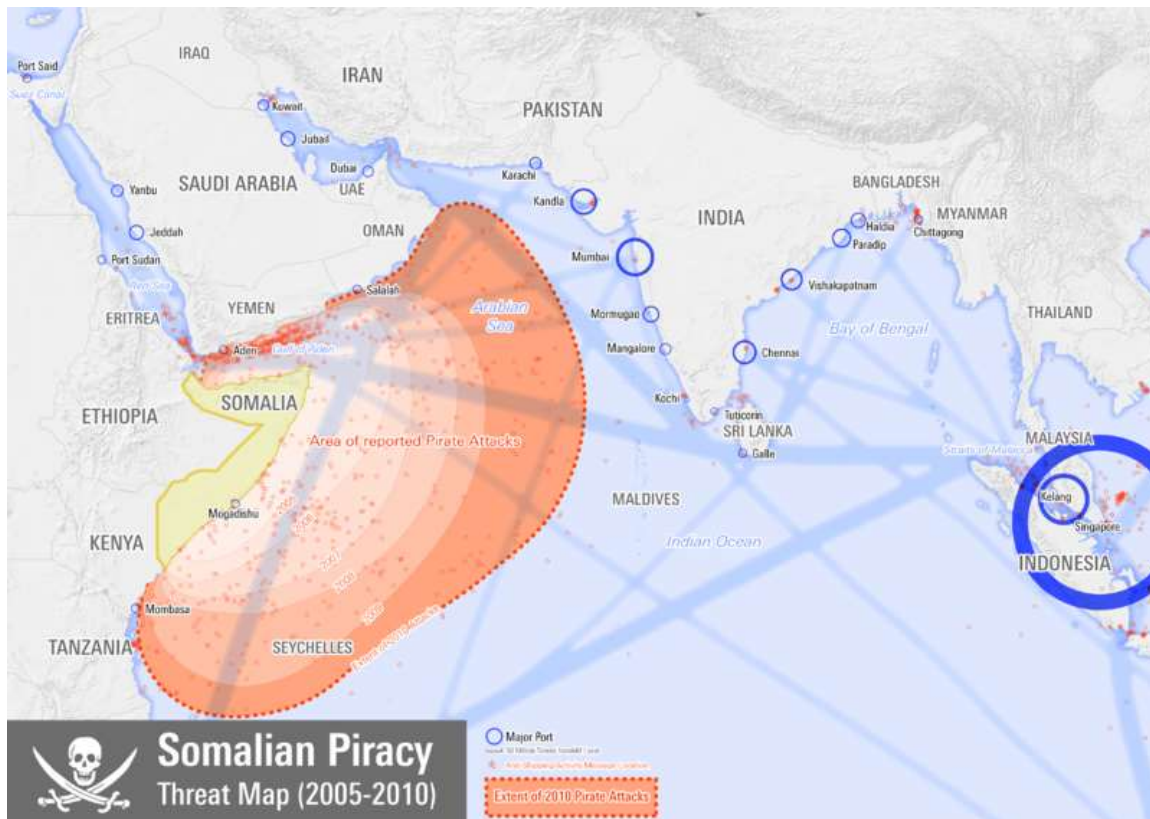
The present military “non-balance,” will continue, as the navies in the Subregion are not postured against one another and their procurements are not a form of competition. They cannot properly be said to contribute to a “security dilemma” in the manner which military procurements usually do. They are instead driven by China’s major strides in terms of naval development since the mid-2000s, and especially since it has begun aggressively pushing its claims to the South China Sea.⁴⁸⁶

Piracy and the Strait of Malacca

The most immediate strategic threat in the Southeast Asia Subregion is piracy and maritime crime. Piracy and maritime crime have long been significant problems both in the 900-kilometer long (550 mile) Strait of Malacca and in other waters. The Strait – which is transited by more than 100,000 ships a year, nearly 40% of the world maritime traffic, and supports 50 percent of the world’s oil shipments, including 80 percent of petroleum imports to Japan and the Republic of Korea – has been a particularly serious source of piracy in the past.

During the mid-2000s, the threat of piracy was serious enough for Lloyds to declare the Straits a high war risk area. **Figure VIII.7** shows how this zone of piracy compares to the far wider range of Somali piracy and to the location of the major ports in the IOR.

Figure VIII.7: Piracy Zone Near the Strait of Malacca vs. Somali Piracy Zone



Source: [Wikipedia, wikimedia.org/wikipedia/commons/7/7e/Somalian_Piracy_Threat_Map_2010.png](https://commons.wikimedia.org/wiki/File:Somalian_Piracy_Threat_Map_2010.png), accessed October 21, 2014.

Improving Trends in Anti-Piracy

Indonesia, Malaysia, and Singapore, however, have conducting steadily more effective surveillance and coordinated patrols in the Strait since 2005. Lloyd's reports that ASEAN succeeded in setting up a joint tracking and reporting system, local powers gained improve support from the International Maritime Bureau, and ships adopted better defense measures.⁴⁸⁷

This cooperation cut attacks in the Strait. Attacks fell from 126 in 2003 to 26 in 2008, thanks largely to closer co-operation by coastal states. Similar cooperation cut the incidents in Bangladesh have fallen from 47 in 2006 to 10 in 2008.⁴⁸⁸

These efforts continued to improve. By 2009, Lloyds summary reporting on piracy highlighted the threat off of Somalia and the Gulf of Aden, and did not mention the Strait of Malacca.⁴⁸⁹ The Malaysian Maritime Enforcement Agency (MMEA) reported in November 2012 that here were 38 piracy cases reported in 2004, and the number went down to 10 cases after MMEA was established in 2005. In 2006, 2007 and 2008, there were six, four and two cases respectively. There have been no piracy cases for three consecutive years from 2009, although the agency had conducted 83,951

checks on vessels in Malaysian waters since 2007, and 5,184 of them were detained for various maritime offences.⁴⁹⁰

This has not eliminated the threat of piracy in the region, but it has largely shifted the remaining threat to local Indonesia waters. Piracy near Indonesia's Tanjung Priok, Dumai, Belawan, Taboneo and Muara Jawa has come to rival or surpass piracy in Somalia and the Gulf of Aden. Global piracy incidents in 2013 were occurring at half the rate of 429 in 2011. However, the International Maritime Bureau office in Kuala Lumpur reported that 48 of the 138 piracy incidents recorded worldwide in the first six months of 2013 were off the coast of Indonesia.⁴⁹¹

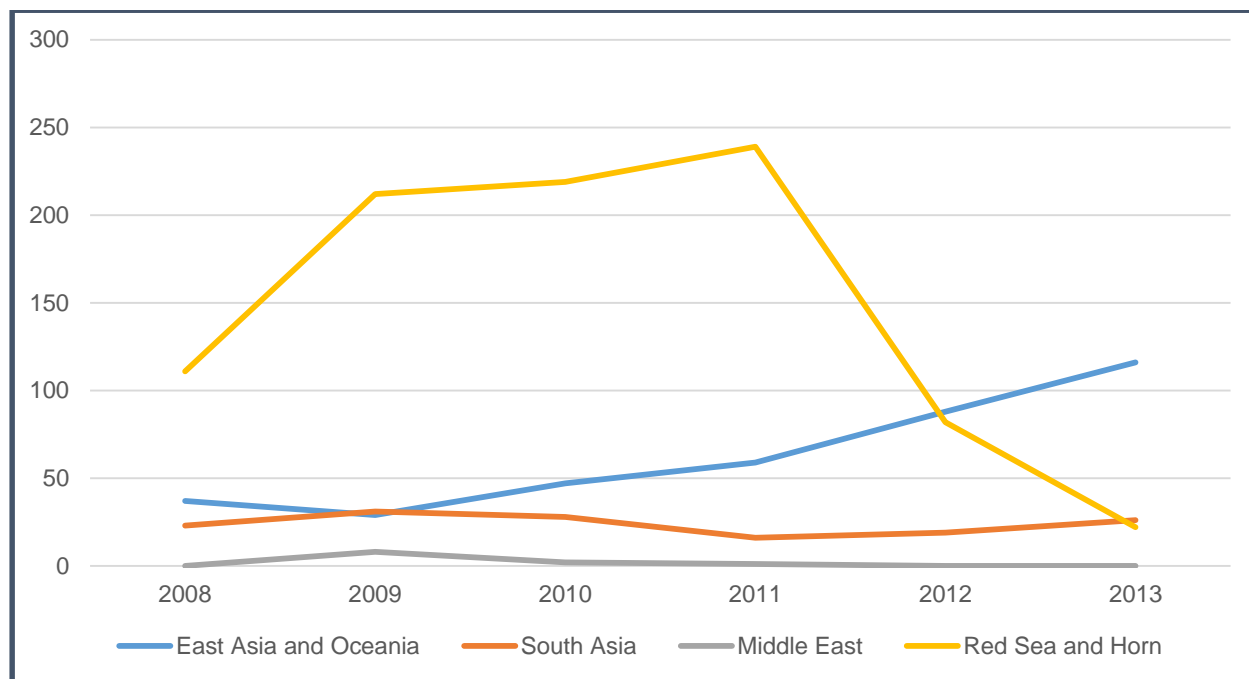
Most were equivalent to petty theft and did not pose a serious threat to IOR maritime traffic, but it was still clear that piracy presented a continuing low-level problem. The IMB reported in 2013 that the attacks and attempted attacks in the Strait of Malacca only included two low-level attacks. However, the total number of the attacks and attempted attacks in all of Southeast Asia affected a fishing vessel, an accommodation barge, 9 container ships, 4 tankers, 25 product/chemical tankers, 1 LPG tanker, 22 bulk carriers, 17 tugs, 8 barges, 1 general cargo carrier, 1 woodchip carrier, and 1 salvage vessel. The intensity of the attacks range from petty theft to serious piracy.⁴⁹²

The data in **Figure VIII.8 to VIII.11** show IMB estimates of how the rate of piracy has changed in the Strait of Malacca relative to piracy in the rest of Asia and the other areas in the IOR. It is again important to note that the numbers of attacks and attempted attacks do not necessarily reflect their importance.

Piracy often has little impact of overall ship risks and costs. Attacks on major ships are the exception. The actions in Strait of Malacca have had a major effect in reducing risk. In contrast, the patterns in the area from the Gulf of Oman to Somalia and the Red Sea, while declining, still pose a risk to major maritime traffic.

Figure VIII.8: International Maritime Bureau Estimate of the Trends in Actual and Attempted Piracy by Subregion: 2008-2012

Total Piracy by Individual Sub-Region



Total Yearly Piracy by Subregion

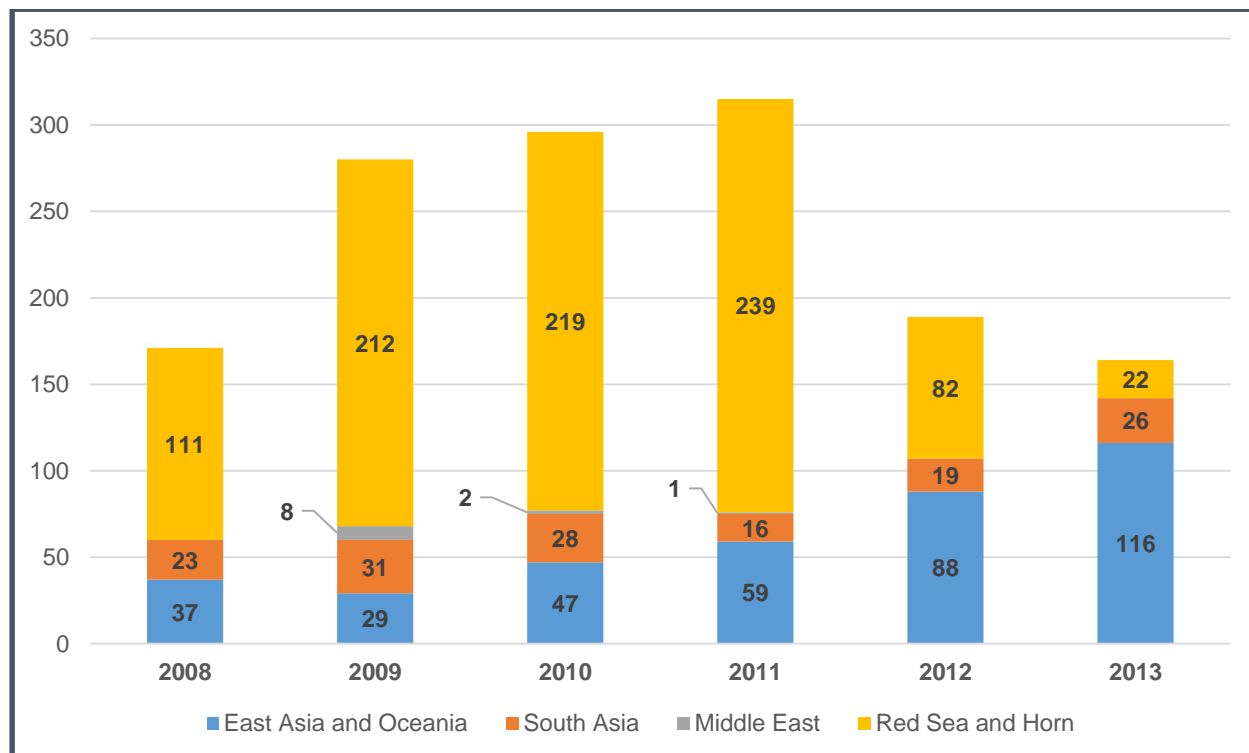


Figure VIII.9: International Maritime Bureau Estimate of the Trends in Actual and Attempted Piracy in IOR By Country and Subregion: 2008-2012

	2008	2009	2010	2011	2012	2013
Australia	0	0	0	0	0	0
Indonesia	28	15	40	46	80	106
Malacca Straits	2	2	2	1	2	1
Myanmar	1	1	0	1	0	0
Singapore Straits	6	9	3	11	6	9
Thailand	0	2	2	0	0	0
East Asia and Oceania	37	29	47	59	88	116
Bangladesh	12	18	23	10	11	12
India	10	12	5	6	8	14
Sri Lanka	1	0	0	0	0	0
Pakistan	0	0	0	0	0	0
Indian Ocean*	0	1	0	0	0	0
South Asia	23	31	28	16	19	26
Arabian Sea*	0	1	2	0	0	0
Saudi Arabia	0	0	0	0	0	0
Yemen	0	0	0	0	0	0
Oman*	0	4	0	1	0	0
Gulf of Oman	0	1	0	0	0	0
UAE	0	0	0	0	0	0
Qatar	0	0	0	0	0	0
Bahrain	0	0	0	0	0	0
Kuwait	0	0	0	0	0	0
Iraq	0	2	0	0	0	0
Iran	0	0	0	0	0	0
Jordan	0	0	0	0	0	0
Israel	0	0	0	0	0	0
Middle East	0	8	2	1	0	0
Gulf of Aden*	92	117	53	37	13	6
Red Sea*	0	15	25	39	13	2
Somalia	19	80	139	160	49	7
Djibouti	0	0	0	0	0	0
Egypt	0	0	2	3	7	7
Red Sea and Horn	111	212	219	239	82	22
Combined Total By Year	171	280	296	315	189	164

Figure VIII.10: International Maritime Bureau Estimate of the Trends in Actual and Attempted Piracy in the IOR and the Rest of Asia: 2008-2012

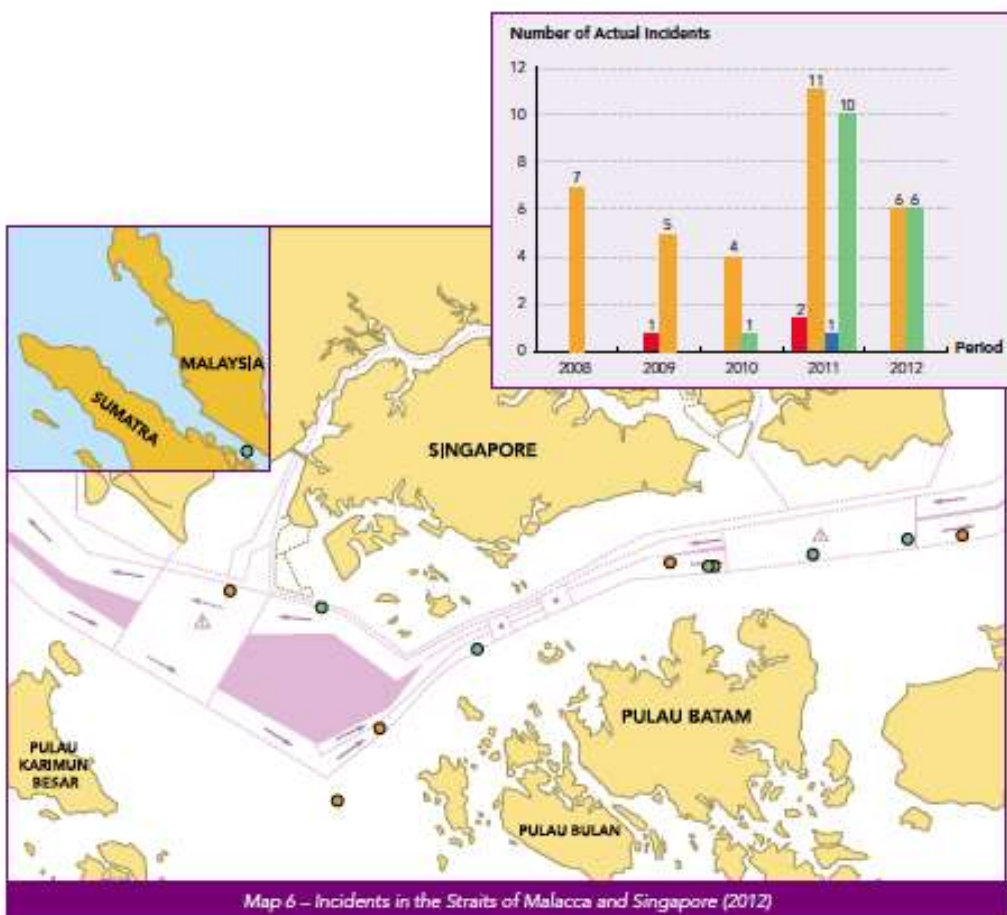
Location of Incidents (2008-2012)

	2008		2009		2010		2011		2012	
	Actual	Attempted	Actual	Attempted	Actual	Attempted	Actual	Attempted	Actual	Attempted
East Asia										
China			1		1		1		1	
Sub-total			1		1		1		1	
South Asia										
Arabian Sea					5	7		4		
Bangladesh	10	2	15	4	21	3	14		11	
Bay of Bengal					3			1		
India	10	1	8	2	5	2	7	2	8	1
Sub-total	20	3	23	6	34	12	21	7	19	1
Southeast Asia										
Gulf of Thailand					1					
Indonesia	21	1	14	5	37	10	47	2	65	6
Malaysia	13		12	3	18		14	3	11	
Myanmar			1				1			
Philippines	6	2	4	1	5		4	2	3	
Singapore					2		3		2	
South China Sea	5	2	11	2	17	8	12	6	7	
Straits of Malacca and Singapore	7	4	6	3	5	3	24	2	12	1
Thailand			2		1					
Vietnam	11	1	8		13		8		3	1
Sub-total	63	10	58	14	99	21	113	15	103	8
Overall Total	83	13	82	20	134	33	135	22	123	9

Source: ReCaap Information Center, *Piracy and Armed Robbery Against Ships in Asia, Annual Report, January- December 2012*, pp. 12.

Figure VIII.11: International Maritime Bureau Estimate of the Trends in Actual and Attempted Piracy in the Strait of Malacca: 2008-2012 – Part Three

Incidents by Location: Strait of Malacca and Singapore



Source: ReCaap Information Center, *Piracy and Armed Robbery Against Ships in Asia, Annual Report*, -January- December 2012, , pp. 23-24.

A Collaborative Approach Against Piracy

Indonesia has long faced internal instability and economic weakness which have made its widely dispersed islands and waterways a haven for regional piracy. These circumstances resulted in the Strait of Malacca becoming the major center of pirate activity until mid-way through the last decade. Reporting by the International Maritime Bureau (IMB) of the International Chamber of Commerce reports that attacks and attempted attacks in the region, including the Malacca and Singapore Straits and Indonesian territorial waters shot up from 52 in 1997 to 131 in 2000.

Figure VIII.12 shows that attacks and attempted attacks within Indonesian territorial waters accounted for an average of 77% of all attacks and attempted attacks in the region during those years. This trend would continue until comprehensive counter piracy agreements were implemented and enforced in the later part of the last decade.

As piracy levels rose through the first half of the last decade, Southeast Asian nations faced strong international pressure to take part in international efforts to crack down on pirates in and around the Malacca Straits. This issue became a major point of concern for regional maritime states, and Japan eventually succeeded in pushing Southeast Asian nations to establish the Regional Cooperative Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP). Under this agreement, partner states share intelligence on pirate activities through a Singapore-based Information Sharing Center (ISC), and arrange for mutual support to each other for counter-piracy operations and prosecutions of suspected pirates. This agreement is considered to be highly successful in combatting piracy throughout much of the region. As seen in **Figure VII.10** and **Figure VIII.11** above, piracy specifically in the straits of Malacca decreased significantly after 2004 when the ReCAAP agreement was first implemented and the ISC stood up in Singapore.

However, Indonesia and Malaysia, the two state bordering the Malacca Strait, have thus far refused to take part in the agreement. As a result, as international pressure has been placed on regional piracy, pirates have clustered in Indonesian and Malaysian waters. The International Maritime Bureau noted that from 2009 to 2012, piracy in Indonesia rose 440%, from 15 attacks to 81.

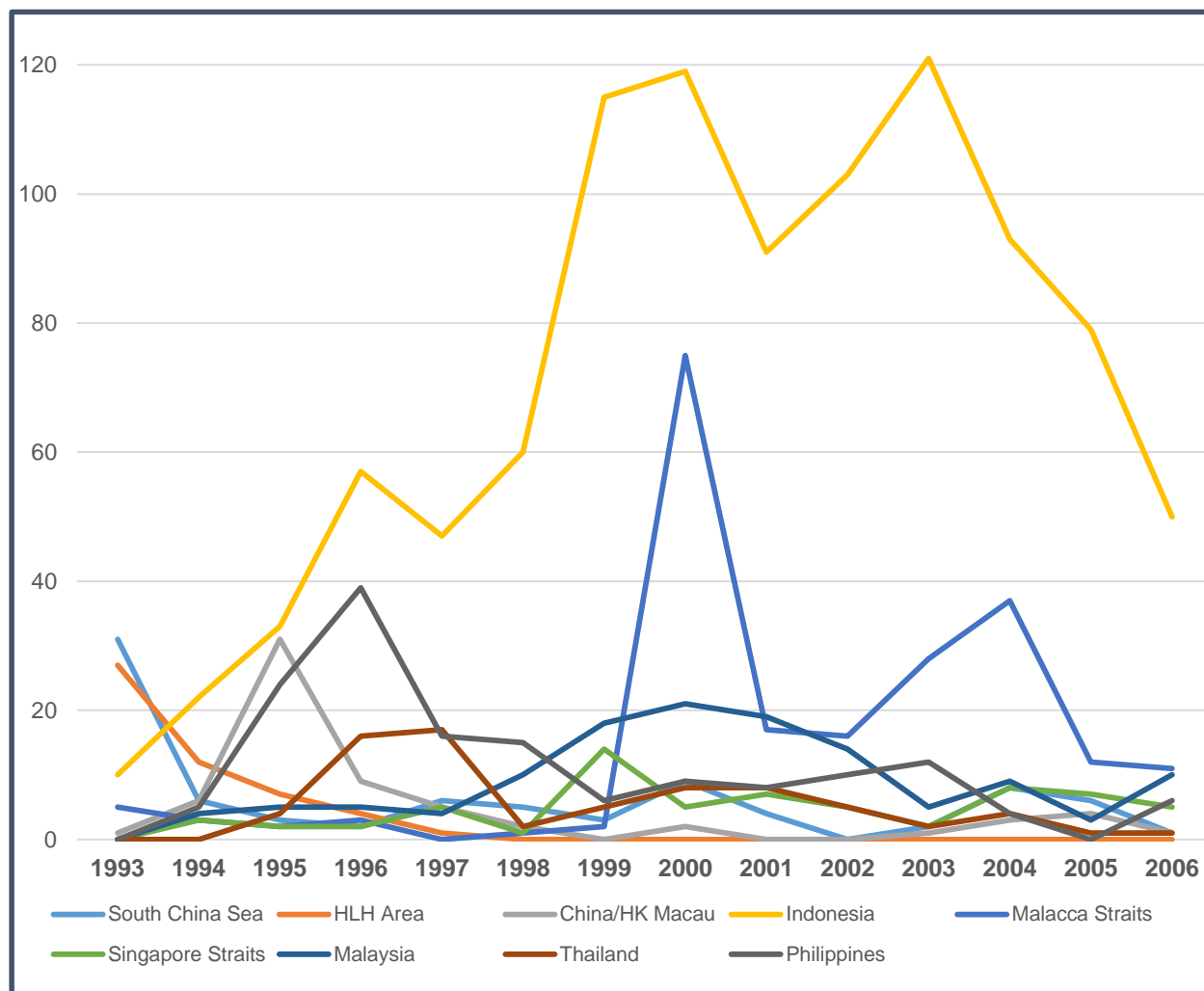
Figure VIII.13 shows the more recent trends pirate attacks in the region and covers the first three quarters of 2013. Attacks are heavily clustered in Indonesian and Malaysian waters, which straddle all of the strategically important shipping routes connecting the Indian Ocean with the West Pacific.

Unfortunately, since the majority of attacks originate in Indonesian and Malaysian waters, rather than international waters, this situation is suited for the international naval coalition such as Combined Task Force-150 currently conducting counter-piracy operations off the coast of Somalia. Instead, it will require close engagement with the Indonesian government by major maritime powers such as the US, Australia, and Japan.

There is also a needed for diplomatic outreach must push Indonesia to join the ReCAAP agreement and assist in countering piracy emanating from its own waters. As the ReCAAP agreement is designed around each country patrolling its own territory and sharing information in order to capture pirates attempting to escape from one nation's waters to another's, Indonesia's absence from the agreement severely compromises the ability of partnered nations in the region to combat piracy.

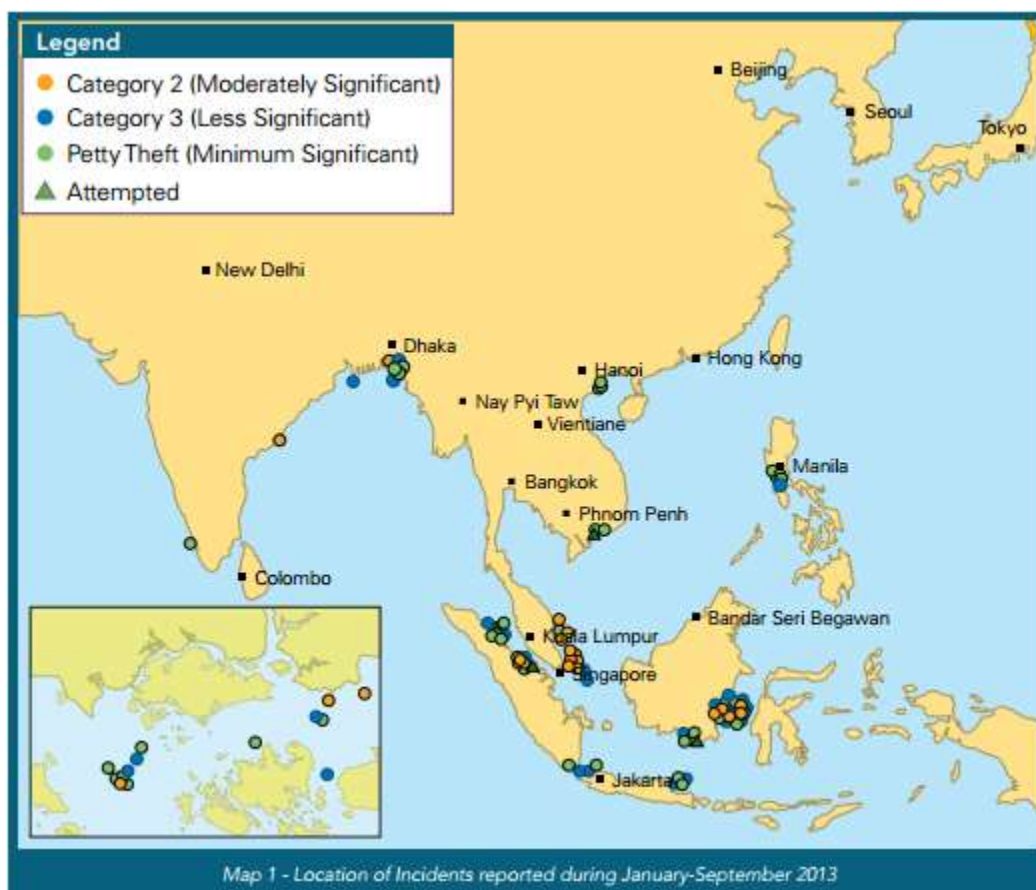
Additionally, any increased presence of the US Navy as part of the US “rebalancing” towards the Asia Pacific region, may provide opportunities for joint maritime security training. In particular, US Marines are now conducting regular rotations through Darwin, Australia, and US Littoral Combat Ships will be stationed on a rotational basis at Changi Naval Base in Singapore. These assets are in many ways tailor-made for assisting Indonesia with counter-piracy. The new US Littoral Combat Ship LCS is specifically designed for operating against low intensity threats in littoral environments such as the Indonesian archipelago. The LCS should be highly capable in assisting in patrolling Southeast Asian waterways and preventing piracy, in concert with regional partners. These efforts should take place through increased Cooperative Afloat Readiness and Training (CARAT) exercises with Indonesia. These exercises can enhance the limited capabilities of the Indonesian Navy and allow for better integration of regional naval forces.

However, any improvement in international action predicated on Indonesian acceptance of greater levels of assistance and cooperation against piracy within its territorial waters. This will require deft diplomatic outreach by the US and other partnered states. US leaders will need to make it clear to their Indonesian counterparts that they are not seeking to violate Indonesian sovereignty through unilateral action against pirates, but rather to jointly provide the capabilities necessary to assist Indonesia in countering piracy within its own waters.

Figure VIII.12: Attacks and Attempted Attacks by Piracy in Southeast Asia

Source: Carolin Liss, "Southeast Asia's Maritime Security Dilemma: State or Market?" *The Asia-Pacific Journal-Japan Focus*, June 8, 2007. Based on Data from the International Maritime Bureau's Annual Reports on Piracy and Armed Robbery against Ships for 2004, 2005, 2006. <http://www.japanfocus.org/-Carolin-Liss/2444>

Figure VIII.13: Reported Piracy Attacks, January-September 2013



Source: ReCAAP Information Sharing Centre Singapore, "Piracy and Armed Robbery Against Ships in Asia Quarterly Report: January – September 2013," 8.
http://www.recaap.org/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=315&PortalId=0&TabId=78

Australia

Australia has long has maintained close ties with the “Anglosphere,” including the US, UK, Canada, and New Zealand. These ties include the ANZUS mutual defense treaty with the US and the UKUSA Agreement that established intelligence sharing protocols between all five English-speaking states. Today Australia is a major regional player with a stable democracy and an economy that has made major progress in spite of the recent global recession. It is currently the only major, highly developed economy in Southeast Asia, and exercises broad regional influence, though its focus is currently directed more towards the Pacific than Indian Ocean security concerns.

Australia gets consistently high rankings in governance and economics. The World Bank governance index for 2013 rates Australia as having excellent accountability, low violence and instability, effective governance, high regulatory accountability, good rule of law, and moderate to low corruption.⁴⁹³ Transparency International ranked Australia as the 9th best country in the world in dealing with corruption, out of 177 countries, in 2013.⁴⁹⁴ The World Bank ranked Australia 11th in the world in ease of doing business in 2014, and only flagged protecting investors as a moderate problem, in which it ranks 68th in the world.⁴⁹⁵

The US Census Bureau estimates that Australia’s population increased from 8.3 million in 1950 to 22.3 million in 2013, but will only increase to 25.1 million in 2025 and 29.0 million in 2050.⁴⁹⁶ It currently possesses a population of 22.2 million people, with a median age of 38 years.⁴⁹⁷ Economically, Australia has enjoyed a long period of stable growth over the past decades.

Its GDP is currently \$961 billion – 19th in the world – and GDP per capita is \$42,000, 22nd in the world. This economic strength, along with its large and highly educated population, allows Australia to exercise a great deal of influence throughout Southeast Asia, and also to project its forces around the world in concert with the US and other allies.

The CIA described Australia’s economy as follows in January 2014:⁴⁹⁸

In recent decades, Australia has become an internationally competitive, advanced market economy due in large part to economic reforms adopted in the 1980s and its location in one of the fastest growing regions of the world economy. Long-term concerns include aging of the population, pressure on infrastructure, and environmental issues such as floods, droughts, and bushfires. Australia is the driest inhabited continent on earth, making it particularly vulnerable to the challenges of climate change.

...The Australian economy has experienced continuous growth and features low unemployment, contained inflation, very low public debt, and a strong and stable financial system. By 2012, Australia had experienced more than 20 years of continued economic growth, averaging 3.5% a year. Demand for resources and energy from Asia and especially China has grown rapidly, creating a channel for resources investments and growth in commodity exports.

The high Australian dollar has hurt the manufacturing sector, while the services sector is the largest part of the Australian economy, accounting for about 70% of GDP and 75% of jobs. Australia was comparatively unaffected by the global financial crisis as the banking system has remained strong and inflation is under control. Australia has benefited from a dramatic surge in its terms of trade in recent years, stemming from rising global commodity prices. Australia is a significant exporter of natural resources, energy, and food.

Australia's abundant and diverse natural resources attract high levels of foreign investment and include extensive reserves of coal, iron, copper, gold, natural gas, uranium, and renewable energy sources. A series of major investments, such as the US\$40 billion Gorgon Liquid Natural Gas project, will significantly expand the resources sector. Australia is an open market with minimal restrictions on imports of goods and services.

The process of opening up has increased productivity, stimulated growth, and made the economy more flexible and dynamic. Australia plays an active role in the World Trade Organization, APEC, the G20, and other trade forums. Australia has bilateral free trade agreements (FTAs) with Chile, Malaysia, New Zealand, Singapore, Thailand, and the US, has a regional FTA with ASEAN and New Zealand, is negotiating agreements with China, India, Indonesia, Japan, and the Republic of Korea, as well as with its Pacific neighbors and the Gulf Cooperation Council countries, and is also working on the Trans-Pacific Partnership Agreement with Brunei Darussalam, Canada, Chile, Malaysia, Mexico, New Zealand, Peru, Singapore, the US, and Vietnam.

As for security and stability, Australia is a low risk state. It has no significant internal security issues. In terms of regional defense, it possesses moderate power projection capabilities and close ties to the United States as well as ties to Indonesia, Malaysia, and Singapore. Its military is relative small in terms of total manpower strength, with some 57,000 actives and 26,000 reserves. It has, however, steadily modernized and Australia plans to buy advanced modern combat aircraft like as many as 100 F-35 advanced fighters, new submarines, and complete two large 27,500 ton Canberra-class LHDs – which are helicopter carriers that can each transport over 1,000 soldiers and their equipment as well as MRH-90 transport helicopters and S-70B Seahawk anti-submarine helicopters. Australia carries out number joint exercises and works with other states in the region, paying special attention to Indonesia – its closest neighbor.

Australia's 28,800-man army is well equipped with modern armor, artillery, and helicopters. Its navy has six submarines, 12 missile frigates, 2 LSD and LSL amphibious ships, some mine warfare craft, and numerous patrol craft. It has enough strength in support vessel to project power relatively long distances. Its 14,200-man air force has 142 combat aircraft, including 71 F-18A/B and 24 F-18F. This total also include some advanced support aircraft: 18 AP-3C Orion maritime patrol and ASW aircraft, and 6 B-737-700 Wedgetail AEW aircraft. The RAAF also has significant tanker and long-range air transport strength.

As noted above, Australia is currently examining plans to double its submarine fleet to 12 ships, and is also planning to procure new P8A Poseidon maritime patrol and anti-submarine warfare craft as well as MQ-4C Triton maritime surveillance UAVs.⁴⁹⁹ These systems collectively represent the state of the art in maritime ISR and anti-submarine warfare technology, and will effectively ensure that Australia remains the leading maritime power in the region.

Australia's 2013 defense white paper lays out a comprehensive force modernization program in considerable detail and focuses on the entire Pacific region, and the role of the US and China, as well as developments in the IOR.⁵⁰⁰

Profound strategic changes occurring across our region are altering the global strategic system. The economic and strategic dimensions of national security will continue to interact. The world economy, on which both our security and prosperity depend, remains the biggest strategic uncertainty. Economic problems and prospects – and international perceptions of these – underlie the movement in strategic weight from the West to the East.

The relationship between the United States and China, the region's and the globe's two most powerful states, will more than any other single factor determine our strategic environment over coming decades.

Other major developments include strong economic growth across our region and increasing military modernization...Rising government revenues are allowing many regional states to modernize and increase the capabilities of their military forces, albeit unevenly. Some states are strengthening their defence industrial capacity with leading-edge technological innovation and boosting their defence exports.

With economic growth, regional states are developing broader interests and responsibilities, including in global economic governance and in the security of resources such as energy, food and Access to resources and supply routes will increasingly feature in strategic considerations.

... The United States has committed to a strategic rebalance to our region aimed at supporting long-term peace and stability. Enhanced cooperation between the United States and its regional partners is an important component of this rebalance.

... China's continued rise as a global power, the increasing economic and strategic weight of East Asia and the emergence over time of India as a global power are key trends influencing the Indian Ocean's development as an area of increasing strategic significance. In aggregate, these trends are shaping the emergence of the Indo-Pacific as a single strategic arc.

... Globalization and new technologies are increasing the flows of information, people, services and goods. These are overwhelmingly positive developments. But with it comes the growing empowerment of non-state actors with malign intentions, such as terrorists, people traffickers and human smugglers, pirates, transnational criminals and hackers.

..In addition to these long-term strategic trends, three other important developments must be considered. First, the ADF has withdrawn from Timor-Leste and will undertake an operational drawdown from Afghanistan and Solomon Islands over the next two years. These transitions will require careful management. Australia must maintain a credible and capable ADF for the defence of our interests and to support security in our region. The emphasis on Australia's regional defence posture in this White Paper focuses on this objective.

...Second, Australia has conducted its own *Australian Defence Force Posture Review*, the first in a quarter of a century, to assess whether the ADF is well positioned geographically to meet Australia's security challenges. This White Paper addresses the response to that Review.

Third, the White Paper includes a budget model for Defence that is realistic and appropriate for the times. As Australia's financial and economic circumstances allow, the Government will want to grow the Defence budget to around two per cent of Gross Domestic Product.

Australia describes its strategy for the IOR as follows:⁵⁰¹

Australia's Indian Ocean coastline is longer than those bounded by the Pacific or Southern Oceans. Australia is responding to the rise of the Indian Ocean region as an area of global strategic significance, and as an integral part of the Indo-Pacific strategic system. The security of its waters, and the trade which flows through them, is important to global, regional and Australian strategic interests....the Indian Ocean is surpassing the Atlantic and Pacific oceans as the world's busiest trade corridor.

The Indian Ocean is increasingly important to Australia, both in terms of our own trading interests and the fact that Australia's major trading partners rely on energy resources transported across the Indian Ocean to sustain their trade with Australia. The Government will engage closely with other countries with interests in the region to ensure that Indian Ocean dynamics are supported by the evolution, over time, of a more robust regional security architecture that provides mechanisms for the exchange of perspectives and management of the region's security challenges.

India and Australia have a shared interest in helping to address the strategic changes that are occurring in the region. Australia and India are also important trade partners and share a commitment to democracy, freedom of navigation and a global order governed by international law.

Australia and India are taking further steps to develop and expand upon the Strategic Partnership, under the framework of the 2009 Joint Declaration on Security Cooperation. Strategic engagement between Australia and India has involved high-level visits and ongoing exchanges and dialogue, and defence cooperation occurs across a range of activities, including ship visits and professional exchanges. Our Navy to Navy relationship continues to grow – a natural progression given our shared maritime security interests as Indian Ocean littoral states – and Australia and India will work towards establishing a formal bilateral maritime exercise.

Pakistan is an important partner for Australia's international counter-terrorism and counter-insurgency efforts. Pakistan's stability, capacity and commitment to combating violent extremism are critical for regional and global security, as well as success in Afghanistan. Australia will continue to provide training to develop counter-insurgency related skills in the Pakistan military, and to help build that organization's professionalism and management capacity.

Contributing to the capacity of Afghanistan to field effective security forces to ensure that the country does not again become a safe haven for international terrorism remains a priority for the Government. As noted in earlier chapters, beyond 2014 Australia has committed to providing support to the Afghan National Security Forces, and will also contribute financially to the sustainment of the Afghan National Security Forces at least until 2017-2018. The Government will explore options for the establishment of a modest Defence Cooperation Program with Afghanistan to enhance the capacity of the Afghan National Security Forces and help Afghanistan to deny sanctuary for international terrorists.

The Middle East remains an area of significant strategic priority, not only for Australia and our national interests in the global energy trade, counter-proliferation and counter-terrorism, but also for the impact unrest there can have on global security. It is too early to determine what the strategic implications of the political changes in the Middle East since early 2011 will mean for Australia's interests in the long-term. But the region will remain important to Australia over coming decades not least because of energy resources, trade, the adjacent sea lines of communication, and the large number of Australian citizens living, working and travelling in the region.

The Government will continue to develop bilateral defence relationships with key Middle East countries and explore opportunities for further cooperation. The Government welcomes the opportunity to deepen cooperation in support of Australia's deployments to the region, particularly the hosting of Australia's deployments in the United Arab Emirates. Those deployments have provided the basis for our successful defence cooperation.

Africa remains important for international security efforts, including supporting Africa's own regional peacekeeping, stabilization and counter-terrorism efforts. These include international efforts to address the transnational criminal threat posed by piracy off the east and western coasts of the continent, the African Union Mission to Somalia, and the African-led International Support Mission to Mali (AFISMA). Australia has committed \$5 million to a UN Trust Fund for AFISMA, and will continue to develop defence relations that support regional security efforts, both with bilateral defence partners and multilaterally through the African Union and other African nations.

Australia has no significant conflicts or tensions with its neighbors or states in the IOR. The CIA reports that remaining transnational issues are minor:⁵⁰²

In 2007, Australia and Timor-Leste agreed to a 50-year development zone and revenue sharing arrangement and deferred a maritime boundary; Australia asserts land and maritime claims to Antarctica; Australia's 2004 submission to the Commission on the Limits of the Continental Shelf (CLCS) extends its continental margins over 3.37 million square kilometers, expanding its seabed roughly 30 percent beyond its claimed exclusive economic zone; all borders between Indonesia and Australia have been agreed upon bilaterally, but a 1997 treaty that would settle the last of their maritime and Exclusive Economic Zone (EEZ) boundary has yet to be ratified by Indonesia's legislature; Indonesian groups challenge Australia's claim to Ashmore Reef; Australia closed parts of the Ashmore and Cartier reserve to Indonesian traditional fishing.

Australia has no major terrorist or extremist movements. The US State Department reported in 2013 that,⁵⁰³

Australia maintained its position as a regional leader in the fight against terrorism and worked to strengthen the Asia-Pacific region's counterterrorism capacity through a range of bilateral and regional initiatives in organizations such as ASEAN, the ASEAN Regional Forum, and the Pacific Island Forum. Australia is also co-chair of the GCTF Southeast Asia Working Group.

Australia's inherent strengths and its close ties with the US will make it a bulwark of Western influence in Southeast Asia, and in the IOR more generally as the region begins to take on greater global importance. This role was demonstrated during the 1999 intervention in East Timor, when Australia deployed troops to prevent atrocities stemming from East Timor's movement for independence from Indonesia. This demonstrated a strong capacity for regional crisis response and intervention in complex environments. Since then, the Australian Army has gained extensive

combat experience through deployments in support of Operations Enduring Freedom and Iraqi Freedom.

A recent study by the Center for Strategic and Budgetary Assessments refers to Australia as the “Gateway to the Indo-Pacific,” and notes that Australia’s geographic location and highly capable military give it the potential to act both as a “Indo-Pacific Watchtower,” providing advanced early warning of threats throughout the region, and also a “Green Water Warden,” using its amphibious and irregular warfare capabilities to assist in securing the Southeast Asia littorals.⁵⁰⁴

Indonesia: Political Progress and Maritime Insecurity

Indonesia is the world’s fourth largest country and third largest democracy. It is making progress in governance, its economy, and security, and has had ten years of relative political stability under President Susilo Bambang Yudhoyono. It will hold national elections for a new administration in 2014, which are not expected to face serious issues or irregularities.

Indonesia does have problems in in governance and economics. The World Bank governance index for 2013 rates Indonesia as having improved to moderate accountability. It still has serious low violence and instability, low to moderate effectiveness in governance, low to moderate regulatory accountability, low rule of law, and serious corruption.⁵⁰⁵ Transparency International ranked Australia as 114th out of 177 countries in dealing with corruption in 2013.⁵⁰⁶

Indonesia still faces significant challenges in terms of poverty and ethnic and regional divisions. Specifically, numerous Indonesian islands and regions face secessionist movements, and a significant minority of the population also follows a hardline brand of political Islamism which has allowed the country to become fertile soil for terrorist groups in the past. Its GDP was \$1.2 trillion in 2012, ranking 16th in the world. Its GDP per capita was \$4,900 in 2012, ranking 159th in the world, and some 12% of its population is below the poverty line.⁵⁰⁷

Indonesia only ranks 120th in World Bank ease of doing business index.⁵⁰⁸ The World Bank noted particular issues with the ease of starting a business – for which Indonesia ranks 175th in the world; getting electricity – 121st in the world; enforcing contracts – 147th in the world; resolving insolvency – 144th in the world; and paying taxes – 137th in the world. The United Nations Development Programme places Indonesia at 121 on its Human Development Index, with a composite score of .629. Nevertheless, Indonesia qualifies as moderate risk state, with reasonable standards of security and stability, and offering significant investment and trade opportunities. The CIA summarized the situation in Indonesia as follows in January 2014:⁵⁰⁹

After rioting toppled Suharto in 1998, free and fair legislative elections took place in 1999. Indonesia is now the world's third most populous democracy, the world's largest archipelagic state, and the world's largest Muslim-majority nation. Current issues include: alleviating poverty, improving education, preventing terrorism, consolidating democracy after four decades of authoritarianism, implementing economic and financial reforms, stemming corruption, reforming the criminal justice system, holding the military and police accountable for human rights violations, addressing climate change, and controlling infectious diseases, particularly those of global and regional importance. In 2005, Indonesia reached a historic peace agreement with armed separatists in Aceh, which led to democratic elections in Aceh in December 2006. Indonesia continues to face low intensity armed resistance in Papua by the separatist Free Papua Movement.

Indonesia, a vast polyglot nation, grew more than 6% annually in 2010-12. The government made economic advances under the first administration of President YUDHOYONO (2004-09), introducing significant reforms in the financial sector, including tax and customs reforms, the use of Treasury bills, and capital market development and supervision. During the global financial crisis, Indonesia outperformed its regional neighbors and joined China and India as the only G20 members posting growth in 2009. The government has

promoted fiscally conservative policies, resulting in a debt-to-GDP ratio of less than 25%, a fiscal deficit below 3%, and historically low rates of inflation. Fitch and Moody's upgraded Indonesia's credit rating to investment grade in December 2011. Indonesia still struggles with poverty and unemployment, inadequate infrastructure, corruption, a complex regulatory environment, and unequal resource distribution among regions. The government in 2013 faces the ongoing challenge of improving Indonesia's insufficient infrastructure to remove impediments to economic growth, labor unrest over wages, and reducing its fuel subsidy program in the face of high oil prices.

Figure VIII.14 shows that Indonesia is the world's largest archipelagic nation, with a total coastline that is more than twice the circumference of the Earth.⁵¹⁰ It also sits astride all of the major transshipment routes between the Indian Ocean and East Asia, including the Malacca and Sunda Straits. Given the importance of maritime trade between East Asia and the Middle East to the global economy, it is difficult to overstate the strategic importance of Indonesia's geographic location.

This importance is plainly illustrated by China's response to what has become known as "the Malacca Problem." Some 80% of China's liquid energy must be imported by sea on the Indian Ocean through the Strait of Malacca – what geopolitical analyst Robert Kaplan has referred to as the "world energy interstate", which gives this single sea lane a vital importance to China's overall economic health.⁵¹¹

Figure VIII.15 shows the large number of shipping routes that pass through Indonesia waters, giving the nation a geographic impact on the economies across East Asia, as well as the markets to which they are tied in the South Asia, the Middle East, and East Africa. These economic realities make maritime security in Indonesia and its neighbors a matter of primary importance to nations around the world.

Figure VIII.14: Indonesia and Neighboring States



Source: Central Intelligence Agency, "CIA World Factbook – Indonesia." Accessed November 19, 2013. <https://www.cia.gov/library/publications/the-world-factbook/geos/id.html>

Figure VIII.15: Indian Ocean and Pacific Shipping Lanes



Source: "Robert D. Kaplan on China's Port Expansion in the Indian Ocean," Stratfor, June 29, 2012. <http://www.stratfor.com/video/robert-d-kaplan-chinas-port-expansion-indian-ocean-agenda> Republished with permission of Stratfor.

Indonesian Military Capabilities

As has been shown in **Figures VIII.2 to VII.6**, Indonesia has some 395,000 men in its active military forces, and its army remains a key political force in the country. The army is lightly armored and shaped more for counterinsurgency missions and internal security than conventional conflict.

The 45,000 man navy and 20,000 marine force is large by regional standards and has 11 guided missile frigates, 19 corvettes, 11 mine warfare craft, 53 patrol boats and coastal patrol boats, 5 helicopter-equipped amphibious ships, 26 LSTs, and 54 landing craft. It also has maritime patrol and surveillance aircraft and a significant number of naval helicopters. This force is capable of local power projection, but it is tailored largely for local defense and security.

The 30,000-man air force has a relatively small number of 63 combat aircraft, but they include 10 F-16/A/B, 5 Su-27, and 4 Su-30Mk fighters. The air force also has a squadron of modern maritime patrol aircraft. Indonesia also has a large structure of paramilitary forces, security forces, and police.

Indonesia is planning a major modernization effort as part of its medium and long-term development plans. These include the purchase over 100 Leopard tanks, up to 10 South Korean Chang Bogo submarines, more F-16s and Su-30s and AH-64s.

The Indonesia Armed Forces are some of the largest in the region in total personnel strength and major weapons systems. The Army is a particularly large force, with some 83 infantry and airborne battalions supported by 10 artillery battalions, 8 artillery battalions, and 3 rotary wing aviation

squadrons.⁵¹² Mechanized assets include some 220 light tanks, 227 light reconnaissance vehicles, and 512 armored personnel carriers.⁵¹³ On paper, this gives the Army a significant combined arms capability. However, these units suffer from neglected maintenance and training, significantly impacting their readiness for combat operations.⁵¹⁴

The Indonesian Navy has been neglected, and is not able to provide a fully adequate security presence across the 17,000 islands of the Indonesian Archipelago or interdict the movements of pirates and terrorist groups using the region as a safe haven. As of 2012, the Indonesia Navy possessed some 117 ships, including 6 frigates, 23 corvettes, and a mix of coastal patrol craft and transportation craft.⁵¹⁵ According to an assessment by IHS Jane's, many of these ships are old, in poor states of repair, and may not be seaworthy.⁵¹⁶

The CIA reports that,⁵¹⁷

Indonesia has a stated foreign policy objective of establishing stable fixed land and maritime boundaries with all of its neighbors; three stretches of land borders with Timor-Leste have yet to be delimited, two of which are in the Oecussi exclave area, and no maritime or Exclusive Economic Zone (EEZ) boundaries have been established between the countries; many refugees from Timor-Leste who left in 2003 still reside in Indonesia and refuse repatriation;

All borders between Indonesia and Australia have been agreed upon bilaterally, but a 1997 treaty that would settle the last of their maritime and EEZ boundary has yet to be ratified by Indonesia's legislature; Indonesian groups challenge Australia's claim to Ashmore Reef; Australia has closed parts of the Ashmore and Cartier Reserve to Indonesian traditional fishing and placed restrictions on certain catches; land and maritime negotiations with Malaysia are ongoing, and disputed areas include the controversial Tanjung Datu and Camar Wulan border area in Borneo and the maritime boundary in the Ambalat oil block in the Celebes Sea;

Indonesia and Singapore continue to work on finalizing their 1973 maritime boundary agreement by defining unresolved areas north of Indonesia's Batam Island; Indonesian secessionists, squatters, and illegal migrants create repatriation problems for Papua New Guinea; maritime delimitation talks continue with Palau; EEZ negotiations with Vietnam are ongoing, and the two countries in Fall 2011 agreed to work together to reduce illegal fishing along their maritime boundary.

Indonesia has long struggled with separatists and extremists. The US State Department reported in 2013 that,⁵¹⁸

A decade after the 2002 Bali bombings, Indonesia continued its counterterrorism efforts and initiatives and cooperated with a range of partners, including the United States. Law enforcement authorities made a series of preemptive arrests in 2012, demonstrating enhanced investigative techniques and an increasing ability to disrupt terrorists' plans before they could carry out attacks.

Despite the security challenges inherent in governing a nation composed of more than 17,000 islands, authorities were diligent in efforts to deny terrorists a safe haven. Police conducted raids at several locations, including in Poso, Central Sulawesi, where authorities began operations in October to disrupt an alleged terrorist training program associated with Jemaah Anshorut Tauhid.

In May, authorities arrested suspected terrorists based in Medan, North Sumatra, who had hacked into a multi-level marketing website and transferred funds to private accounts. This trend of terrorists seeking illicit funding through online crime is new to Indonesia. Limited weapons smuggling, often through the Philippines, posed an ongoing challenge. Authorities have expressed concern that, in some cases, explosive devices were of increasing sophistication.

Indonesia worked with international partners, including the United States, to deter and prevent terrorist attacks. Coordination among the various agencies responsible for preventing terrorism and prosecuting terrorists continued to pose challenges. Indonesia has sought to address this through better training for law enforcement, prosecutorial, and judicial officials, and by encouraging better information sharing between stakeholder agencies.

Continuing a trend in recent years, terrorists targeted Indonesian law enforcement officials. Incidents...Police arrested more than 150 people on charges of terrorism, and in the process of arrest, killed 10 suspects.

The Attorney General's Office received 42 terrorism cases to prosecute. As of early December, at least three cases were completed, 18 were under review, and 22 were in the trial stage. In February, the Supreme Court rejected the appeal of Abu Bakar Ba'asyir to overturn his conviction on charges of terrorism and reinstated a 15-year sentence. This reversed an October 2011 decision wherein judges at the Jakarta High Court threw out the original 15-year sentence and issued a nine-year jail term based on lesser charges.

In mid-April, seven members of a radical group were found guilty of plotting to poison the water and food supplies at a police cafeteria in Jakarta and sentenced to jail terms ranging from three to five years. This case prompted authorities to express concern about terrorists obtaining chemical and biological agents for use in attacks.

Indonesia belongs to the Asia/Pacific Group on Money Laundering, a Financial Action Task Force (FATF)-style regional body. In February 2012, FATF placed Indonesia on its Public Statement list because of Indonesia's failure to make sufficient progress in implementing its anti-money laundering/combating the financing of terrorism action plan. Indonesia faces possible FATF sanctions for failure to pass terrorist financing legislation. At year's end, revised terrorist financing legislation was pending before parliament.

Indonesia continued to lack a comprehensive law to implement UNSCRs 1267 and 1373, though the AML legislation provides for the freezing of terrorist assets linked to the UN List of designated terrorists and terrorist organizations. The Indonesian Financial Intelligence Unit routinely shared designated terrorists and terrorist entities with banks nationally through the Central Bank of Indonesia, but this had little effect since Indonesian authorities have not used existing regulations to freeze assets under UNSCR 1267.

Indonesia and Australia co-hosted the GCTF's inaugural South East Asia Capacity Building Working Group meeting in Semarang, Indonesia on March 6-7. Indonesian officials regularly participated in GCTF events throughout the year. On March 20, the Indonesian House of Representatives formally ratified the ASEAN Convention on Counterterrorism.

Indonesia broadened its efforts to counter radicalization and violent extremism. The Vice President's office convened an interagency taskforce charged with creating a blueprint for counterterrorism that includes initiatives to counter violent extremism. In concert with other government agencies, the National Counter Terrorism Agency (BNPT) developed plans for a media campaign to counter extremist narratives. BNPT also established a Terrorism Prevention Communication Forum in 15 of Indonesia's 34 provinces as a means to better coordinate counterterrorism efforts at the local level, and plans are underway to expand the program.

Recognizing that campuses are sometimes recruiting grounds for violent extremists, Plans were underway to open a rehabilitation and de-radicalization center for imprisoned terrorists in Sentul, one hour south of Jakarta. This facility, where terrorist prisoners would serve the latter part of their jail terms, would help prepare convicted terrorists for successful and non-violent reintegration back into society after their release. However, reforming the Indonesian corrections sector remained a daunting challenge, and the government had no comprehensive or standardized system in place to handle terrorist prisoners.

Until the late 1990s, Indonesia was a dictatorship. Its military, and particularly the elite Special Forces unit known as the KOPASSUS, had a reputation for serious human rights abuses. The military was focused almost entirely on internal security roles and the prevention of the balkanization of the country due to its vast and fragmented island geography. This issue was brought to the forefront of international politics with the 1999 secession of East Timor, and the Australian-led international intervention to prevent human rights abuses there.

This resulting tensions, especially in the Sulu and Sulawesi archipelagoes, created enough popular anger to help terrorist groups and pirates operate well into the 2000s. However, effective counterterrorism and counter-piracy partnership efforts have been highly effective in disrupting these threats in recent years.

Indonesian political reform has also had an impact. Since the end of the Suharto regime in 1998, and particularly under the current presidency of Susilo Bambang Yudhoyono, Indonesia has undergone a “momentous transition” according to the UN High Commissioner for Human Rights. It has ratified all major human rights conventions and is taking major steps to work with the UN to implement lasting human rights reforms.⁵¹⁹ Changes in Indonesia politics and the aid that the West gave during the 2004 Indian Ocean tsunami, have helped Western militaries have to begin joint training with their Indonesian counterparts. This effort stepped up significantly under President Obama, who authorized a return to direct training between US special operations forces and the KOPASSUS.⁵²⁰

Islamist Terrorism

Indonesia does not face serious threats from separatist groups with any noteworthy capability, and remains a low risk country, but it has had a long history of problems with violent sub-state groups, include pirates, Islamist terrorist groups, and regional separatist movements. The Darul Islam movement in Indonesia was one of the world’s first modern Islamist political movements and terrorist organizations, beginning in the 1940s.⁵²¹ This group was eventually suppressed through repressive counterinsurgency actions by the Indonesian government, but its violent factions have remained and morphed into the modern terrorist groups such as Jemaah Islamiyah (JI).⁵²²

JI was founded in the 1980s and developed a core of experienced fighters in Afghanistan fighting against the Soviet occupation. During this period, JI developed close ties with the Al Qaeda network in Afghanistan and Pakistan as well as with Philippine ASG, and at least some of its leadership embraced Al Qaeda’s vision for a global jihad.⁵²³ Al Qaeda acted as JI’s “terrorist patron,” enabling major attacks such as the 2002 Bali nightclub bombing.⁵²⁴ JI has also had ambitions about attacking shipping off the coast of Indonesia, as well as US Navy ships making port calls at Changi Naval Base in Singapore.⁵²⁵

JI has been able to make use of Indonesia’s large area, its dense jungle terrain, and complex system of islands and waterways to find a safe haven effectively beyond the reach of the government in Jakarta. A 2007 RAND Corporation report on the use of ungoverned areas by terrorist groups notes that the Sulawesi-Mindanao arc, where Indonesian and Philippine waters intersect, is a major safe haven and logistical hub for the Indonesian terrorist group Jemaah Islamiyah (JI) and the Philippine Abu Sayyaf Group.⁵²⁶ The report goes on to state that:⁵²⁷

The Sulawesi-Mindanao arc is a key corridor for the movement of Jemaah Islamiyah personnel. It is no accident that JI placed both...Central Sulawesi and Mindanao within the same Subregional organizational unit, Mantiqi III. This is significant because Mantiqi III serves as a major logistics cell for JI. This regional command is responsible for the procurement of equipment and explosives; more important, it is also responsible for building up relations and creating a network of Islamist groups. This network includes al-Qaeda operatives in Southeast Asia and sympathetic groups in the Philippines.

The maritime nature of the JI-ASG hub in Indonesia and the Philippines makes interdiction of the groups’ movements particularly difficult. The RAND report notes that “maritime borders are notoriously difficult to control, particularly along the Celebes and Sulu Seas, littoral countries for the most part lack the means of patrolling their territorial waters.”⁵²⁸ Chris Rawley, a specialist in maritime terrorism and transnational threats for the US Special Operations Command refers to seaborne transnational transport routes as “maritime ratlines,” which utilize seaborne lines of communication that have often existed for centuries and been used by legitimate merchants as well as smugglers and insurgent groups.⁵²⁹ Rawley goes on to note that⁵³⁰

Like their land-based counter-parts, maritime ratlines sometimes originate or terminate in countries where they are unable to be interdicted due to political or military reasons. Additionally, poor governance factors into the support of illicit networks, to include weak legislation and law enforcement, corruption, and complicit customs officials.

The JI-ASG nexus in the Sulu and Celebes seas is exemplary of this trend. The islands in this area are geographically removed by hundreds of miles from their respective national capitals in Jakarta and Manila, and local governance and law enforcement entities are not strong enough to prevent these groups from establishing discrete safe havens in the region.

A Cooperative Approach Against Terrorism

Western military partnerships with Indonesia began after the 2002 Bali nightclub bombing, when Australia and the US supported the creation of a new counterterrorism policing unit, Detachment 88, that would be kept deliberately separate from the KOPASSUS and other military units which had had a history of human rights abuses under the Suharto dictatorship from 1967-1998. Since 2002, Australia and the US have provided training in intelligence collection and forensics, resulting in a unit that is highly competent in tracking and disrupting Jemaah Islamiyah cells, without resorting to torture and other abusive practices.⁵³¹ These efforts are complimented by “soft power” approaches towards reconcilable detainees to expand intelligence sources, while hard line militants are sent to special prisons so that they will not indoctrinate less committed prisoners.⁵³²

Detachment 88 has been extremely successful, and is largely credited with a string of successes against JI in recent years.⁵³³ These include the capture or killing of all of JI’s major leaders, including Noordin Muhammed Top, Dulmatin, and Azahari bin Husin.⁵³⁴ The last major leader of the group, Umar Patek, fled to Pakistan, where he was arrested in Abbottabad in January, 2011.⁵³⁵

The removal of JI’s top leadership resulted in a loss of its major ties to the broader Al Qaeda network.⁵³⁶ As a result, the group has largely been marginalized, and while it remains present in parts of Indonesia, it has been largely relegated to a local rather than international threat. IHS Jane’s reports that,⁵³⁷

The group has become largely fragmented. As a result, it is no longer realistic to talk of JI as a centralized organization. JI remains an ideological reference point, but little more. Arrests and divergence among the former members have de-centralized the leadership structure. Most of those once part of JI are now committed to non-violent preaching and consolidation.

IHS Jane’s does note that “jihadist ideology is firmly rooted in Indonesia, at least among a small minority of Muslims, and more terrorist attacks cannot be ruled out over the medium term.” The US, Australia, and other allies will need to continue supporting Indonesia’s counterterrorism efforts through joint training and intelligence sharing in order to ensure that JI is not given the breathing room it needs to reconstitute itself.

Malaysia

Malaysia is one of Southeast Asia’s success stories, though it is not without internal problems as well. It has successfully transitioned from a provider of raw materials and agriculture to a high technology economy due to investments in biotechnology and other high technology industries as well as oil and gas.⁵³⁸

Malaysia has a GDP of \$494 billion, ranking 30th in the world, and a high GDP per capita by regional standards of \$16,800, ranking 79th in the world -- the second highest in Southeast Asia after Singapore.⁵³⁹ It is ranked as the 6th best country for ease of doing business, with only

moderate issues noted for resolving insolvency.⁵⁴⁰ It is also the 73rd country in terms of corruption,⁵⁴¹ and the 64th for overall human development.⁵⁴² Malaysia does, however, face demographic pressure. The US Census Bureau estimates that its population increased from 6.4 million in 1950 to 29.6 million in 2013, and will increase to 34.7 million in 2025 and 42.9 million in 2050.⁵⁴³

Malaysia is experiencing a troubled evolution away from what was effectively a one party (National Front), one leader (former Prime Minister Mahathir Mohamad) state. It is making progress, however, and opposition parties gained significant representation in its 2013 election. The World Bank governance index for 2013 rates Malaysia as having poor to moderate accountability, moderate political stability and violence, high effectiveness of governance, moderate to high regulatory quality, moderate to high quality of rule of law, and moderate to high control of corruption.⁵⁴⁴

The CIA provided the following summary description of notes the following regarding Malaysia's current economic status:⁵⁴⁵

Malaysia, a middle-income country, has transformed itself since the 1970s from a producer of raw materials into an emerging multi-sector economy. Under current Prime Minister Najib, Malaysia is attempting to achieve high-income status by 2020 and to move farther up the value-added production chain by attracting investments in Islamic finance, high technology industries, biotechnology, and services. Najib's Economic Transformation Program (ETP) is a series of projects and policy measures intended to accelerate the country's economic growth. The government has also taken steps to liberalize some services sub-sectors. The Najib administration also is continuing efforts to boost domestic demand and reduce the economy's dependence on exports.

The CIA summarized Malaysia's overall development as follows in January 2014,⁵⁴⁶

The first several years of the country's independence were marred by a communist insurgency, Indonesian confrontation with Malaysia, Philippine claims to Sabah, and Singapore's withdrawal in 1965. During the 22-year term of Prime Minister MAHATHIR bin Mohamad (1981-2003), Malaysia was successful in diversifying its economy from dependence on exports of raw materials to the development of manufacturing, services, and tourism. Prime Minister Mohamed NAJIB bin Abdul Razak (in office since April 2009) has continued these pro-business policies and has introduced some civil reforms.

...Malaysia, a middle-income country, has transformed itself since the 1970s from a producer of raw materials into an emerging multi-sector economy. Under current Prime Minister NAJIB, Malaysia is attempting to achieve high-income status by 2020 and to move farther up the value-added production chain by attracting investments in Islamic finance, high technology industries, biotechnology, and services.

NAJIB's Economic Transformation Program (ETP) is a series of projects and policy measures intended to accelerate the country's economic growth. The government has also taken steps to liberalize some services sub-sectors. The NAJIB administration also is continuing efforts to boost domestic demand and reduce the economy's dependence on exports. Nevertheless, exports - particularly of electronics, oil and gas, palm oil and rubber - remain a significant driver of the economy.

As an oil and gas exporter, Malaysia has profited from higher world energy prices, although the rising cost of domestic gasoline and diesel fuel, combined with strained government finances, has forced Kuala Lumpur to begin to reduce government subsidies. The government is also trying to lessen its dependence on state oil producer Petronas. The oil and gas sector supplies about 35% of government revenue in 2011.

Bank Negera Malaysia (central bank) maintains healthy foreign exchange reserves, and a well-developed regulatory regime has limited Malaysia's exposure to riskier financial instruments and the global financial crisis. Nevertheless, Malaysia could be vulnerable to a fall in commodity prices or a general slowdown in global economic activity because exports are a major component of GDP. In order to attract increased investment, NAJIB has raised possible revisions to the special economic and social preferences accorded to

ethnic Malays under the New Economic Policy of 1970, but he has encountered significant opposition, especially from Malay nationalists and other vested interests.

Malaysia's 109,000 man armed forces are shown in **Figures VIII-2 to VIII-6**. They have a long history of counterinsurgency capability, and face some pressure from Islamic extremism, but have been modernized and have played a role in UN peacekeeping functions and in the anti-piracy efforts near the Gulf of Aden at the other side of the IOR.

The Army is largely ethnically Malay. It is relatively lightly mechanized but well equipped for the conditions of local warfare. The Navy has only some 14,000 men but still operate two submarines, 4 guided missile frigate, and two regular frigates. It has some 40 corvettes. Patrol craft, and coastal craft, limited mine warfare capability, and amphibious landing craft. The Air Force is a mix of US F-18 and F-5E-II fighters, MiG-20 and Su-30s, and armed Hawk trainers. It has significant numbers of helicopters.

Malaysia is part of the Five Power Defense Arrangements between the United Kingdom, Australia, New Zealand, Malaysia and Singapore which were signed in 1971, and call for each state to consult in the event of aggression or threat of attack. It was set up follow the Britain's decision to withdraw all forces east of Suez in 1967. The FPDA calls for defense co-operation, and has created an Integrated Air Defence System (IADS) for Malaysia and Singapore based in Malaysia. This system owned by the Royal Malaysian Air Force, but rotating detachments of aircraft and personnel from all five countries participate in the system.

The installation of an eighth and final maritime surveillance radar was completed in 2012. Located on the northeastern coast of Sabah, these radars provided additional maritime domain awareness capability for the Malaysian Joint Forces Command.

There are no critical tensions between Malaysia and its neighbors, but the CIA reports that,⁵⁴⁷

while the 2002 "Declaration on the Conduct of Parties in the South China Sea" has eased tensions over the Spratly Islands, it is not the legally binding "code of conduct" sought by some parties; Malaysia was not party to the March 2005 joint accord among the national oil companies of China, the Philippines, and Vietnam on conducting marine seismic activities in the Spratly Islands...

...disputes continue over deliveries of fresh water to Singapore, Singapore's land reclamation, bridge construction, and maritime boundaries in the Johor and Singapore Straits; in 2008, ICJ awarded sovereignty of Pedra Branca (Pulau Batu Puteh/Horsburgh Island) to Singapore, and Middle Rocks to Malaysia, but did not rule on maritime regimes, boundaries, or disposition of South Ledge; land and maritime negotiations with Indonesia are ongoing, and disputed areas include the controversial Tanjung Datu and Camar Wulan border area in Borneo and the maritime boundary in the Ambalat oil block in the Celebes Sea;

...separatist violence in Thailand's predominantly Muslim southern provinces prompts measures to close and monitor border with Malaysia to stem terrorist activities; Philippines retains a dormant claim to Malaysia's Sabah State in northern Borneo; per Letters of Exchange signed in 2009, Malaysia in 2010 ceded two hydrocarbon concession blocks to Brunei in exchange for Brunei's sultan dropping claims to the Limbang corridor, which divides Brunei; piracy remains a problem in the Malacca Strait

The US State Department describes Malaysia continuing to improve its cooperation in counterterrorism in recent years, and as an important counterterrorism partner in 2012.⁵⁴⁸

Malaysia has not suffered a serious incident of terrorism for several years, but was vulnerable to terrorist activity and continued to be used as a transit and planning site for terrorists. Weak border controls persisted in the area contiguous with Thailand in northern Malaysia, and there were gaps in maritime security in the tri-border area of the southern Philippines, Indonesia, and the Malaysian state of Sabah.

The repeal of the decades-old Internal Security Act and its replacement by the new Security Offences (Special Measures) Act, along with several amendments to existing laws, moved Malaysia's counterterrorism

approach away from detention without trial to a criminal prosecution-based system. The Royal Malaysia Police (RMP) cooperated closely with the international community on counterterrorism efforts, and RMP and other law enforcement officers participated in capacity building training programs.

...There were no reported arrests...in 2012. In October, Lebanon arrested two Malaysians believed to be suicide bombers with suspected al-Qa'ida links...

As part of its visa and immigration controls, Malaysia continued to implement a biometrics system introduced in June 2011 that records the fingerprints of the right and left hand index fingers at all ports of entry. The National Foreigners Enforcement and Registration System reportedly was linked to the police's existing Biometric Fingerprint Identification System.

...Malaysia continued to participate in the Department of State's Antiterrorism Assistance program. The program began to transition in 2012 from its focus on cyber investigations and cyber security to a focus on border security.

Malaysia is a member of the Asia/Pacific Group on Money Laundering, a Financial Action Task Force-style regional body. Malaysia's Money Service Business Act of 2011 (MSBA), which took effect on December 1, 2011, was used for prosecution for the first time on August 10 when a company was charged with operating as a money-changer without a license. The MSBA represents an improved legislative framework that criminalized terrorist financing and strengthened the safeguards of the money services industry (the remittance, money-changing, and wholesale currencies businesses) against abuses. Compliance with the MSBA is monitored closely by Bank Negara Malaysia. Malaysia did not prosecute any counterterrorist finance crimes in 2012.

...Malaysia actively participated in ASEAN and the APEC forum. Malaysian law enforcement officials routinely met with regional counterparts to discuss counterterrorism issues at meetings such as the Heads of Asian Coast Guard Agencies Meeting in New Delhi in October, and the ASEAN Senior Officials Meeting on Transnational Crime in Bangkok in September. The Malaysian Maritime Enforcement Agency hosted boarding officer training and a Maritime Law Enforcement Commanders' Forum, funded by the Department of State's Export Control and Related Border Security program, to improve maritime law enforcement collaboration among Gulf of Thailand littoral nations.

Malaysia's Southeast Asia Regional Center for Counterterrorism (SEARCCT) hosted five seminars and training events with regional participation, including: a three-day Sub-Regional Seminar on International Joint Investigations for Southeast Asian States jointly organized by SEARCCT and the UN Counter-Terrorism Committee Executive Directorate with support from the government of New Zealand...

...Malaysia facilitated talks between the Philippine government and the Moro Islamic Liberation Front that resulted in the October signing of a historic peace framework agreement, an effort which some Malaysian officials have said was partly intended to reduce the potential for radicalization in a region of the Philippines that borders Malaysia.

The RMP and the Department of Islamic Development operated a disengagement program for terrorist suspects who were held under the ISA in Malaysia's Kamunting Prison. The program involved religious and social counseling and vocational training. It employed psychologists, religious scholars, police officers, and family members. A committee evaluated detainees' progress toward eligibility for release from prison. The committee's reports were reviewed by a panel from the detention center and also by the Home Ministry. Upon release, former inmates were visited by parole officers and continued to face restrictions on their activities, including curfews and limits on their travel and contacts. While the government portrayed the disengagement program as highly successful, it lacked demonstrable metrics for its effectiveness....

Myanmar/Burma

Myanmar is experiencing political reform and attempting to open its economy to outside investment and the world. This process began in 2011 when General Thanh Shwe, who had led the ruling military junta since 1992, turned over power to his handpicked successor Theinh Sein, who began a series of political and economic reforms aimed at developing at least a degree of democratic open government and improved relations with the West.

Progress, however remains mixed and uncertain and there is still ongoing fighting with sectarian and ethnic minorities. Its military also drafted a constitution deliberately designed to give its supporters power, and block outside challenges from figures like Burmese pro-democracy leader Aung San Suu Kyi. The UNDP ranks Myanmar 149th in terms of human development, with a composite score of .498, and Transparency International ranks it 157th in the world in terms of corruption.⁵⁴⁹ The World Bank governance index for 2013 rates Myanmar as having extremely low accountability, high political instability and violence, extremely low effectiveness of governance, extremely low regulatory quality, extremely quality of rule of law, and extremely low control of corruption.⁵⁵⁰

Myanmar contains numerous ethnic groups. The CIA reports that Myanmar's population is 68% Burman, 9% Shan, 7% Karen, 3% Chinese, 2% Indian, and 11% other small ethnic groups.⁵⁵¹ Many of these groups have demonstrated separatist political aspirations, and Kachin, Karen, and Shan ethnic groups all maintain active separatist movements. Clashes between them have contributed to the ongoing instability in the country, hindering many of the internal reforms it is trying to conduct.

Myanmar is clearly seeking to diversify its economy and economic ties to outside powers, but remains heavily under Chinese influence, and is a moderate risk state. The CIA reports that Myanmar is currently the poorest state in Asia, with some 32% of the population living in poverty.⁵⁵² It has a GDP of \$102 billion according to 2012 estimates, placing it 74th in the world. However, wealth is extremely concentrated amongst the military elite. GDP per capita is only \$1,200, ranking 201st in the world.⁵⁵³

The World Bank ranked Myanmar 182ndth in the world in ease of doing business in 2014, one of the worst rankings for any country in the world. It has low rankings in virtually every category: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting investors, paying taxes, trade across borders, enforcing contracts, and resolving insolvency.⁵⁵⁴ Myanmar does, however, possess large natural resources as well as an extensive coastline on the Indian Ocean, giving it significant economic potential if reforms continue.⁵⁵⁵

This CIA described Myanmar's mix of progress and risk in early 2014 as follows:⁵⁵⁶

In late September 2007, the ruling junta brutally suppressed protests over increased fuel prices led by prodemocracy activists and Buddhist monks, killing at least 13 people and arresting thousands for participating in the demonstrations. In early May 2008, Burma was struck by Cyclone Nargis, which left over 138,000 dead and tens of thousands injured and homeless. Despite this tragedy, the junta proceeded with its May constitutional referendum, the first vote in Burma since 1990. Parliamentary elections held in November 2010, considered flawed by many in the international community, saw the ruling Union Solidarity and Development Party garner over 75% of the seats. Parliament convened in January 2011 and selected former Prime Minister THEIN SEIN as president. Although the vast majority of national-level appointees named by THEIN SEIN are former or current military officers, the government has initiated a series of political and economic reforms leading to a substantial opening of the long-isolated country. These reforms have included allowing ASSK to contest parliamentary by-elections on 1 April 2012, releasing hundreds of political prisoners, reaching preliminary peace agreements with 10 of the 11 major armed ethnic groups, enacting laws that provide better protections for basic human rights, and gradually reducing restrictions on freedom of the press, association, and civil society. At least due in part to these reforms, ASSK now serves as an elected Member of Parliament and chair of the Committee for Rule of Law and Tranquility. Most political parties have begun building their institutions in preparation for the next round of general elections in 2015. The country is preparing to chair the Association of Southeast Asian Nations (ASEAN) in 2014.

...Burma is a resource-rich country but still suffers from pervasive government controls, inefficient economic policies, corruption, and rural poverty. Burma is the poorest country in Southeast Asia; approximately 32% of the population lives in poverty. Corruption is prevalent and significant resources in the extractive industries are concentrated in a few hands. The Burmese government has initiated notable economic reforms. In October 2011, 11 private banks were allowed to trade foreign currency. On April 2, 2012, Burma's multiple exchange rates were abolished and the Central Bank of Myanmar established a managed float of the Burmese kyat. In November 2012, President THEIN SEIN signed a new Foreign Investment Law. Despite these reforms, the Burmese government has not yet embarked on broad-based macro-economic reforms or addressed key impediments to economic development such as Burma's opaque revenue collection system. Key benchmarks of economic progress would include steps to ensure the independence of the Central Bank, provide budget allocation for social services, and enact laws to protect intellectual and real property. In recent years, foreign investors have shied away from nearly every sector except for natural gas, power generation, timber, and mining. The exploitation of natural resources does not benefit the population at large. The most productive sectors will continue to be in extractive industries - especially oil and gas, mining, and timber - with the latter two causing significant environmental degradation. Other areas, such as manufacturing, tourism, and services, struggle in the face of poor infrastructure, unpredictable trade policies, undeveloped human resources (the result of neglected health and education systems), endemic corruption, and inadequate access to capital for investment.

The US State Department Country Report on Human Rights 2013 described some progress, but one that still involved serious violence and repression,⁵⁵⁷

Burma's parliamentary government is headed by President Thein Sein. On April 1, the country held largely transparent and inclusive by-elections in which the National League for Democracy (NLD) party, chaired by Aung San Suu Kyi, won 43 of 45 contested seats out of a total 664 seats in the legislature. The by-elections contrasted sharply with the 2010 general elections, which were neither free nor fair. The ruling Union Solidarity and Development Party (USDP) continued to hold an overwhelming majority of the seats in the national parliament and state/regional assemblies, and active-duty military officers continued to wield authority at each level of government.

Military security forces reported to military channels, and civilian security forces, such as the police, reported to a nominally civilian ministry headed by an active-duty military general. In 2012 the government's continued reform efforts resulted in significant human rights improvements, although legal and policy revisions had yet to be implemented fully or consistently at the local level, particularly in ethnic nationality areas.

On January 13, President Thein Sein released an estimated 300 political prisoners, including top figures of the prodemocracy movement and all imprisoned journalists, and amnestied an estimated 140 political prisoners in subsequent releases, though none of the 2012 releases were unconditional. The government eased longstanding restrictions imposed on its citizens, including by relaxing censorship laws governing the media, expanding labor rights and criminalizing forced labor, and returning professional licenses to practice law for the majority of lawyers who had been disbarred for political activities or for their representation of political activists. The government also eased restrictions on dissidents both from within and outside the country, including removal of more than 2,000 names from a government blacklist of persons barred from entering or leaving the country based on their suspected political activity.

An outbreak of communal violence in June between predominantly Buddhist Rakhine and predominantly Muslim Rohingya in Rakhine State claimed the lives of an estimated 100 civilians and displaced tens of thousands before the central government reestablished calm. Violence broke out again in October and resulted in deaths estimated to exceed 100 and the burning of more than 3,000 houses in predominantly Rohingya villages. The central government took positive steps by deploying security forces to suppress violence, granting the international community access to the conflict areas, forming an investigative commission into the causes of the violence, and engaging international experts on reconciliation. Intercommunal tensions remained high.

At the end of the year, there were more than 100,000 internally displaced persons (IDPs) resulting from the violence in Rakhine State. The Burma Army escalated the use of force against the Kachin Independence Army (KIA) in December, including through the use of air power. In July the government stopped issuing

travel permission for UN humanitarian aid convoys to travel to Kachin Independence Organization (KIO)-controlled areas, effectively cutting off an estimated 40,000 IDPs from access to international humanitarian assistance. Local nongovernmental organizations (NGOs) were generally able to access these populations during this period. KIA forces allegedly destroyed civilian infrastructure, including roads, bridges, and trains, and targeted attacks on police officials in Kachin State.

Significant human rights problems in the country persisted, including conflict-related abuses in ethnic minority border states; abuse of prisoners, continued detention of more than 200 political prisoners and restrictions on released political prisoners; and a general lack of rule of law resulting in corruption and the deprivation of land and livelihoods. Government security forces were allegedly responsible for cases of extrajudicial killings, rape, and torture.

The government abused some prisoners and detainees, held some persons in harsh and life-threatening conditions, and failed to protect civilians in conflict zones. The government undertook some legal reforms during the year, and in practice restrictions on the exercise of a variety of human rights lessened markedly, if unevenly and unreliably, compared to past years. Nevertheless, a number of laws restricting freedom of speech, press, assembly, association, religion, and movement remained. The government allowed for greater expression by civil society, and NGOs were able to operate more openly than in previous years; however, the mandatory registration process for NGOs remained cumbersome and nontransparent.

Reporting by the International Crisis Group indicates that Myanmar is making progress towards a democratic transition, but has a great deal of work left to be done. For example, the ICG notes that the national legislature is “not a rubber stamp,” but is a vibrant and active forum for debate, and is able to “act as a real check on the power of the executive.”⁵⁵⁸

The military retains constitutional control over 25% of the seats in the legislature, and thus retains considerable influence over Myanmar’s domestic politics. The ICG also notes that the legislature lacks any experience with the process of legislating, and is hampered by a lack of committee staffs and policy research and development arms which would enable meaningful policymaking. These issues, while not insignificant, are speed bumps on the path to functioning democracy, and little risk is seen of serious regression towards autocracy.

Myanmar’s ethnic border wars have become less intense, but tensions still exist with the Karen, Kachin, Mon, Shan and other minority groups. Negotiations towards a comprehensive peace accord are ongoing. In November, 2013 the leadership of major ethnic separatist factions held and “unprecedented” joint meeting to discuss steps towards a ceasefire, and further rounds of dialogue between separatist groups and the government are planned for early 2014.⁵⁵⁹

As has been illustrated in **Figure VIII.2 to VIII.6**, Myanmar has one of the larger militaries in the region, but it is low-quality and lags significantly in terms of advanced weapons systems across all domains. Its forces have over 400,000 men and have moderate capability to deal with the nation’s internal tensions but have little capability to threaten outside states. The IISS reports that Myanmar has a comparatively large army, with significant amounts of aging Russian and Chinese armor and artillery, and some Western equipment.⁵⁶⁰ The navy has 4 missile frigates and corvettes, large numbers of patrol craft, and 18 amphibious craft. The air force has some 136 combat aircraft, but only 10 comparatively modern MiG-29 fighters. Myanmar has not, however, demonstrated any significant capability for power projection or blue water combat operations.

Some local risk of clashes across its borders and a low-level ethnic war is taking place with its Rohingya Muslim minority. The CIA World Factbook describes the current level of tension as follows:⁵⁶¹

...over half of Burma's population consists of diverse ethnic groups who have substantial numbers of kin in neighboring countries; the Naf River on the border with Bangladesh serves as a smuggling and illegal transit

route; Bangladesh struggles to accommodate 29,000 Rohingya, Burmese Muslim minority from Arakan State, living as refugees in Cox's Bazar.

Burmese border authorities are constructing a 200 km (124 mi) wire fence designed to deter illegal cross-border transit and tensions from the military build-up along border with Bangladesh in 2010; Bangladesh referred its maritime boundary claims with Burma and India to the International Tribunal on the Law of the Sea; Burmese forces attempting to dig in to the largely autonomous Shan State to rout local militias tied to the drug trade, prompts local residents to periodically flee into neighboring Yunnan Province in China; fencing along the India-Burma international border at Manipur's Moreh town is in progress to check illegal drug trafficking and movement of militants; 140,000 mostly Karen refugees fleeing civil strife, political upheaval and economic stagnation in Burma live in remote camps in Thailand near the border.

“There are more than more than 454,200 refugees in 2012 as a result of government offensives against armed ethnic minority groups near its borders with China and Thailand)) There were 808,075 stateless persons...Burma's main group of stateless people is the Rohingya, Muslims living in northern Rakhine State; the Burmese Government does not recognize the Rohingya as a "national race" and stripped them of their citizenship under the 1982 Citizenship law, categorizing them as "non-national" or "foreign residents"; native-born but non-indigenous people, such as Indians, and children born in Thailand to Burmese parents are also stateless; the Burmese Government does not grant citizenship to children born outside of the country to Burmese parents who left the country illegally or fled persecution.”

Drug exports and human trafficking present major problems. Myanmar is world's third largest producer of illicit opium with some production in the United Wa State Army's areas of greatest control but largely in the Shan state. The government takes little real effort to challenge narcotrafficking groups or deal with money laundering. As a result, Myanmar has become a significant regional locus of transnational organized crime. The US State Department does not report any major concentrations international terrorists or extremist movements likely to operate beyond Myanmar's territory and borders.⁵⁶²

Singapore

Singapore is a successful low risk state. It is a small state in area and population, but one that plays a major role in the IOR. Singapore's economy is free and open, and benefits from a highly educated workforce and government policies that are extremely favorable to investment. The World Bank rates Singapore as the best country in the world for ease of business.⁵⁶³ It has high rankings in virtually every category: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting investors, paying taxes, trade across borders, enforcing contracts, and resolving insolvency.⁵⁶⁴

Singapore's economy is heavily focused on high-tech industries and services, particularly pharmaceuticals and information technology and electronics items.⁵⁶⁵ The economy slowed as a result of the 2008 financial crisis, but its strong pro-business political environment, strong infrastructure, and highly educated population continue to drive economic growth. Singapore's current GDP is \$323 billion, and its GDP per capita is \$60,800.

Singapore's population of only 5 million is ethnically mixed, including 77% Malay, 14% Chinese, and 8% Indian. Despite these differences, Singapore maintains a strong open democracy with little to no ethnic strife. It has easily absorbed past population growth and is likely to do so in the future. The US Census Bureau estimates that its population increased from 1.02 million in 1950 to 5.46 million in 2013, and will increase to 6.7 million in 2025 and 8.61 million in 2050.⁵⁶⁶

Singapore's economic and strategic advantage is improved dramatically by its geographical location in Southeast Asia. As it is located at the southern entrance to the Malacca Strait and the southern edge of the South China Sea, the city-state holds strategic key-terrain that will be of

critical importance for dealing with the security challenges and energy-related geopolitical gamesmanship that is already taking place in the region. In particular, Singapore is critical to anti-piracy patrolling operations in the Malacca Strait, and to regional cooperative counterterrorism efforts. It also will play a role in maintaining security in the fractious South China Sea, and has started to serve as a base for up to four US Navy Littoral Combat Ships (LCSs) operating out of Changi Naval Base on a rotating basis.

It has relatively small military forces, but some of the most modern and best equipped forces in the region and close security ties to the US and is part of the Five Power Defense Arrangements between the United Kingdom, Australia, New Zealand, Malaysia and Singapore. As such, Singapore has the potential to act as an important net provider of regional security, punching significantly above its small size.

Figure VIII.16 shows just how small Singapore's territory is, but its strength is derived from an effective one party government and technocracy, and its extremely strong economy – which is on par with many developed nations and is amongst top performing economies in the world in GDP per capita terms.⁵⁶⁷ The city-state also has a well-educated populace and is able to fund outstanding social services and a high quality military for a nation its size. The World Bank governance index for 2013 rates Singapore as having moderate accountability, very high political stability and violence, very high effectiveness of governance, very high regulatory quality, very high quality of rule of law, and high control of corruption.⁵⁶⁸

The CIA summarized Singapore's political and economic stability as follows in January 2014,⁵⁶⁹

Singapore has a highly developed and successful free-market economy. It enjoys a remarkably open and corruption-free environment, stable prices, and a per capita GDP higher than that of most developed countries. The economy depends heavily on exports, particularly in consumer electronics, information technology products, pharmaceuticals, and on a growing financial services sector. Real GDP growth averaged 8.6% between 2004 and 2007. The economy contracted 0.8% in 2009 as a result of the global financial crisis, but rebounded 14.8% in 2010, on the strength of renewed exports, before slowing to 5.2% in 2011 and 1.3% in 2012, largely a result of soft demand for exports during the second European recession. Over the longer term, the government hopes to establish a new growth path that focuses on raising productivity, which has sunk to an average of about 1.0% in the last decade. Singapore has attracted major investments in pharmaceuticals and medical technology production and will continue efforts to establish Singapore as Southeast Asia's financial and high-tech hub.

Figure VIII.16. Singapore: Mini-State; Key Power

Source: Central Intelligence Agency Library. Accessed January 3, 2014.
<https://www.cia.gov/library/publications/cia-maps-publications/Singapore.html>

Singapore's Armed Forces – A Net Security Provider

Singapore has not experienced serious internal or external threats in spite of its mixed ethnicity. It has designed its military on the “Israeli Model” which maintains a small but highly professional cadre of active-duty troops and advanced military equipment, as well as a very large reserve force which, despite not being active duty military units, maintain high standards of training and readiness. **Figures VIII.2 to VIII.6** have shown that its forces include 60,500 active duty personnel, and 255,000 reservists. Its military conducts regular mobilization exercises – so common in fact that IHS Jane’s calls them a “fact of life in Singapore” – and most reserve forces can be mobilized and readied for deployment inside of six hours.⁵⁷⁰

IHS Jane’s assesses that this force will be capable of the full spectrum of combined arms operations. The Singapore Army consists of five combined arms divisions, each of which comprises 2 infantry brigades, an armored brigade, as well as an artillery unit to provide supporting fires to the mechanized maneuver elements.⁵⁷¹ These units, and especially the 21st Rapid Deployment Division, all maintain high training and readiness standards, despite the lack of

training space indigenous to Singapore. This is accomplished through rotational training exercises with Australia, New Zealand, Brunei, Thailand, Taiwan, and India, which allow for Singapore forces to train on foreign soil with other advanced militaries.⁵⁷²

Additionally, Singapore maintains a number of high end weapon systems for each of the branches of its armed forces, giving them the ability to effectively challenge an adversary at long range and away from its own small territory. This includes advanced armored vehicles such as the German Leopard 2 main battle tanks and the indigenously produced Bionix 25 infantry fighting vehicle, analogous to the US M-2 Bradley IFV. These systems provide Singapore with a significant technical overmatch against potential regional adversaries, helping to make up for its smaller numbers.

As with its ground forces, Singapore's air force maintains a small but potent Air Force which is likely the most advanced in the region due to its emphasis on high quality equipment and well trained personnel along the successful "Israeli Model." The backbone of Singapore's Air Force is its fleet of 84 F-16 multi-role fighters, which provide an effective long-range air superiority and strike capability.⁵⁷³ The Singapore Air Force also maintains 4 KC-135 Stratotankers and 5 KC-130 Hercules tankers which allow for mid-air refueling and effectively extend the range of the fighters for long range strike operations. This is critical to Singapore's doctrine for air power, which would seek to target a hostile force as far from Singapore's territory as possible, disrupting the enemy's operations and movement, and buying time for the Army to mobilize and prepare its defenses.

Singapore's Navy also follows the Israeli Model, maintaining a small fleet of high-end surface and sub-surface combatants. The backbone of the surface fleet is its six *Formidable* class stealth frigates, based on the French *La Fayette* class ships.⁵⁷⁴ These are extremely capable ships, equipped with phased-array multi-function radars and a number of precision-guided munitions for anti-surface, anti-air, and anti-submarine warfare, enabling precision strike at long range. The frigates are supported by six *Victory* class corvettes, which are likewise armed with precision weapons for the air, sea, and sub-surface domains. Finally, Singapore maintains five air independent propulsion attack submarines. These provide Singapore a significant capacity for sea control, and to contest the naval forces of much larger states.

Singapore and Malaysia forces together have significant local air-sea capability, and a combination of these forces and local bases could be a major assistance to the US in efforts to protect the security and stability of the region. They also have significant anti-piracy and anti-terrorism capability and could secure the Strait in most contingencies – particularly in cooperation with Indonesia.

All told, Singapore is well poised to act as a net security provider throughout Southeast Asia. Its military is professional, well trained, and highly capable, with a number of high-end weapons systems that can effectively confront any systems fielded by other states in the region in a one-on-one engagement. Furthermore, Singapore currently has no potential external threats, and is unique in the region for enjoying an extremely stable internal situation as well. Thus, Singapore is able to use its military to support regional and global cooperative security arrangements. For example, Singapore has sent naval forces to support Combined Task Force-150 with counter-piracy operations off the Horn of Africa, and has even taken two turns in the rotating command of the force. The US would do well to encourage as much military cooperation with Singapore as possible in order to support expanded regional security efforts.

Thailand

Thailand has long been one of the most powerful states in Southeast Asia, and along with Australia, it has been a significant US ally and vector for American influence in the region.⁵⁷⁵ With a stable ruling monarchy supported by a strong military, Thailand was a critical ally against communist expansion in Asia during the Cold War. Since that time, Thailand has made major progress in many areas, but that progress now risks being badly slowed, or even reversed in some areas, by deep political divisions that challenge Thailand's political stability, quality of governance, and economic growth.

Divisive Politics and Weakened Governance

Thailand is a nation experiencing a deep political crisis that is increasingly affecting its economy and limiting its ability to deal with religious violence in its south. The World Bank governance index for 2013 rates Thailand as having low accountability, very low political stability and violence, moderate effectiveness of governance, moderate regulatory quality, moderate quality of rule of law, and moderate low control of corruption.⁵⁷⁶

This reflects fact Thailand emerged as high-risk country in 2013 as a result of steady clashes between its main political factions that reached a crisis point after November 2013. The CIA described the situation in January 2014 as follows:⁵⁷⁷

Thailand since 2005 has experienced several rounds of political turmoil including a military coup in 2006 that ousted then Prime Minister Thaksin Shinawatra, followed by large-scale street protests by competing political factions in 2008, 2009, and 2010. Demonstrations in 2010 culminated with clashes between security forces and pro-Thaksin protesters, elements of which were armed, and resulted in at least 92 deaths and an estimated \$1.5 billion in arson-related property losses. Thaksin's youngest sister, Yingluck Shinawatra, in 2011 led the Puea Thai Party to an electoral win and assumed control of the government. Yingluck's leadership was almost immediately challenged by historic flooding in late 2011 that had large swathes of the country underwater and threatened to inundate Bangkok itself. Throughout 2012 the Puea Thai-led government struggled with the opposition Democrat Party to fulfill some of its main election promises, including constitutional reform and political reconciliation. Since January 2004, thousands have been killed and wounded in violence associated with the ethno-nationalist insurgency in Thailand's southern Malay-Muslim majority provinces.

This situation reach a new crisis point beginning in November 2013 because of the increasing tensions and crisis that emerged in late 2013 between factions that claim to represent its poor and rural sectors and to be centrists. The result was a series of demonstrations and protests that often paralyze traffic in central Bangkok, sometimes force government offices to shut down, and threatened to become violent in spite of considerable restraint by the police and security services. These protests were heavily driven by divisions between the urban and rural population, and Prime Minister Shinawatra's "cash populism" policies had increased these divisions by providing benefits to the rural poor at the expense of the urban middle and upper classes.⁵⁷⁸ .

This crisis led to major confrontations between the government and mass demonstrations in Bangkok that forced the government to resign and the government responded by calling for new elections to be held on February 2, 2014. The opposition, however, opposed the new elections and sought to replace an elected government with an appointed mix of its own supporters. It called for an unelected "people's council" to carry out political and electoral changes in a country that would effectively bypass the parties tied to Thaksin that had dominated elections since 2001, and called for its supporters to boycott the election.

Protests continued to escalate into 2014 as protestors from the People's Democratic Reform Committees, which support the Democrat Party that has long been aligned with Bangkok's ruling elite,⁵⁷⁹ attempted to block voting ahead of the general election scheduled for February 2 2014. The end result was that only 45.84% of voters participated in the election, the Election Commission, versus 75% in the 2011 vote that had brought Yingluck to power. This left Prime Minister Yingluck Shinawatra as the head of a weak and unstable head of a caretaker government with limited powers. If there was any good news, it was that Prayuth Chan-ocha, the head of the Thai army, reacted by saying that he would not do anything "beyond the limits," although he added that, "I would rather not say whether I approve of the election."⁵⁸⁰

Thailand's increasingly unstable political future was made even more uncertain by the fact that King Bhumibol Adulajey – who the protestors look to name a new government – was 86 years old and in increasingly poor health. His heir apparent, Crown Prince Virajalongkorn, was seen by some Thais as something of a playboy and as lacking the skill and charisma of his father, which he would need to deal with the political situation.⁵⁸¹ The Thai army and security services were also reluctant to use force against the civil population and to takeover politically as they had in the past.

Mixed Economic Indicators and a Source of Instability and Violence

Thailand still had a strong economy in 2013, with a GDP of \$645 billion, ranking 25th in the world. The CIA noted that:

With a well-developed infrastructure, a free-enterprise economy, generally pro-investment policies, and strong export industries, Thailand achieved a steady growth due largely to industrial and agricultural exports – mostly electronics, agricultural commodities, automobiles and parts, and processed foods. Thailand is trying to maintain growth by encouraging domestic consumption and public investment to offset weak exports in 2012. Unemployment, at less than 1% of the labor forces, stands as one of the lowest levels in the world.

The World Bank still ranked it the 18th best country in the world for ease of doing business.⁵⁸² It had good rankings in virtually every category: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting investors, paying taxes, trade across borders, enforcing contracts, and resolving insolvency.⁵⁸³

The UNDP, however, ranked Thailand 103rd on the Human Development Index with a score of .69,⁵⁸⁴ and Transparency International ranked it 102nd in the world. Moreover, Thailand's wealth was highly concentrated and the CIA estimated that its GDP per capita was only \$9,500.00 - 120th in the world.⁵⁸⁵ This disparity of income was particularly sharp in rural areas, in urban areas that did not have major tourist attractions, and in areas in the greater Bangkok area with high rates of migration from the countryside.

The political unrest in Thailand that began to peak in November 2013 was also having an increasingly negative impact by the start of 2014. The Thai government released data in mid-February 2014 that showed that the economy only grew 0.6 percent in the final quarter of 2013, compared with the same period in 2013. That was a sharp drop from the 2.7 percent growth in the previous quarter, the slowest pace since early 2012 when the economy was hurt by floods in Thailand's manufacturing areas, and caused Thailand's annual growth to drop from 6.5% in 2012 to only 2.9% in 2013.⁵⁸⁶

Current Population Pressure, but Stabilizing Demographics

Thailand also faces problems with population pressure – which contributed to both pressure on the land in agricultural areas and a high rate of urban migration – generally into low income jobs and poor living conditions. The US Census Bureau estimates that its population increased from 20 million in 1950 to 67.5 million in 2013. This almost certainly helped contributed to the political tensions in Thailand today.

The good news, however, is that a declining birth rate is a long-term stabilizing factor, given a population with a median age of 35 years.⁵⁸⁷ The US Census Bureau only projects the population to increase to 69.6 million in 2025 and to drop to 66.1 million in 2050.⁵⁸⁸ If these projections are correct, Thailand will not face a growing “youth bulge” in the future.

Religious Violence in the South

The Thai population is a relatively homogeneous, consisting of 75% Siamese and 11% Chinese, as well as a number of smaller ethnicities. Some 94% of the population is Buddhist, meaning that Thailand has been able to limit the ethnic and religious-based infighting that has plagued neighbors such as Myanmar.

Thailand does, however, face religious violence in its south, where there has been growing tension and violence between Buddhist and its Muslim minority and small violent Islamist extremist elements.

While Thailand is largely Buddhist country, its three southern provinces of Pattani, Yala and Narathiwat have a Muslim majority and there has been resistance to central government rule for decades that began to surface violently in 2004 and which continues in 2014. The Thai government estimates that more than 5,700 people have been killed since a low-level insurrection began in January 2004 and more than 40 were killed in January 2014.⁵⁸⁹

The government did open peace talks in 2013, but negotiations between the state and representatives of major rebel group the Barisan Revolusi Nasional (the National Revolutionary Front, or BRN), have not moved forward. A meeting scheduled for December 2013, in part because the Thai authorities were focusing on the Red-Yellow protests in Bangkok and other ethnic Thai areas.

In short Thailand's political instability has the potential to depress Thailand's strong economic activity and limit its ability end the conflict between its Buddhists and Muslims. Alternatively, it could eventually trigger a coup by the military, which has executed some 19 coups since the 1930s.⁵⁹⁰ Past military coups have established conservative transitional governments and allowed for some degree of order in political transitions, but given the deep divisions currently paralyzing Thailand's political scene, it is not clear that a coup would have the same results this time.

Security and Military Capability

As for regional security, **Figures VIII-2 to VIII-6** show that Thailand is a significant local military power, but it is closely linked to the US and does not present a security challenge to the IOR. Thailand has comparatively large and well-funded military forces, but their involvement in Thai political disputes has affected their capability, and some problems have surfaced with conscripts from poorer rural areas. Its 130,000 man land forces are best-equipped and organized for local warfare and to defend the country's borders, but have not been able to defeat Malay-Muslim insurgents in the three southernmost provinces and this is likely to be an enduring problem. A

series of low-level border clashes with Cambodia during 2008 to 2011 involved small infantry actions and the limited use of artillery and mortars.

The Thai Navy and Air Force could play a role in securing trade routes in the area. The Navy is relatively large with one light aircraft carrier, 10 frigates, eight missile frigates, and two conventional frigates. The Navy has significant numbers of regular and guided missile patrol boats, seventeen mine warfare craft, and significant amphibious warfare capability.. There are 23,000 marines. The Air Force has some 163 combat aircraft with 54 modern F-16A/B fighters, significant numbers of helicopters, and AEW and ISR aircraft. The navy has P-3A, maritime patrol, and other surveillance aircraft.

Thailand and the US have maintained a mutual defense alliance dating back to the early years of the Cold War. In 2012 Secretary of Defense Leon Panetta took steps to modernize this alliance with the signing of the Joint Vision Statement for the Thai-US Defense Alliance.⁵⁹¹ This Joint Vision Statement places the focus of defense cooperation on regional security in Southeast Asia through joint exercises such as Cobra Gold, the largest military exercise in the Asia-Pacific, which is hosted annually by the Royal Thai Armed Forces.⁵⁹² The Vision Statement also makes explicit US support for Thailand's leadership in regional military cooperation and stability efforts.

Thailand does, however, face some problems. Large numbers of Burmese, Chao Lai, and Rohingya refugees from Burma are stateless. Thailand is a major source of human trafficking but largely a transit route for narcotics. The CIA also reports that Thailand has the following tensions with its neighbors:⁵⁹³

...separatist violence in Thailand's predominantly Malay-Muslim southern provinces prompt border closures and controls with Malaysia to stem insurgent activities; Southeast Asian states have enhanced border surveillance to check the spread of avian flu; talks continue on completion of demarcation with Laos but disputes remain over several islands in the Mekong River;

...despite continuing border committee talks, Thailand must deal with Karen and other ethnic rebels, refugees, and illegal cross-border activities; Cambodia and Thailand dispute sections of boundary; in 2011 Thailand and Cambodia resorted to arms in the dispute over the location of the boundary on the precipice surmounted by Preah Vihear temple ruins, awarded to Cambodia by ICJ decision in 1962 and part of a planned UN World Heritage site...

Thailand is studying the feasibility of jointly constructing the Hatgyi Dam on the Salween river near the border with Burma; in 2004, international environmentalist pressure prompted China to halt construction of 13 dams on the Salween River that flows through China, Burma, and Thailand; 140,000 mostly Karen refugees fleeing civil strife, political upheaval and economic stagnation in Burma live in remote camps in Thailand near the border

The US State Department also describes Thailand as carrying out a significant counterterrorism effort:⁵⁹⁴

Counterterrorism cooperation with Thailand remained strong. Thailand engaged with the United States on investigations into Hizballah and Iranian activities after incidents involving both occurred in January and February... There was no direct evidence of operational linkages between the southern Thai insurgent groups and international terrorist networks.

...The porous nature of Thailand's southern border with Malaysia remained an issue of concern. At the same time, cross-border law enforcement cooperation, based on long association between Thai and Malaysian police officers, remained strong. With support from the United States, Thailand continued to use the Personal Identification Secure Comparison and Evaluation System (PISCES) border security system at five airports and four land border stations until June. In June, the Thai government replaced PISCES with the Personal Identification and Blacklist Immigration Control System (PIBICS) – an information capture and query

system designed for the Thai Immigration Bureau – at eight points of entry, except Suvarnabhumi International Airport in Bangkok, for a three month trial evaluation.

Thailand is a member of the Asia/Pacific Group on Money Laundering, a Financial Action Task Force (FATF)-style regional body. Thailand's 2010-2015 National Strategy for Combating Money Laundering and the Financing of Terrorism was developed by the Anti-Money Laundering Office (AMLO), Thailand's official Financial Intelligence Unit. The strategy called for the legislative enactment of key counterterrorist finance measures by October 31, 2012; however, widespread flooding and political transitions delayed the passage of legislation.

...Thailand's failure to pass the amended Anti-Money Laundering Act and the draft bill of Anti-Financing of Terrorist prompted the FATF, in February 2012, to downgrade Thailand to its 'blacklist' of countries, raising concern about financial transactions in Thailand. Since then, Thailand has passed the legislation and will be considered by the FATF for removal from the blacklist from its enhanced monitoring process in June 2013, pending a successful completion of the on-site visit.

...The Bank of Thailand does not have regulations that give it explicit authorization to control charitable donations; however, the Financial Institutions Business Act and the Electronic Payment Services Business Decree require all financial institutions and non-bank service providers to adopt both know-your-customer rules and customer due diligence procedures for all clients, and must meet the Anti-Money Laundering Act's reporting requirements, which would include transactions deriving from charitable donations.

...Thailand participated in international counterterrorism efforts, including through APEC, ASEAN, the ASEAN Regional Forum, the Asia-Europe Meeting, and the Bay of Bengal Initiative for Multi-Sectoral, Technical, and Economic Cooperation. Thailand, along with the U.S. Pacific Command, co-hosted 11 countries for the annual Pacific Area Security Sector Working Group.

...A range of Thai government agencies, including the Southern Border Provincial Administration Center and the Internal Security Operations Command, continued to organize outreach programs to ethnic Malay-Muslims to counter radicalization and violent extremism. A small group of international NGOs also reached out to communities in the southern provinces to provide services and to identify the underlying causes of the area's violence.

Stability and Security in the Southeast Asia Sub-Region

There is no easy way to summarize the deeply conflicting trends within the Subregion. Australia is a fully developed state. Some countries like Singapore and Malaysia are approaching that status, but still need further political evolution. Indonesia is making important progress, and Myanmar shows some positive indicators.

Aside from some border issues and limited ethnic and sectarian conflicts, the main security challenge to the Subregion is a limited one from piracy. The Subregion does, however, face a growing challenge from China's emerge as a major power, and in deciding what level of strategic partnerships it will create and sustain with the US and other powers. The broader impact of these issues is explored in more depth in the following chapter.

IX. US AND CHINESE STRATEGIC COMPETITION OR COOPERATION IN THE IOR

The tensions that now affect China's role in dealing with Southeast Asia are only part of a broader pattern of strategic change in the IOR that are shaped by shifts in US and Chinese forces. Much of the future stability and security of the IOR will be determined by the level of forces the US continues to deploy in the region, the level of forces China deploys, and each country's evolving power projection capabilities and partnerships with local powers.

At present, the United States dominates the overall naval and air balance outside the littoral areas of the IOR. The US does not, however, plan to deploy large air-sea forces in the IOR on a permanent basis, and relies heavily on strategic partners for basing, support, and additional forces. While the IOR the security and stability of

China is an emerging air and seapower that already plays an anti-piracy role in the IOR, is making an increased number of naval visits, and may come to play a major role in the IOR in the future. China is still, however, focusing on the Pacific and developing the mix of naval, air, and sea power to help enforce its claims from the China Sea to the waters and air space of Korea and Japan. Chia is focusing on being able to deter and challenge US forces n the Pacific, and is at least five years – and probably ten years – away from the level of strength it will need to achieve parity with US air-sea forces.

Much will depend, however, on the level of forces and the quality of the strategic partnerships the US can maintain in the Gulf, the IOR, and the Pacific over the next decade. The shift in US energy import dependence described in Chapter I, and US budget debates, have so far prevented the US from translating its declared strategy into developing stable force plans. Similarly, China faces its own problems in terms of the reaction of other states in Asia, demographic problems, and the ability to sustain the economic growth that is the key to competing directly with the US.

Accordingly, the present military balance between the US and China is not a key strategic issue. It is rather how each side's role in the IOR will evolve over time, how its military capabilities and partnership will develop, and the extent to which both powers come to compete in terms that have a major impact.

US Strategy Affecting the IOR

The US announced major shifts in its national strategy in a document called *Sustaining US Global Leadership: Priorities for 21st Century Defense* the DoD issued on January 3, 2012.⁵⁹⁵ The new US strategy for the IOR did not focus on a “pivot to Asia” -- a phrase sometimes used in US speeches. The strategy described a limited “rebalancing” of forces from NATO and Europe to the US and Pacific. Aside from this, it gave equal priority to both Asia and the Middle East.⁵⁹⁶

U.S. economic and security interests are inextricably linked to developments in the arc extending from the Western Pacific and East Asia into the Indian Ocean region and South Asia, creating a mix of evolving challenges and opportunities. Accordingly, while the U.S. military will continue to contribute to security globally, *we will of necessity rebalance toward the Asia-Pacific region.*

Our relationships with Asian allies and key partners are critical to the future stability and growth of the region. We will emphasize our existing alliances, which provide a vital foundation for Asia-Pacific security. We will also expand our networks of cooperation with emerging partners throughout the Asia-Pacific to ensure collective capability and capacity for securing common interests. The United States is also investing in a

long-term strategic partnership with India to support its ability to serve as a regional economic anchor and provider of security in the broader Indian Ocean region. Furthermore, we will maintain peace on the Korean Peninsula by effectively working with allies and other regional states to deter and defend against provocation from North Korea, which is actively pursuing a nuclear weapons program.

The maintenance of peace, stability, the free flow of commerce, and of U.S. influence in this dynamic region will depend in part on an underlying balance of military capability and presence. Over the long term, China's emergence as a regional power will have the potential to affect the U.S. economy and our security in a variety of ways. Our two countries have a strong stake in peace and stability in East Asia and an interest in building a cooperative bilateral relationship. However, the growth of China's military power must be accompanied by greater clarity of its strategic intentions in order to avoid causing friction in the region.

The United States will continue to make the necessary investments to ensure that we maintain regional access and the ability to operate freely in keeping with our treaty obligations and with international law. Working closely with our network of allies and partners, we will continue to promote a rules-based international order that ensures underlying stability and encourages the peaceful rise of new powers, economic dynamism, and constructive defense cooperation.

In the Middle East, the Arab Awakening presents both strategic opportunities and challenges. Regime changes, as well as tensions within and among states under pressure to reform, introduce uncertainty for the future. But they also may result in governments that, over the long term, are more responsive to the legitimate aspirations of their people, and are more stable and reliable partners of the United States.

Our defense efforts in the Middle East will be aimed at countering violent extremists and destabilizing threats, as well as upholding our commitment to allies and partner states. Of particular concern are the proliferation of ballistic missiles and weapons of mass destruction (WMD). U.S. policy will emphasize Gulf security, in collaboration with Gulf Cooperation Council countries when appropriate, to prevent Iran's development of a nuclear weapon capability and counter its destabilizing policies. The United States will do this while standing up for Israel's security and a comprehensive Middle East peace. *To support these objectives, the United States will continue to place a premium on U.S. and allied military presence in – and support of – partner nations in and around this region.*

Former US Secretary of Defense Leon Panetta described these shifts in US strategy in more detail in a speech to the Shangri-La Security Dialogue in Singapore on June 2, 2012. It is critical to note, however, that Secretary Panetta did not discuss major increases in US forces, acknowledged the constraints on US military resources, and focused on the need for US and Chinese cooperation and dialogue:⁵⁹⁷

The purpose of this trip, and of my remarks today, is to explain a new defense strategy that the United States has put in place and why the United States will play a deeper and more enduring partnership role in advancing the security and prosperity of the Asia-Pacific region, and how the United States military supports that goal by rebalancing towards this region.

... America's fate is inexorably linked with this region. This reality has guided more than six decades of U.S. military presence and partnership in this region -- a defense posture that, along with our trading relations, along with our diplomatic ties, along with our foreign assistance, helped usher in an unprecedented era of security and prosperity in the latter half of the 20th century.

In this century, the 21st century, the United States recognizes that our prosperity and our security depend even more on the Asia-Pacific region. After all, this region is home to some of the world's fastest growing economies: China, India, and Indonesia to mention a few. At the same time, Asia-Pacific contains the world's largest populations, and the world's largest militaries. Defense spending in Asia is projected by this institute, the IISS, to surpass that of Europe this year, and there is no doubt that it will continue to increase in the future.

Given these trends, President Obama has stated the United States will play a larger role in this region over the decades to come. This effort will draw on the strengths of the entire United States government. We take on this role not as a distant power, but as part of the Pacific family of nations. Our goal is to work closely

with all of the nations of this region to confront common challenges and to promote peace, prosperity, and security for all nations in the Asia-Pacific region.

... We will play an essential role in promoting strong partnerships that strengthen the capabilities of the Pacific nations to defend and secure themselves. All of the U.S. military services are focused on implementing the president's guidance to make the Asia-Pacific a top priority. Before I detail these specific efforts, let me provide some context for our broader defense strategy in the 21st century.

The United States is at a strategic turning point after a decade of war. We have significantly weakened al-Qaida's leadership and ability to attack other nations. We have sent a very clear message that nobody attacks the United States and gets away with it.

Our military mission in Iraq has ended and established—established an Iraq that can secure and govern itself.

In Afghanistan, where a number of Asia-Pacific nations are playing a critical role in the international coalition, we have begun our transition to the Afghan security lead and to an Afghanistan that can secure and govern itself. Recent meeting in Chicago, NATO and its partners—over 50 nations—came together to support General Allen's plan to accomplish this goal. In addition to that, we joined in a successful NATO effort to return Libya to the Libyan people.

But even as we have been able to draw these wars to a hopeful end, we are confronted today by a wide range of complex global challenges. From terrorism—terrorism still remains a threat to the world—from terrorism to the destabilizing behavior of Iran and North Korea, from nuclear proliferation to the new threat of cyberattack, from continuing turmoil in the Middle East to territorial disputes in this region.

At the same time, the United States, like many other nations, is dealing with large debt and large deficits, which has required the Department of Defense to reduce the planning budget by nearly half a trillion dollars or specifically \$487 billion that were directed to be reduced by the Congress in the Budget Control Act over the next decade. But this new fiscal reality, challenge that many nations confront these days, has given us an opportunity to design a new defense strategy for the 21st century that both confronts the threats that we face and maintains the strongest military in the world.

This strategy makes clear the United States military, yes, it will be smaller, it will be leaner, but it will be agile and flexible, quickly deployable, and will employ cutting-edge technology in the future. It makes equally clear that while the U.S. military will remain a global force for security and stability, we will of necessity rebalance towards the Asia-Pacific region. We will also maintain our presence throughout the world. We will do it with innovative rotational deployments that emphasize creation of new partnerships and new alliances. We will also invest, invest in cyber, invest in space, invest in unnamed systems, invest in special forces operations. We will invest in the newest technology and we will invest in the ability to mobilize quickly if necessary.

We have made choices and we have set priorities, and we have rightly chosen to make this region a priority.

Our approach to achieving the long-term goal in the Asia-Pacific is to stay firmly committed to a basic set of shared principles -- principles that promote international rules and order to advance peace and security in the region, deepening and broadening our bilateral and multilateral partnerships, enhancing and adapting the U.S. military's enduring presence in this region, and to make new investments in the capabilities needed to project power and operate in Asia-Pacific. Let me discuss each of these shared principles.

The first is the shared principle that we abide by international rules and order. Let me underscore that this is not a new principle, our solid commitment to establish a set of rules that all play by is one that we believe will help support peace and prosperity in this region. What are we talking about? These rules include the principle of open and free commerce, a just international order that emphasizes rights and responsibilities of all nations and a fidelity to the rule of law; open access by all to their shared domains of sea, air, space, and cyberspace; and resolving disputes without coercion or the use of force.

Backing this vision involves resolving disputes as quickly as possible with diplomatic efforts. Backing these principles has been the essential mission of the United States military in the Asia-Pacific for more than 60 years and it will be even a more important mission in the future. My hope is that in line with these rules and international order that is necessary that the United States will join over 160 other nations in ratifying the Law of Seas Convention this year.

The second principle is one of partnerships. Key to this approach is our effort to modernize and strengthen our alliances and partnerships in this region. The United States has key treaty alliances with Japan, South Korea, Australia, Philippines and Thailand. We have key partners in India, Singapore, Indonesia, and other nations. And we are working hard to develop and build stronger relations with China.

As we expand our partnerships, as we strengthen our alliances, the United States-Japan alliance will remain one of the cornerstones for regional security and prosperity in the 21st century. For that reason, our two militaries are enhancing their ability to train and operate together, and cooperating closely in areas such as maritime security and intelligence, surveillance and reconnaissance. We are also jointly developing high-tech capabilities, including the next generation missile defense interceptor, and exploring new areas of cooperation in space and in cyberspace.

In the past several months we have strengthened the alliance and our broader strategic objectives in the region with a revised plan to relocate Marines from Okinawa to Guam. This plan will make the U.S. presence in Okinawa more politically sustainable, and it will help further develop Guam as a strategic hub for the United States military in the Western Pacific, improving our ability to respond to a wide range of contingencies in the Asia-Pacific region.

Another linchpin of our Asia-Pacific security is the U.S. alliance with the Republic of Korea. During a year of transition and provocation on the Korean Peninsula, this alliance has been indispensable, and I have made it a priority to strengthen it for the future. To that end, even as the United States reduces the overall size of its ground forces in the coming years in a transitional way over a five-year period, we will maintain the United States Army's significant presence in Korea. We are also boosting our intelligence and information sharing with the Republic of Korea, standing firm against hostile provocations from North Korea while transforming the alliance with new capabilities to meet global challenges.

The third shared principle is presence. While strengthening our traditional alliances in Northeast Asia and maintaining our presence there, as part of this rebalancing effort we are also enhancing our presence in Southeast Asia and in the Indian Ocean region.

A critical component of that effort is the agreement announced last fall for a rotational Marine Corps presence and aircraft deployments in northern Australia. The first detachment of Marines arrived in April, and this Marine Air-Ground Task Force will be capable of rapidly deploying across the Asia-Pacific region, thereby enabling us to work more effectively with partners in Southeast Asia and the Indian Ocean and tackle common challenges such as natural disasters and maritime security.

These Marines will conduct training and exercises throughout the region and with Australia, strengthening one of our most important alliances and building on a decade of operational experience together in Afghanistan. Speaking of that, I welcome and applaud Australia's announcement that later this year it will assume leadership of Combined Team Uruzgan, and will lead our security efforts there through 2014.

We're also continuing close operational cooperation with our longtime ally, Thailand. The Thais annually host COBRA GOLD, a world-class multilateral military exercise, and this year we will deepen our strategic cooperation to meet shared regional challenges. We are energizing our alliance with the Philippines. Last month in Washington I joined Secretary Clinton in the first-ever "2+2" meeting with our Filipino counterparts. Working together, our forces are successfully countering terrorist groups. We are also pursuing mutually beneficial capability enhancements, and working to improve the Philippine's maritime presence. Chairman Dempsey will be traveling from here to the Philippines to further our military engagement.

Another tangible manifestation of our commitment to rebalancing is our growing defense relationship with Singapore. Our ability to operate with Singaporean forces and others in the region will grow substantially in the coming years when we implement the forward deployment of the Littoral Combat Ships to Singapore.

As we take existing alliances and partnerships in new directions, this rebalancing effort also places a premium on enhancing partnerships with Indonesia, Malaysia, India, and Vietnam, and New Zealand. In the coming days I will travel to Vietnam to advance bilateral defense cooperation, building off of the comprehensive memorandum of understanding that our two nations signed last year. From Vietnam, I will travel to India to affirm our interest in building a strong security relationship with a country I believe will play a decisive role in shaping the security and prosperity of the 21st century.

As the United States strengthens these regional partnerships, we will also seek to strengthen a very important relationship with China. We believe China is a key to being able to develop a peaceful, prosperous, and secure Asia-Pacific in the 21st century. And I am looking forward to traveling there soon at the invitation of the Chinese government. Both of our nations recognize that the relationship -- this relationship between the United States and China is one of the most important in the world. We in the United States are clear-eyed about the challenges, make no mistake about it, but we also seek to grasp the opportunities that can come from closer cooperation and a closer relationship.

I'm personally committed to building a healthy, stable, reliable, and continuous mil-to-mil relationship with China. I had the opportunity to host Vice President Xi and later Defense Minister General Liang at the Pentagon in the effort to pursue that goal. Our aim is to continue to improve the strategic trust that we must have between our two countries, and to discuss common approaches to dealing with shared security challenges.

We are working with China to execute a robust military-to-military engagement plan for the rest of this year, and we will seek to deepen our partnership in humanitarian assistance, counter-drug, and counter-proliferation efforts. We have also agreed on the need to address responsible behavior in cyberspace and in outer space. We must establish and reinforce agreed principles of responsible behavior in these key domains.

I know that many in the region and across the world are closely watching the United States-China relationship. Some view the increased emphasis by the United States on the Asia-Pacific region as some kind of challenge to China. I reject that view entirely. Our effort to renew and intensify our involvement in Asia is fully compatible -- fully compatible -- with the development and growth of China. Indeed, increased U.S. involvement in this region will benefit China as it advances our shared security and prosperity for the future.

In this context, we strongly support the efforts that both China and Taiwan, both have made in recent years trying to improve cross-strait relations. We have an enduring interest in peace and stability across the Taiwan Strait. The United States remains firm in the adherence to a one-China policy based on the Three Communiqués and the Taiwan Relations Act. China also has a critical role to play in advancing security and prosperity by respecting the rules-based order that has served the region for six decades. The United States welcomes the rise of a strong and prosperous and successful China that plays a greater role in global affairs.

Another positive step towards furthering this rules-based order is Asia's deepening regional security architecture, which the United States strongly supports. Last October, I had the opportunity to be the first U.S. secretary of defense to meet privately with all ASEAN defense ministers in Bali. We applaud the ASEAN Defense Ministers Meeting Plus for producing real action plans for multilateral military cooperation, and I strongly support the ASEAN decision to hold more frequent ADMM-Plus discussions at the ministerial level. We think this is an important step for stability, real coordination, communication, and support between these nations.

The United States believes it is critical for regional institutions to develop mutually agreed rules of the road that protect the rights of all nations to free and open access to the seas. We support the efforts of the ASEAN countries and China to develop a binding code of conduct that would create a rules-based framework for regulating the conduct of parties in the South China Sea, including the prevention and management of disputes.

On that note, we are obviously paying close attention to the situation in Scarborough Shoal in the South China Sea. The U.S. position is clear and consistent: we call for restraint and for diplomatic resolution; we oppose provocation; we oppose coercion; and we oppose the use of force. We do not take sides when it comes to competing territorial claims, but we do want this dispute resolved peacefully and in a manner consistent with international law.

We have made our views known and very clear to our close treaty ally, the Philippines, and we have made those views clear to China and to other countries in the region. As a Pacific power, the United States has a national interest in freedom of navigation, in unimpeded economic development and commerce, and in a respect for the rule of law. Our alliances, our partnerships, and our enduring presence in this region all serve to support these important goals.

For those who are concerned about the ability of the United States to maintain a strong presence in the Asia-Pacific region in light of the fiscal pressures we face, let me be very clear. The Department of Defense has a

five-year budget plan and a detailed blueprint for implementing this strategy I just outlined for realizing our long-term goals in this region, and for still meeting our fiscal responsibilities.

The final principle -- shared principle that we all have is force projection. This budget is the first in what will be a sustained series of investments and strategic decisions to strengthen our military capabilities in the Asia-Pacific region. I would encourage you to look at the increasing technological capabilities of our forces as much as their numbers in judging the full measure of our security presence and our security commitment.

For example, over the next five years we will retire older Navy ships, but we will replace them with more than 40 far more capable and technologically advanced ships. Over the next few years we will increase the number and the size of our exercises in the Pacific. We will also increase and more widely distribute our port visits, including in the important Indian Ocean region. And by 2020 the Navy will reposture its forces from today's roughly 50/50 percent split between the Pacific and the Atlantic to about a 60/40 split between those oceans. That will include six aircraft carriers in this region, a majority of our cruisers, destroyers, Littoral Combat Ships, and submarines.

Our forward-deployed forces are the core of our commitment to this region and we will, as I said, sharpen the technological edge of our forces. These forces are also backed up by our ability to rapidly project military power if needed to meet our security commitments. Therefore, we are investing specifically in those kinds of capabilities -- such as an advanced fifth-generation fighter, an enhanced Virginia-class submarine, new electronic warfare and communications capabilities, and improved precision weapons -- that will provide our forces with freedom of maneuver in areas in which our access and freedom of action may be threatened.

We recognize the challenges of operating over the Pacific's vast distances. That is why we are investing in new aerial-refueling tankers, a new bomber, and advanced maritime patrol and anti-submarine warfare aircraft.

In concert with these investments in military capabilities, we are developing new concepts of operation which will enable us to better leverage the unique strengths of these platforms and meet the unique challenges of operating in Asia-Pacific. In January, the department published a Joint Operational Access Concept which, along with these related efforts like Air-Sea Battle, are helping the Department meet the challenges of new and disruptive technologies and weapons that could deny our forces access to key sea routes and key lines of communication.

It will take years for these concepts and many of the investments that I just detailed, but we are making those investments in order that they be fully realized. Make no mistake -- in a steady, deliberate, and sustainable way the United States military is rebalancing and bringing an enhanced capability development to this vital region.

His replacement, Secretary Chuck Hagel, gave a speech at the May 31, 2013 Shangri-La Forum that provided additional data on US policy towards the Asia-Pacific region:⁵⁹⁸

... [T]he world is undergoing a time of historic transformation, and Asia is at the epicenter of that change. The 21st century will be defined by the rise of new powers; the rapid spread of information, goods, and technologies; innovation and economic integration; new security coalitions that take on shared challenges; issues of trade, energy and the environment; and greater opportunities for people of all nations to have a voice in shaping their future.

With this incredible promise come complications and challenges. In Asia, we see a range of persistent and emerging threats, including:

- North Korea's nuclear weapons and missile programs, and its continued provocations;
- Ongoing land and maritime disputes and conflicts over natural resources;
- The continued threat of natural disaster, the curse of poverty and the threat of pandemic disease;
- Environmental degradation;

- Illicit trafficking in people, weapons, drugs, and other dangerous materials – including the proliferation of weapons of mass destruction;
- And the growing threat of disruptive activities in space and cyberspace.

These are the challenges of the 21st century. This morning I want to describe, from my perspective as the Secretary of Defense of the United States, what we can do together to meet these critical challenges. In particular, America and other nations of the Asia-Pacific must continue to strengthen existing alliances, forge new partnerships, and build coalitions based on common interests to ensure this region's future is peaceful and prosperous.

1. U.S. Investments in Asia-Pacific

In support of this goal, America is implementing a rebalance – which is primarily a diplomatic, economic and cultural strategy. President Obama is increasing funding for diplomacy and development in Asia, including a seven percent increase in foreign assistance in the Asia-Pacific region. The United States is providing new resources for regional efforts such as the Lower Mekong Initiative, which helps improve water management, disaster resilience, and public health. We have built strong momentum toward implementing a next-generation trade and investment agreement through the Trans-Pacific Partnership negotiations. We are fostering regional trade and investment through our work in APEC and our support to ASEAN.

The Department of Defense plays an important role in securing the President's vision of rebalance. Our approach was outlined in the President's 2012 Defense Strategic Guidance, which is still guiding the U.S. military as we reorient its capabilities and capacities to better prepare for future global security challenges.

As we carry out this strategy, it is true that the Department of Defense will have fewer resources than in the recent past. It would be unwise and short-sighted to conclude, however, that our commitment to the rebalance cannot be sustained – particularly given the truth that even under the most extreme budget scenarios, the United States military will continue to represent nearly 40 percent of global defense expenditures. Like the employment of all resources, it is always a matter of the wise, judicious and strategic use of those resources that matters the most and has the most lasting impact.

The fact of the matter is that new fiscal realities present an opportunity to conduct a thorough and much-needed review to ensure we are matching resources to the most important priorities. With that goal in mind, I recently directed a Department-wide Strategic Choices and Management Review. Although the review's outcome is not final, the direction I provided was to follow the President's defense strategic guidance, to focus new energy and thinking on addressing long-standing challenges, and to make our defense enterprise one that better reflects 21st century security realities – including the rise of Asia.

For the region, this means I can assure you that coming out of this review, the United States will continue to implement the rebalance and prioritize our posture, activities and investments in Asia-Pacific. We are already taking many tangible actions in support of that commitment.

For example, the United States is adding to the capacity of our ground forces in the Pacific after Iraq and as we draw down from Afghanistan. The 1st and 3rd Marine Expeditionary Force and the Army's 25th Infantry Division are all returning to their home stations in the Pacific theater. The United States Army is also designating 1st Corps as "regionally aligned" to the Asia-Pacific region.

In addition to our decision to forward base 60 percent of our naval assets in the Pacific by 2020, the U.S. Air Force has allocated 60 percent of its overseas-based forces to the Asia-Pacific – including tactical aircraft and bomber forces from the continental United States. The Air Force is focusing a similar percentage of its space and cyber capabilities on the region. These assets enable us to capitalize on the Air Force's inherent speed, range, and flexibility.

The United States military is not only shifting more of its assets to the Pacific – we are using these assets in new ways to enhance our posture and partnerships. For example, we are pushing forward with plans for innovative rotational deployments in the region. Last year, we noted at this forum that the U.S. Navy had committed to rotating up to four Littoral Combat Ships through Singapore. In recent weeks, the first of those ships, the USS Freedom, arrived to begin a busy schedule of regional maritime engagements. I look forward to visiting the ship tomorrow. Meanwhile, the second company-sized rotation of U.S. Marines recently

arrived in Darwin to deepen cooperation with our treaty ally Australia and other regional partners. Eventually, 2,500 U.S. Marines will be deployed to Australia each year.

America's enduring commitment to peace and security in the Asia-Pacific region depends on sustaining the ability to deter aggression and operate effectively across all domains, including air, sea, land, space, and cyberspace.

Our five year budget plan submitted to Congress this year put a premium on rapidly deployable, self-sustaining forces – such as submarines, long-range bombers, and carrier strike groups – that can project power over great distance and carry out a variety of missions. In the future, this region will see more of these capabilities as we prioritize deployments of our most advanced platforms to the Pacific, including the F-22 Raptor and F-35 Joint Strike Fighter deployments to Japan, and a fourth Virginia-class fast attack submarine forward deployed to Guam.

Even further over the horizon, we are investing in promising technologies and capabilities that will enhance our decisive military edge well into the future. For example, last month, for the first time ever, the U.S. Navy successfully launched an experimental remotely piloted aircraft from an aircraft carrier, ushering in a new era in naval aviation.

Having achieved a series of technological breakthroughs in directed energy, next year for the first time the U.S. Navy will deploy a solid-state laser aboard a ship, the USS Ponce. This capability provides an affordable answer to the costly problem of defending against asymmetric threats like missiles, swarming small boats, and remotely piloted aircraft.

Combined with new concepts, doctrine, and plans that integrate these new technologies and other game changing capabilities, we will ensure freedom of action throughout the region well into the future.

Our investments in Asia are not just about cutting-edge technology and platforms, they are also about cultivating deeper ties between our people and building a network of professional military personnel and security experts across the region.

We have prioritized investments in people, including:

- Expanding the size and scope of our exercises in PACOM, allocating over \$100 million in funding for joint exercises in the PACOM region;
- Setting aside new funding for defense education that will allow us to significantly increase the number of students who can attend the Asia-Pacific Center for Security Studies in Hawaii.
- These investments in people, technology, and capabilities are critical to our strategy and to the region's peace and security. Even more important, however, is America's continued investment in our alliances and partnerships, and the region's security architecture.

2. U.S. Bilateral Relationships

Relationships, trust, and confidence are what matter most in the region. America's partners must have confidence in their bilateral ties and alliances with us and our commitments to them and the region, including our treaty alliances. These remain essential to our long-term vision of regional peace and stability.

That is why we have initiated processes with each of our treaty allies to define a new, forward-looking agenda based on enhancing security for our allies and partners, increasing the ability of militaries to work together seamlessly, and building their capacity to contribute to the region's security:

With Japan, we have agreed to review the Defense Guidelines that underpin our Alliance cooperation, and are making substantial progress in realigning our force posture and enhancing Alliance missile defense capabilities;

With the Republic of Korea, we are working to implement the Strategic Alliance 2015 and discussing a shared vision for a more globally-oriented Alliance out to 2030;

With Australia, we are expanding cooperation related to cyber security and space situational awareness. The U.S. and Australian Navies recently reached an agreement to deploy an Australian warship in a U.S. carrier

strike group in the Western Pacific, giving our naval forces new practical experience operating together cooperatively and seamlessly;

With the Philippines we are discussing an increased rotational presence of U.S. forces and helping the Philippine armed forces to modernize and build greater maritime capacity; and

With Thailand, six months ago we announced our Joint Vision Statement, the first such bilateral document in over 50 years.

Our Allies are also working more closely together. In this vein we are encouraged by growing trilateral security cooperation between the U.S., Japan, and the Republic of Korea, as well as the U.S., Japan, and Australia. The United States is also looking at trilateral training opportunities such as jungle training between the U.S. and Thailand that could expand to incorporate the Republic of Korea. Similarly, the United States is working to build trilateral cooperation with Japan and India.

Complex security threats facing the United States and our allies – which go beyond traditional domains and borders – demand these new approaches to Alliance cooperation, and they also demand new and enhanced partnerships as well.

Here in Singapore I look forward to building on our practical collaboration under the U.S.-Singapore Strategic Framework Agreement, which has guided security cooperation not only in this region, but in the Gulf of Aden and Afghanistan as well.

With New Zealand, the signing of the Washington Declaration and associated policy changes have opened up new avenues for defense cooperation in areas such as maritime security cooperation, humanitarian assistance and disaster relief, and peacekeeping support. This week, in Guam, a New Zealand Navy ship is visiting a U.S. Naval facility – the first such visit in nearly 30 years.

With the Vietnamese, we are expanding our cooperation – as set forth in a new memorandum of understanding – in maritime security, training opportunities, search-and-rescue, peacekeeping, military medical exchanges, and humanitarian assistance and disaster relief.

In Malaysia, we are expanding maritime cooperation, including the first-ever visit of a U.S. aircraft carrier to Sabah.

In Burma, we are beginning targeted, carefully calibrated military-to-military engagement aimed at ensuring the military supports ongoing reforms, respects human rights, and a professional force accountable to the country's leadership.

The United States is also working to enhance our partners' capacity to provide for their own security and the security of the region. Ultimately, the United States' goal in the region is to encourage allies to work together to design the next generation of platforms. With our closest and most capable allies and partners, we are already working to jointly develop and deploy cutting-edge technologies to tackle emerging security challenges.

An important example of this cooperation is with India, one of the leaders in this broader Asia region, where we are moving beyond purely defense trade towards technology sharing and co-production.

The world's largest democracy, India's role as a stabilizing power is of growing importance with the increase of trade and transit between the Indian and Pacific Oceans. The United States considers India's efforts to enhance its military capabilities as a welcome contribution to security in the region.

Our vision for the Asia-Pacific region is an open and inclusive one. Along with India, other rising powers also have a special role to play in a future security order as they assume the responsibilities that come with their growing stake in regional stability. To that end, a critical element of our long-term strategy in Asia is to seek to build strong relationships with rising powers – including India, Indonesia and China.

The United States and Indonesia – the world's largest Muslim-majority nation – are building new habits of cooperation that reflect a shared vision for a peaceful and prosperous region. As a large, diverse, and democratic country, Indonesia has a key role in helping lead this region. The United States and Indonesia are working together on humanitarian assistance and disaster response preparedness, maritime security, international peacekeeping, and combating transnational threats.

Building a positive and constructive relationship with China is also an essential part of America's rebalance to Asia. The United States welcomes and supports a prosperous and successful China that contributes to regional and global problem solving. To this end, the United States has consistently supported a role for China in regional and global economic and security institutions, such as the G20. We encourage our allies and partners to do the same.

The United States strongly supports the efforts made by the PRC and Taiwan in recent years to improve cross-Strait relations. We have an enduring interest in peace and stability in the Taiwan Strait. The United States remains firm in its adherence to a one-China policy based on the three joint U.S.-China communiques and the Taiwan Relations Act.

While the U.S. and China will have our differences – on human rights, Syria, and regional security issues in Asia – the key is for these differences to be addressed on the basis of a continuous and respectful dialogue. It also requires building trust and reducing the risk of miscalculation, particularly between our militaries.

President Obama and President Xi, who will soon meet for a summit in California, have both been clear that they seek a stronger military-to-military relationship. I am pleased that the dialogue between our armed forces is steadily improving. Over the course of the past year, positive developments include:

- We hosted then-Vice President Xi Jinping at the Pentagon, and later hosted China's Minister of Defense;
- Secretary Panetta, General Dempsey and Admiral Locklear led delegations to China;
- The first ever Chinese observation of the US-Philippine Balikatan exercise;
- The first-ever joint counter-piracy exercise in the Gulf of Aden;
- The U.S. invitation for China to participate in RIMPAC, the Pacific's largest multilateral Naval exercise;
- An agreement to co-host a Pacific Army Chiefs Conference with China for the first time;
- Later this year, I look forward to welcoming the Minister of Defense to the Pentagon.

While we are pleased to see this progress, it is important for both the United States and China to provide clarity and predictability about each other's current and future strategic intentions.

Accordingly, China, the United States and all nations of the region have a responsibility to work together to ensure a vibrant regional security architecture that solves problems. America's bilateral relationships and Alliances will continue to underpin the region's security and prosperity, but multilateral institutions provide critical platforms and opportunities for countries to work together.

3. Toward a Regional Security Architecture

The United States strongly supports a future security order where regional institutions move beyond aspiration to achieving real results, and evolve from talking about cooperation to achieving real, tangible solutions to shared problems, and a common framework for resolving differences. We are working toward a future where militaries can respond together rapidly and seamlessly to a range of contingencies, such as providing immediate humanitarian assistance and disaster relief.

ASEAN has set the stage for regional cooperation by developing a network of viable institutions. ASEAN nations play a critical role in this region's security architecture, and will continue to do so. In addition to the East Asian Summit and the ASEAN Regional Forum, the relatively new ASEAN Defense Ministers Meeting Plus (ADMM+) provides an important framework for nations in the region to pursue common security objectives.

.... The United States supports Asian nations taking the lead in pushing their region towards greater cooperation... [o]ur relationships with ASEAN nations are critical, and ASEAN leaders extend great hospitality to members of my government every year.... I believe this first-ever U.S.-hosted meeting of ASEAN Defense Ministers will provide another opportunity for us to discuss a shared vision for a dynamic, peaceful, and secure future for the region.

This future can only be realized if we work together to create an environment where all can prosper and succeed, and where coercion and conflict are put aside in favor of open dialogue. This requires a continued commitment to certain foundational principles that have enabled this region's success for generations. These include free and open commerce; a just international order that emphasizes rights and responsibilities of nations and fidelity to the rule of law; open access, by all, to the domains of sea, air, space, and now, cyberspace; and the principle of resolving conflict without the use of force.

Threats to these principles are threats to peace and security in the 21st century. Unfortunately, some nations continue to dismiss these values and pursue a disruptive path – most notably, North Korea.

The United States has been committed to ensuring peace and stability on the Korean Peninsula for sixty years. That means deterring North Korean aggression and protecting our allies, and achieving the complete denuclearization of the Korean Peninsula. The United States will not stand by while North Korea seeks to develop a nuclear-armed missile that can target the United States.

The United States has been clear that we will take all necessary steps to protect our homeland and our allies from dangerous provocations, including significantly bolstering our missile defense throughout the Pacific. No country should conduct “business as usual” with a North Korea that threatens its neighbors. We are working closely with our ROK and Japanese allies to strengthen our posture and ability to respond to threats from North Korea. The prospects for a peaceful resolution also will require close U.S. coordination with China.

Beyond the peninsula, the United States also remains concerned over the potential for dangerous miscalculations or crises posed by numerous competing territorial claims in the region.

The United States has been clear that we do not take a position on the question of sovereignty in these cases. That does not mean, however, that we do not have an interest in how these disputes are addressed and settled. The United States stands firmly against any coercive attempts to alter the status quo. We strongly believe that incidents and disputes should be settled in a manner that maintains peace and security, adheres to international law, and protects unimpeded lawful commerce, as well as freedom of navigation and overflight.

In the South China Sea, the United States continues to call on all claimants to exercise restraint as they publicly pledged in 2002, and to seek peaceful means to resolve these incidents. In that regard, we support the recent agreement between China and ASEAN to establish crisis hotlines to help manage maritime incidents. The U.S. also welcomes efforts to start talks on a Code of Conduct for the South China Sea. We encourage claimants to explore all peaceful means of settling their territorial disputes and the use of the dispute adjudication resolution mechanisms provided by the Law of the Sea Convention. Such efforts should not hinder progress towards developing a binding Code of Conduct.

Even as we seek to uphold principles in well-established areas, we must also recognize the need for common rules of the road in new domains.

The U.S. and all nations in the region have many areas of common interest and concern in cyberspace, where the threats to our economic security, businesses and industrial base are increasing. In response, the United States is increasing investment in cyber security and we are deepening cyber cooperation with Allies in the region and across the globe. Next week I will attend a meeting of NATO Defense Ministers devoted to cyber issues.

We are also clear-eyed about the challenges in cyber. The United States has expressed our concerns about the growing threat of cyber intrusions, some of which appear to be tied to the Chinese government and military. As the world's two largest economies, the U.S. and China have many areas of common interest and concern, and the establishment of a cyber working group is a positive step in fostering U.S.-China dialogue on cyber. We are determined to work more vigorously with China and other partners to establish international norms of responsible behavior in cyberspace.

The United States and its Asian-Pacific allies and partners are far more likely to be able to live peacefully and prosperously in a world where we are bound together by strong economic ties, mutual security interests and respect for rules, norms, and the institutions that underpin them.

As the following section shows, the US has significant military capabilities and strategic partnerships in the region and important that currently give it the military tools to implement this mix of strategies. What it does not have are credible force plans, country-specific partnership plans, and tactical concepts. This is partly the result of half a decade of turbulence from a combination of budget crisis and the phase down of two wars, and a reliance on concepts rather than credible efforts at planning, programming, and budgeting.

US Central Command

The US does not have a command dedicated to the IOR. The US instead deploys forces assigned to separate commands for the Middle East and forces for the Pacific. The US forces that defend the Gulf and cover the western IOR, focus on the entire for the Middle East and are assigned to USCENTCOM. They include the forces the US deploys in support of the Gulf states, Jordan, Egypt, and the Red Sea states.

The level of these forces varies with the level of tension or conflict in the region, and is drawn from US forces in the US, in Europe and in the Pacific. The forces actually and deployed by USCENTCOM vary according to the contingency commitments the US makes in the CENTCOM region at any give time – a region which goes far beyond the IOR and extends from Egypt to Afghanistan and Pakistan.

These contingency commitments have changed steadily over the last decade and US forces are now phasing out of active combat. The size of troop deployments, for example, has been steadily cut since the last US combat troops left Iraq at the end of 2011, and is dropping further as the US transitions combat forces out of Afghanistan – with all to be removed by the end of 2014.

The US does, however, still maintain a major air-sea force as part of its 5th Fleet, which is headquartered in Bahrain. The US Navy has maintained a presence in the Gulf since 1949, has had facilities in Bahrain since 1971, and created the 5th Fleet in in 1995. In January 2014, the 5th Fleet had the following task forces:⁵⁹⁹

- CTF-50 Strike Forces: 1 carrier, 1 cruiser, 1 Arleigh Burke-class destroyer, 1 frigate, 1 replenishment ship.
- CTF-51 Contingency Response: 1 LHD, 1 LHA, 2 LSDs, 1 AV-8B squadron, 2 helicopter units, one AH-1W attack helicopter unit.
- CTF-52 Mine Warfare: 1 MCM, 1 MH-53 helicopter unit.
- CTF-53 Logistics: 1 ammo ship, 1 logistic stores ship, 1 fast combat support ship, 1 dry cargo/ammo ship, 1 fleet replenishment oiler.
- CTF-54: 1 Ohio-class guided missile submarine, 1 Los Angeles-class submarine,
- CTF-55 Surface forces: US Navy and US Coast Guard patrol ships.
- CTF-56 Expeditionary Forces: support for rapid power projection. EOD, marine mammals, inshore boats, riverine warfare,
- CTF-57 Maritime Patrol Aircraft: P-3C Orion and ASW aircraft.

The overall US Army and US Air Force presence in the Gulf/Western IOR region is harder to quantify. The US had approximately 25,000 personnel in the area for all services in 2013, and major air facilities in Kuwait, Bahrain, Qatar, and the UAE. It also has a major air base and command facility at Al Udeid Air Force Base in Qatar called the Combined Air and Space Operations Center (COAC), and prepositioning and contingency facilities in Oman.⁶⁰⁰ The USAF had six air wings deployed in or near the IOR and two groups:⁶⁰¹

- 376th Air Expeditionary Wing Transit Center at Manas, Kyrgyzstan
- 379th Air Expeditionary Wing, Al Udeid Air Base, Qatar
- 380th Air Expeditionary Wing, Undisclosed Location, Southwest Asia
- 386th Air Expeditionary Wing, Undisclosed Location, Southwest Asia
- 438th Air Expeditionary Wing, Kabul International Airport, Afghanistan.
- 455th Air Expeditionary Wing, Bagram Airfield, Afghanistan
- 609th Air and Space Operations Center, Undisclosed Location, Southwest Asia
- 1st Expeditionary Civil Engineer Group, Undisclosed Location, Southwest Asia

It is not possible to separate out aircraft numbers or activity levels for the Gulf from the entire range of USAF air activity in the Central Region – which included Afghanistan. Total AFCENT activity in 2013 does, however, provide a rough indication of US power projection and surge capabilities.

The US flew over 21,000 close air support sorties, 31,000 IS&R sorties, 32,000 airlift sorties, and 12,000 tanker sorties – levels far lower than in the peak of the Iraq and Afghan Wars. These numbers illustrate the fact that airpower in the Gulf area at any given time is not a measure of US capability for a rapid deployment force.⁶⁰²

US Pacific Command (PACOM)

The US permanently deploys major forces in the Pacific region that can be used in the IOR and make it the dominant air-sea power in the region. US Pacific Command (PACOM) forces included four component commands: US Pacific Fleet, US Pacific Air Forces, US Army Pacific, and US Marine Forces Pacific. These commands are headquartered in Hawai'i and have forces stationed and deployed throughout the region.⁶⁰³

PACOM's strategy does not refer specifically to the IOR, but covers India and all states and waters to the east of India. PACOM's unclassified strategy documents stress both partnership with IOR powers and the importance of China:⁶⁰⁴

The 36 nations that comprise the Asia-Pacific include: two of the three largest economies and nine of the ten smallest; the most populous nation; the largest democracy; the largest Muslim-majority nation; and the smallest republic in the world. The region is a vital driver of the global economy and includes the world's busiest international sea-lanes and nine of the ten largest ports. By any meaningful measure, the Asia-Pacific is also the most militarized region in the world, with seven of the world's ten largest standing militaries and five of the world's declared nuclear nations. Under these circumstances, the strategic complexity facing the region is unique.

...This homeland area, coupled with our treaty alliances with Australia, Japan, Republic of Korea, Philippines, and Thailand are the cornerstone of U.S. engagement in the region. We will modernize and strengthen these alliances by enhancing our ability to train and operate together, jointly developing high-tech capabilities, expanding information sharing, and exploring new areas of cooperation.

... In addition to our treaty alliances, we will continue to strengthen existing partnerships and build new relationships, particularly with multilateral constructs such as the Association of Southeast Asian Nations (ASEAN). India is a particularly important partner in shaping the security environment, and we will continue to deepen our cooperation to address challenges in the Asia-Pacific. We will also work to enhance our partnerships with Indonesia, India, Singapore, Vietnam, Malaysia and others to advance common interests and address shared threats.

... The United States believes that a strong U.S.-China partnership is essential for peace, prosperity, and both regional and global security. The U.S. continues to welcome a prosperous and successful China that plays a greater role in global affairs, but China's growing military capabilities coupled with its lack of transparency is concerning. Therefore, the United States and China must continue to pursue a more transparent, enduring, stable, and reliable military-to-military relationship by maintaining a consistent and meaningful dialogue to prevent miscommunication or miscalculation. We see opportunities for cooperation in areas such as humanitarian relief and disaster response, counter-piracy efforts, non-proliferation, counter-terrorism, noncombatant evacuation operations (NEOs), military medicine, and maritime safety. Such opportunities will enhance our bilateral relationship with China as we work toward common goals, candidly address our differences, and demonstrate mutual commitment to the security and stability of the Asia-Pacific region.

In January 2014, PACOM reported that it had some 330,000 personnel, or about one-fifth of total U.S. military strength.⁶⁰⁵

- U.S. Pacific Fleet consisted of approximately 180 ships (to include five aircraft carrier strike groups), nearly 2,000 aircraft, and 140,000 Sailors and civilians.
- Marine Corps Forces, Pacific possessed about two-thirds of U.S. Marine Corps combat strength, including two Marine Expeditionary Forces and about 85,000 personnel assigned.
- U.S. Pacific Air Forces were comprised of approximately 43,000 airmen and more than 435 aircraft.
- U.S. Army Pacific had more than 60,000 personnel assigned, including five Stryker brigades.
- Component command personnel numbers included more than 1,200 Special Operations personnel. Department of Defense Civilians employees in the Pacific Command AOR numbered about 38,000.
- Additionally, the U.S. Coast Guard, which frequently supports U.S. military forces in the region, had approximately 27,000 personnel in its Pacific Area.

These forces conducted frequent exercises with allied and friendly navies. PACOM reported that USPACOM participated in many exercises and other engagement activities with foreign military forces. Major exercises included:⁶⁰⁶

- *Talisman Saber*: A biennial Australia/United bilateral exercise merging Exercises TANDEM THRUST, KINGFISHER and CROCODILE. TALISMAN SABER is the primary training venue for Commander Seventh Fleet as a Combined Task Force (CTF) in a short warning, power projection, forcible entry scenario. The exercise is a key opportunity to train Australian and US combined forces in mid to high-intensity combat operations using training areas in Australia
- *Cobra Gold*: A joint/combined exercise with Thailand designed to improve U.S./Thai combat readiness and joint/combined interoperability.
- *Balikatan*: A joint exercise with the Republic of the Philippines and the U.S. to improve combat readiness and interoperability.
- *Keen Sword/Keen Edge* Joint/bilateral training exercises (field training/simulation, respectively) to increase combat readiness and joint/bilateral interoperability of U.S. Forces and Japan Self-Defense Forces for the defense of Japan.
- *Rim of the Pacific*: A biennial large-scale multinational power projection/sea control exercise. In 2000, participants included the U.S., Canada, Australia, Japan, South Korea, Chile and the United Kingdom.

In addition, USPACOM had participated in more than 20 disaster relief operations in 12 countries and one U.S. territory (Japan, South Korea, the Philippines, Palau, Indonesia, Thailand, Vietnam, Laos, Burma, India, Madagascar, Sri Lanka and Guam) since 1996.

Changes in US Strategy and Rebalancing to Asia

It is still far from clear what the future US posture in the Gulf, IOR, and other parts of the Asia-Pacific will actually be. The US initially announced that it would shift its naval presence from 50% to 60% of its total fleet by 2020, but later talked about shifting 5% of its fleet and air forces. Since that time, the US has made major further cuts in planned defense spending, made serious cuts in its military readiness and exercise activities, and come to face growing uncertainty over its future defense plans because of Sequestration and a Budget Control Act passed after it announced the changes to its strategy.

Part of the problem is that US strategy has to deal with uncertain budget cuts and issues like Sequestration which makes stable programming and budgeting difficult to impossible, and makes it hard for the Department of Defense to plan and predict how large an army, fleet, and air force it will maintain in coming years.

The US Navy does plan to keep major forces in the region, and as described earlier built up its forces in the Gulf during 2012-2013. However, the US has long fallen short of its ship-building goals and has had to cut the size and readiness of combat aircraft. The US may well have to cut back by a carrier task force equivalent and slow its plans to modernize its submarines and equip them with more conventional long-range missiles.

The US Air Force currently plans to allocate 60% of its overseas-based forces to the region. While the US talks about focusing on the air-sea battle, it faces similar challenges in modernizing and maintaining its combat air fleet, in procuring the planned number of F-35 fighters, in actually funding and deploying a new bomber, and in modernizing key “enablers” such as its refueling tankers.

The US faces major challenges in adapting its land forces to its new strategy. A 2012 analysis by the Congressional Research Service notes that similar uncertainties exist in the future posture of the US Army:⁶⁰⁷

General Odierno reportedly envisions the Army playing an important role in the Asia-Pacific region. Noting that the Asia-Pacific region is home to 7 of the 10 largest armies in the world, General Odierno reportedly stated that the Army would “actively seek new opportunities for expanding current international training opportunities.” General Odierno also emphasized how the presence of the U.S. Army in the region—about 25,800 soldiers in South Korea; 23,000 in Hawaii; 2,700 in Japan; and 13,000 in Alaska—serves as a deterrent to potential aggressors and also provides forces that can be deployed elsewhere within the region. In terms of force structure, as previously noted, the Army does not foresee any cuts to Army units in Hawaii, Japan, or South Korea. In addition, three Stryker BCTs are stationed at Joint Base Lewis-McChord in Washington that are assigned to U.S. Pacific Command and under the operational control of U.S. Army Pacific, but it is not known if these units will be reassigned to different missions.

Deterrence and response aside, the Army reportedly plans to step up training exercises in the region in an effort to strengthen its presence and influence. In addition to Pacific-based units, the Army reportedly is considering including the XVIII Airborne Corps at Ft. Bragg, NC; the I Corps at Joint Base Lewis-McChord, WA; and the 101st Airborne Division at Ft. Campbell, KY, in upcoming exercises. The U.S. Army Pacific is reportedly working with the 101st Airborne Division on the possibility of participating in Yudh Abhyas, a bilateral exercise with India. The United States and India would take turns hosting the exercise, with the United States hosting the exercise in 2013. The U.S. Army Pacific is also reportedly working with Australia and New Zealand, perhaps to conduct a battalion-sized event with the New Zealand Army and a brigade-sized exercise with the Australian Army. In addition to working with these armies, the United States also hopes to leverage its relationships with Indonesia, Malaysia, and Thailand in order to increase partnership opportunities with the three nations.

It will probably take several more years to determine what path the US will really pursue in Asia, what its future military spending will be, and what levels of force it will deploy over time. The key point from the perspective of US and Chinese military dialogue is that even if all current plans are implemented, the US would not carry out a major military build-up in Asia, and – as the following analysis of Chinese forces shows – would not posture its forces for a confrontation with China. This highlights the fact – as does the analysis of Chinese forces – that a military dialogue must be founded on hard, detailed analysis of the actual force trends on both sides, not on a worst-case analysis of military rhetoric.

This is the official position of the US, as the May 2013 edition of the DoD *Military and Security Developments Involving the People's Republic of China* report points out:⁶⁰⁸

During their January 2011 summit, U.S. President Barack Obama and then-PRC President Hu Jintao jointly affirmed that a “healthy, stable, and reliable military-to-military relationship is an essential part of [their] shared vision for a positive, cooperative, and comprehensive U.S.-China relationship.” Within that framework, the U.S. Department of Defense seeks to build a military-to-military relationship with China that is sustained and substantive, while encouraging China to cooperate with the United States, our allies and partners, and the greater international community in the delivery of public goods. As the United States builds a stronger foundation for a military-to-military relationship with China, it also will continue to monitor China’s evolving military strategy, doctrine, and force development and encourage China to be more transparent about its military modernization program. In concert with its allies and partners, the United States will continue adapting its forces, posture, and operational concepts to maintain a stable and secure Asia-Pacific security environment.

Chinese Strategy and Forces Affecting the IOR

China is an emerging power that is fundamentally changing the balance in the Pacific and IOR. This makes it a key focus for both US strategic planning and that of the IOR states, particularly India and the nations in East Asia and Oceania. At the same time, China’s future strategic goals, force plans, and posture in the IOR are hard to predict, China does not publically declare its force modernization and deployment plans in any detail.

China declares its strategic goals in terms of fundamental principles and policies:⁶⁰⁹

- Safeguarding national sovereignty, security and territorial integrity, and supporting the country's peaceful development.
- Aiming to win local wars under the conditions of informationization and expanding and intensifying military preparedness.
- Formulating the concept of comprehensive security and effectively conducting military operations other than war (MOOTW).
- Deepening security cooperation and fulfilling international obligations.
- Acting in accordance with laws, policies and disciplines.

The 2013 Chinese defense white paper did, however, implicitly criticize the US’s increasing presence in the Asia-Pacific and highlight what it saw as an aggressive shift in the US strategy force posture:⁶¹⁰

- There are signs of increasing hegemonism, power politics and neo-interventionism. Local turmoils occur frequently. Hot-spot issues keep cropping up. Traditional and non-traditional security challenges interweave and interact. Competition is intensifying in the international military field. International security issues are growing noticeably more abrupt, interrelated and comprehensive. The Asia-Pacific region has become an increasingly significant stage for world economic development and strategic

interaction between major powers. The US is adjusting its Asia-Pacific security strategy, and the regional landscape is undergoing profound changes.

- Some country has strengthened its Asia-Pacific military alliances, expanded its military presence in the region, and frequently makes the situation there tenser. On the issues concerning China's territorial sovereignty and maritime rights and interests, some neighboring countries are taking actions that complicate or exacerbate the situation.... Major powers are vigorously developing new and more sophisticated military technologies so as to ensure that they can maintain strategic superiorities in international competition in such areas as outer space and cyber space.

As has been discussed earlier, China is steadily more dependent on the security of the stable flow of petroleum from the Gulf to China. The Energy Information Agency EIA of the US Department of Energy summarized these trends as follows in February 2013,⁶¹¹

China consumed an estimated 10.7 million bbl/d of oil in 2013, up 380 thousand bbl/d, or almost 4%, from 2012. In 2009, China became the second-largest net oil importer in the world behind the United States, and average net total oil imports reached 6.2 million bbl/d in 2013. Notably, for the fourth quarter of 2013, China actually became the largest global net importer of oil. EIA projects that China is likely to surpass the United States in net oil imports on an annual basis by 2014 as U.S. oil production and Chinese oil demand increase simultaneously.

China's oil demand growth hinges on several factors, such as domestic economic growth and trade, power generation, transportation sector shifts, and refining capabilities. EIA forecasts that China's oil consumption will continue growing through 2014 at a moderate pace to approximately 11.1 million bbl/d, and its net oil imports will reach 6.6 million bbl/d compared to 5.5 million bbl/d for the United States.

... As China's oil demand continues to outstrip production at home, oil imports have increased dramatically over the past decade, reaching record highs in 2013. To ensure adequate oil supply and mitigate geopolitical uncertainties, China has diversified its sources of crude oil imports in recent years. China imported 5.4 million bbl/d of crude oil on average in 2012, rising 7% from 5.1 million bbl/d in 2011, according to China's customs data and FGE. In 2013, import growth slowed to about 4.4% from 2012 levels, and crude oil imports averaged 5.6 million bbl/d. Crude imports now outweigh domestic supply, and they made up over half of total oil consumption in 2013. The government's current Five-Year plan targets oil imports reaching no more than 61% of its demand by the end of 2015. EIA expects China to import over 66% of its total oil by 2020 and 72% by 2040 as demand is expected to grow faster than domestic crude supply.

The Middle East remains the largest source of China's crude oil imports, although African countries, particularly Angola, began contributing more to China's imports in recent years. As part of China's energy supply security policy, the country's NOCs are attempting to diversify supply sources in various regions through overseas investments and long-term contracts. In 2013, the Middle East supplied 2.9 million bbl/d (52%). Other regions that export to China include Africa with 1.3 million bbl/d (23%), the Americas with 562,000 bbl/d (10%), the Asia-Pacific region with 129,000 bbl/d (2%), and 736,000 bbl/d (13%) from other countries. [Saudi Arabia](#) and Angola are China's two largest sources of oil imports, together accounting for 33% of China's total crude oil imports.

[Sudan and South Sudan](#) became significant oil exporters to China until production was shut in at the beginning of 2012, following political conflicts between the two African nations over their oil resources. Exports from Sudan and South Sudan to China dropped from 260,000 bbl/d in 2011 to zero by April 2012. As production in the two African countries returned, China resumed a reduced level of imports. The ensuing shut-in of some of [Libya's](#) oil production during the latter half of 2013 from political uprisings has also affected oil exports to China.

China reduced imports from [Iran](#), historically the third largest exporter to China, by 20% in 2012 to 439,000 bbl/d from a high of 555,000 bbl/d in 2011, as a result of a contract dispute between Sinopec, China's key oil importer, and Iran's state oil company. Iran fell to the sixth largest crude oil exporter to China behind Saudi Arabia, Angola, [Oman](#), Russia, and [Iraq](#), and constituted 8% of China's crude oil imports in 2012 and 2013 compared to 11% in 2011. The contract dispute with Iran was settled by mid-2012, but China reduced its average oil import levels from Iran to maintain diplomatic ties with the United States and Europe as a

result of global sanctions imposed regarding Iranian crude oil sales over disagreements on Iran's nuclear program.

Iran shipped 429,000 bbl/d to China in 2013, according to China's customs data, or 2.3% below the 2012 level. China originally targeted a 5% annual reduction of oil intake from Iran in 2013, but it imported higher amounts of Iranian condensates during the second half of 2013. Negotiations between Iran and six countries, including the United States and China, at the end of 2013 allowed China and other buyers to maintain current import levels. Even if production resumes to pre-disruption levels from these countries, most analysts expect that China will continue to diversify import sources to reduce geopolitical risks and oil supply uncertainties.

China replaced the share of oil lost from Iran, Sudan and South Sudan, and Libya with imports from other Middle Eastern countries, Angola, Venezuela, and Russia. China and Russia have signed deals for Russia to send China close to 1 million bbl/d of crude oil by 2020 through various routes. China has significantly increased imports from Iraq, although future import growth is likely to be on the pace of infrastructure development and the political situation in Iraq.

Chinese Naval Forces

At present, China has limited power projection capability in the IOR. Its fleet and air force are still largely shaped around operating out of Chinese bases and in "blue water" areas in the Pacific and China is still creating the capability to project sea and air power at the distances involved in operations deep in the Indian Ocean. China also does not have an active basing structure to sustain and support power projection.

This situation is steadily changing, however, and the current balance of US and Chinese military capabilities in the IOR says little about the future and the degree to which the US and China will compete or cooperate. Experts report that both Indian and Chinese military forces are developing an extensive amount professional literature on the future China-India naval, air, and missile balance in the IOR.

The current controversies and military rivalries that affect China and the nations in the South China Sea cannot be separated from operations in the Eastern IOR. China's former leader, President Hu Jintao once referred to China's Malacca Dilemma. Its concerns over the security of petroleum exports and maritime traffic in the strait of Malacca have been a major focus of its security plans since at least the mid-2000s, and a cause of the naval build up – and submarine purchases by Singapore, Malaysia, and Indonesia.⁶¹²⁶¹³

Moreover, China has shown it can operate in a permissive environment in the IOR. It has deployed elements of its Navy as part of the anti-piracy forces patrolling off Somalia, it increases its naval presence and visits in the region, and has expressed an interest in participating in naval exercises in the Gulf. It also has sent ships in the Strait of Malacca and in naval passages near Indonesia.⁶¹⁴
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In February 2014, for example, Chinese Navy conducted exercises in the Indian Ocean in the Lombok Strait --, a narrow strip of water that runs from the Java Sea, near Indonesia, is north of Australia. Press reports indicate that China sent a three-ship flotilla of the South Sea fleet, including a large amphibious ship, the *Changbaishan* and two destroyers. They conducted some ten exercises, including anti-piracy, search and rescue, and damage control drills, over a five-day period that began on January 29th. China's official Xinhua news agency reported on January 29, 2014, that the exercises also included simulations for warfare to test the response of command systems and soldiers' "combat skills."

China's People's Liberation Army Navy (PLAN) had previously carried out some 16-21 drills in the Indian Ocean, largely in the western Indian Ocean and near the Gulf of Aden – usually focusing on anti-piracy and search and rescue exercises. The January 2014 exercises were somewhat different, however, in that they were the first exercises on such a scale in the Lombok Strait, and the first time the PLAN had exercised a new route from the South China Sea to the Indian Ocean. In earlier drills, Chinese ships had always sailed through the Strait of Malacca Straits. The exercises also marked the first deployment of the *Changbaishan*, China's largest landing ship in an exercise of this kind.

An Indian newspaper, *The Hindu*, quotes Srikanth Kondapalli, an expert on the Chinese military at Jawaharlal Nehru University, as saying that the January exercise may have been a signal from China about the dispute over the South China Sea: “The drill took place in Lombok, which is beyond the nine-dotted line. This is something new,” and the PLAN may be showing it can reach the disputed region “from behind.”⁶¹⁷

The paper also states that,⁶¹⁸

A second signal was tied to the Malacca Straits, which are a key route for China's energy imports. The dependence on the narrow strait led former leader Hu Jintao to warn of China's “Malacca dilemma,” triggering fresh initiatives by Beijing to establish alternate routes for imports, such as through ports in Myanmar and on-going projects in Bangladesh and Pakistan. “A third message,” Professor Kondapalli added, “is that they can come closer to the Andaman & Nicobar joint command through Lombok, and not just through Malacca.”

He said the drill could be seen as “a preliminary attempt” by the PLAN to see how they can fare in operations far away from China's borders in the Indian Ocean, where they lack bases for logistics and support. China has recently pushed commercial ties with several littoral states, and is also involved in port projects in a number of countries neighboring India.

US experts indicate that it is unclear from Chinese research studies and reports that China as yet has a clear strategy for the IOR, and one that will lead it to major exercise, basing, and air-sea deployments. Much will depend upon the rate and nature of the expansion of Chinese naval and air forces, and whether China can find partner nations in the IOR that will offer major basing facilities.

More broadly, however, the US sees the modernization of Chinese seapower, the expansion of Chinese naval power projection capability, and the PLAN's slow conversion into a true blue water navy with carriers and extensive missile forces, as a far more serious challenge than the modernization of Chinese ground forces. The DoD report on *Military and Security Developments Involving the People's Republic of China* for 2013 describes the current structure and trends in the PLAN as follows.⁶¹⁹

The PLA Navy has the largest force of major combatants, submarines, and amphibious warfare ships in Asia. China's naval forces include some 79 principal surface combatants, more than 55 submarines, 55 medium and large amphibious ships, and roughly 85 missile-equipped small combatants.

In the most publicized PLA Navy modernization event of 2012, after a year of extensive sea trials, China commissioned its first aircraft carrier, the *Liaoning*, in September 2012. The PLA Navy successfully conducted its first launch and recovery of the carrier-capable J-15 fighter on November 26, 2012. The *Liaoning* will continue integration testing and training with the aircraft during the next several years, but it is not expected to embark an operational air wing until 2015 or later. China also continues to pursue an indigenous aircraft carrier program (the *Liaoning* is a refurbished vessel, purchased from Ukraine in 1998), and will likely build multiple aircraft carriers over the next decade. The first Chinese-built carrier will likely be operational sometime in the second half of this decade.

The PLA Navy places a high priority on the modernization of its submarine force. China continues the production of JIN-class nuclear-powered ballistic missile submarines (SSBN). Three JIN-class SSBNs (Type 094) are currently operational, and up to five may enter service before China proceeds to its next generation SSBN (Type 096) over the next decade. The JIN-class SSBN will carry the new JL-2 submarine launched ballistic missile with an estimated range of more than 4,000 nm. The JIN-class and the JL-2 will give the PLA Navy its first credible sea-based nuclear deterrent.

China also has expanded its force of nuclear-powered attack submarines (SSN). Two SHANG-class SSNs (Type 093) are already in service, and China is building four improved variants of the SHANG-class SSN, which will replace the aging HAN-class SSNs (Type 091). In the next decade, China will likely construct the Type 095 guided-missile attack submarine (SSGN), which may enable a submarine-based land-attack capability. In addition to likely incorporating better quieting technologies, the Type 095 will fulfill traditional anti-ship roles with the incorporation of torpedoes and anti-ship cruise missiles (ASCMs).

The current mainstay of the Chinese submarine force is modern diesel powered attack submarines (SS). In addition to 12 KILO-class submarines acquired from Russia in the 1990s and 2000s (eight of which are equipped with the SS-N-27 ASCM), the PLA Navy possesses 13 SONG-class SS (Type 039) and eight YUAN-class SSP (Type 039A). The YUAN-class SSP is armed similarly to the SONG-class SS, but also includes an air-independent power system. China may plan to construct up to 20 YUAN-class SSPs.

Since 2008, the PLA Navy has embarked on a robust surface combatant construction program of various classes of ships, including guided missile destroyers (DDG) and guided missile frigates (FFG). During 2012, China continued series production of several classes, including construction of a new generation of DDG. Construction of the LUYANG II-class DDG (Type 052C) continued, with one ship entering service in 2012, and an additional three ships under various stages of construction and sea trials, bringing the total number of ships of this class to six by the end of 2013. Additionally, China launched the lead ship in a follow-on class, the LUYANG III- class DDG (Type 052D), which will likely enter service in 2014. The LUYANG III incorporates the PLA Navy's first multipurpose vertical launch system, likely capable of launching ASCM, land attack cruise missiles (LACM), surface-to-air missiles (SAM), and anti-submarine rockets. China is projected to build more than a dozen of these ships to replace its aging LUDA-class destroyers (DD). China has continued the construction of the workhorse JIANGKAI II-class FFG (Type 054A), with 12 ships currently in the fleet and six or more in various stages of construction, and yet more expected. These new DDGs and FFGs provide a significant upgrade to the PLA Navy's area air defense capability, which will be critical as it expands operations into "distant seas" beyond the range of shore-based air defense.

Augmenting the PLA Navy's littoral warfare capabilities, especially in the South China Sea and East China Sea, is a new class of small combatant. At least six of the JIANGDAO-class corvettes (FFL) (Type 056) were launched in 2012. The first of these ships entered service on February 25, 2013; China may build 20 to 30 of this class. These FFLs augment the 60 HOUBEI-class wave-piercing catamaran missile patrol boats (PTG) (Type 022), each capable of carrying eight YJ-83 ASCMs, for operations in littoral waters.

The PLA Navy also increased its amphibious force in 2012. Two YUZHAO-class amphibious transport docks (LPD) (Type 071) were accepted into service during the year bringing the total of YUZHAO LPDs to three.

.... The PLA Navy remains at the forefront of the military's efforts to extend its operational reach beyond East Asia and into what China calls the "far seas." Missions in these areas include protecting important sea lanes from terrorism, maritime piracy, and foreign interdiction; providing humanitarian assistance and disaster relief; conducting naval diplomacy and regional deterrence; and training to prevent a third party, such as the United States, from interfering with operations off China's coast in a Taiwan or South China Sea conflict. The PLA Navy's ability to perform these missions is modest but growing as it gains more experience operating in distant waters and acquires larger and more advanced platforms. The PLA Navy's goal over the coming decades is to become a stronger regional force that is able to project power across the globe for high-intensity operations over a period of several months, similar to the United Kingdom's deployment to the South Atlantic to retake the Falkland Islands in the early 1980s. However, logistics and intelligence support remain key obstacles, particularly in the Indian Ocean.

In the last several years, the PLA Navy's distant seas experience has primarily derived from its ongoing counter-piracy mission in the Gulf of Aden and long-distance task group deployments beyond the first island chain in the western Pacific. China continues to sustain a three-ship presence in the Gulf of Aden to protect

Chinese merchant shipping from maritime piracy. This operation is China's first enduring naval operation beyond the Asia region.

Additionally, the PLA Navy has begun to conduct military activities within the Exclusive Economic Zones (EEZs) of other nations, without the permission of those coastal states. Of note, the United States has observed over the past year several instances of Chinese naval activities in the EEZ around Guam and Hawaii. One of those instances was during the execution of the annual Rim of the Pacific (RIMPAC) exercise in July/August 2012. While the United States considers the PLA Navy activities in its EEZ to be lawful, the activity undercuts China's decades-old position that similar foreign military activities in China's EEZ are unlawful.

The PLA Navy has made long-distance deployments a routine part of the annual training cycle. In 2012, it deployed task groups beyond the first island chain seven times with formations as large as seven ships. These deployments are designed to complete a number of training requirements, including long-distance navigation, C2, and multi-discipline warfare in deep sea environments beyond the range of land-based air defense.

The PLA Navy's force structure continues to evolve, incorporating more platforms with the versatility for both offshore and long-distance operations. In addition to the recently-commissioned KUZNETSOV-class aircraft carrier (CV) *Liaoning*, China is engaged in series production of the LUYANG-class III DDG, the JIANGKAI-class II FFG, and the JIANGDAO-class FFL. China will also begin construction on a new Type 081-class landing helicopter assault ship within the next five years. China will probably build several aircraft carriers over the next 15 years.

Limited logistical support remains a key obstacle preventing the PLA Navy from operating more extensively beyond East Asia, particularly in the Indian Ocean. China desires to expand its access to logistics in the Indian Ocean and will likely establish several access points in this area in the next 10 years (potential sites include the Strait of Malacca, Lombok Strait, and Sunda Strait). These arrangements will likely take the form of agreements for refueling, replenishment, crew rest, and low-level maintenance. The services provided will likely fall short of U.S.-style agreements permitting the full spectrum of support from repair to re-armament.

Experts like Andrew Erikson and Gabe Collins feel the PLAN has been developing two key layers, aside from homeland defense: high-end navy and "anti-Navy" capabilities as well as low-end capabilities. While China is creating a limited out-of-area operational capability in order to protect its citizens abroad, extend political influence, and protect important vital economic interests. However, the majority of the PLAN's focus is on areas closer to China, especially the contested claims in the South China, East China, and Yellow Seas. The PRC is focusing on building a navy able to engage in a high-intensity conflict near its borders, where it has a large fleet of submarines and land-based missiles and aircraft. Conversely, there is not much evidence that China is building a blue-water capability to take on a modern navy beyond their home region. As Erikson and Collins write,⁶²⁰

The PLAN is acquiring the hardware it needs to prosecute a major regional naval showdown. Simultaneously, an increasingly-capable, but still limited number, of vessels can fight pirates, rescue Chinese citizens trapped by violence abroad, and make "show-the-flag" visits around the world. But the PLAN is not set up to confront the U.S. at sea more than 1,000 miles from China. Even if the PLAN surged production of key vessels such as replenishment ships, the resources and steps needed to build a globally-operational navy leave Beijing well over a decade away from achieving such capability in hardware terms alone. Building the more complex human software and operational experience needed to become capable of conducting large-scale, high-end out-of-area deployments could require at least another decade. Meanwhile, however, China's challenges at home and on its contested periphery remain so pressing as to preclude such focus for the foreseeable future.

The bottom line is that China's present naval shipbuilding program aims to replace aging vessels and modernize the fleet, not to scale-up a modern fleet to the size and composition necessary to support and sustain high-end blue water power projection. China is building a two-layered navy with a high-end Near Seas component and a limited, low-end capability beyond, not the monolithic force that some assume.

The 2013 Japanese white paper provided the following summary description of the PLAN:⁶²¹

The naval forces consist of three fleets—the North Sea, East Sea, and South Sea Fleets. The Chinese Navy has approximately 970 ships (including approximately 60 submarines), with a total displacement of approximately 1.47 million tons. The Navy is in charge of maritime national defense and protection of the sovereignty of territorial waters and maritime rights and interests. The Chinese Navy introduced Kilo-class submarines from Russia and is actively constructing new types of domestic submarines in order to enhance its submarine force. Additionally, the Navy is increasing surface combatant ships with improved air defense and anti-ship attack capabilities, large landing ships, and supply ships. Also, it commissioned a large hospital ship in October 2008.

...With regard to aircraft carriers, China has renovated the Varyag, an incomplete Kuznetsov-class aircraft carrier purchased from Ukraine. After 10 trial navigations during the period from August 2011 to August 2012, China named the carrier “Liaoning” and put it into commission...China seems to be continuing training of carrier-based aircraft pilots and research and development of necessary technologies including the development of a domestic carrier based fighter, J-1528. It is also pointed out that China may be constructing its first domestic aircraft carrier...

In view of these developments in the modernization of the naval forces, it is believed that China is trying to build capabilities for operations in more distant areas in addition to the near sea defense. It is necessary to continue to monitor the development of the Chinese naval forces.

China is making efforts to expand its blue water capabilities, and to project power into the IOR or at sensitive chokepoints like the Strait of Malacca in a number of areas. One is an improved submarine capability that could be an important asset in areas like the IOR. A CRS report by Ronald O’Rourke provides the following overview of Chinese submarine modernization.⁶²²

China since the mid-1990s has acquired 12 Russian-made Kilo-class non-nuclear-powered attack submarines (SSNs) and put into service at least four new classes of indigenously built submarines, including the following:

- a new nuclear-powered ballistic missile submarine (SSBN) design called the Jin class or Type 094...;
- a new nuclear-powered attack submarine (SSN) design called the Shang class or Type 093;
- a new SS design called the Yuan class or Type 039A...; and
- another (and also fairly new) SS design called the Song class or Type 039/039G.

The Kilos and the four new classes of indigenously built submarines are regarded as much more modern and capable than China’s aging older-generation submarines. At least some of the new indigenously built designs are believed to have benefitted from Russian submarine technology and design know-how.

DOD and other observers believe the Type 093 SSN design will be succeeded by a newer SSN design called the Type 095. The August 2009 ONI report includes a graph... that shows the Type 095 SSN, along with the date 2015, suggesting that ONI projects that the first Type 095 will enter service that year.

China in 2011 commissioned into a service a new type of non-nuclear-powered submarine, called the Qing class according to *Jane’s Fighting Ships 2012-2013*, that is about one-third larger than the Yuan-class design. It is not clear whether this boat is the lead ship of a new class, or a one-of-a-kind submarine built for testing purposes. *Jane’s Fighting Ships 2012-2013* refers to the boat as an auxiliary submarine (SSA).

Press reports in December 2012 and March 2013 stated that China had signed an agreement with Russia to purchase two dozen Su-35 fighters and four Amur/Lada class Russian-designed nonnuclear- powered attack submarines for China’s Navy, with two of the submarines being built in Russia and two being built in China. Russia, however, reportedly denied that such an agreement had been signed.

China’s submarines are armed with one or more of the following: ASCMs, wire-guided and wake-homing torpedoes, and mines. The final eight Kilos purchased from Russia are reportedly armed with the highly capable Russian-made SS-N-27 Sizzler ASCM. In addition to other weapons, Shang-class SSNs may carry LACMs. Although ASCMs are often highlighted as sources of concern, wake-homing torpedoes are also a concern because they can be very difficult for surface ships to counter.

Although China's aging Ming-class (Type 035) submarines are based on old technology and are much less capable than China's newer-design submarines, China may decide that these older boats have continued value as minelayers or as bait or decoy submarines that can be used to draw out enemy submarines (such as U.S. SSNs) that can then be attacked by other Chinese naval forces.

In related areas of activity, China reportedly is developing new unmanned underwater vehicles, and has modernized its substantial inventory of mines. DOD stated in 2012 that "China has developed torpedo and mine systems capable of area denial in a Taiwan scenario. Estimates of China's naval mine inventory exceed 50,000 mines, with many more capable systems developed in the past 10 years. O'Rourke sees similar progress in surface vessels."⁶²³

China since the early 1990s has purchased four Sovremenny-class destroyers from Russia and put into service 10 new classes of indigenously built destroyers and frigates (some of which are variations of one another) that demonstrate a significant modernization of PLA Navy surface combatant technology. DOD states: "Since 2008, the PLA Navy has embarked on a robust surface combatant construction program of various classes of ships, including guided missile destroyers (DDG[s]) and guided missile frigates (FFG[s]). During 2012, China continued series production of several classes, including construction of a new generation of DDG[s]." DOD states that China's new destroyers and frigates "provide a significant upgrade to the PLA Navy's area air defense capability, which will be critical as it expands operations into 'distant seas' beyond the range of shore-based air defense." China reportedly is also building a new class of corvettes (i.e., light frigates) and has put into service a new kind of missile-armed fast attack craft that uses a stealthy catamaran hull design.

.... China in 1996 ordered two Sovremenny-class destroyers from Russia; the ships entered service in 1999 and 2001. China in 2002 ordered two additional Sovremenny-class destroyers from Russia; the ships entered service in 2005 and 2006. Sovremenny-class destroyers are equipped with the Russian-made SS-N-22 Sunburn ASCM, a highly capable ASCM.

.... China since the early 1990s has put into service six new classes of indigenously built destroyers, two of which are variations of another. The classes are called the Luhai (Type 052), Luhai (Type 051B), Luyang I (Type 052B), Luyang II (Type 052C), the Luyang III (Type 052D), and Louzhou (Type 051C) designs. Compared to China's remaining older Luda (Type 051) class destroyers, which entered service between 1971 and 1991, these six new indigenously built destroyer classes are substantially more modern in terms of their hull designs, propulsion systems, sensors, weapons, and electronics. The Luyang II-class ships... and the Luyang III-class ships appear to feature phased-array radars that are outwardly somewhat similar to the SPY-1 radar used in the U.S.-made Aegis combat system. Like the older Luda-class destroyers, these six new destroyer classes are armed with ASCMs.

China between 1994 and 2007 commissioned only one or two ships in its first four new indigenously built destroyers classes, suggesting that these classes were intended as stepping stones in a plan to modernize the PLA Navy's destroyer technology incrementally before committing to larger-scale series production of Luyang II-class destroyers...after commissioning no new destroyers in 2008-2011, commissionings of new Luyang II-class destroyers appears to have resumed. Regarding the 2008-2011 gap in commissionings, one observer states, "The relocation of JiangNan shipyard and indigenization of DA80/DN80 gas turbine (QC-280) delayed the production of follow-on units [of Luyang II-class destroyers] for several years."

.... China since the early 1990s has put into service four new classes of indigenously built frigates, two of which are variations of two others. The classes are called the Jiangwei I (Type 053 H2G), Jiangwei II (Type 053H3), Jiangkai I (Type 054), and Jiangkai II (Type 054A) designs. Compared to China's remaining older Jianghu (Type 053) class frigates, which entered service between the mid-1970s and 1989, the four new frigate classes feature improved hull designs and systems, including improved AAW capabilities...production of Jiangkai II-class ships... continues, and *Jane's* projects an eventual total of at least 16.

.... China is building a new type of corvette (i.e., a light frigate, or FFL) called the Jiangdao class or Type 056... DOD states that "At least six of the JIANGDAO-class corvettes (FFL[s]) (Type 056) were launched in 2012. The first of these ships entered service on February 25, 2013; China may build 20 to 30 of this class."

.... As an apparent replacement for at least some of its older fast attack craft, or FACs (including some armed with ASCMs), China in 2004 introduced a new type of ASCM-armed fast attack craft, called the Houbei (Type 022) class... that uses a stealthy, wave-piercing, catamaran hull. Each boat can carry eight C-802 ASCMs. The August 2009 ONI report states that “the Houbei’s ability to patrol coastal and littoral waters and react at short notice allows the PLA(N)’s larger combatants to focus on offshore defense and out-of-[home]area missions without leaving a security gap along China’s coastline.” The Houbei class was built in at least six shipyards; construction of the design appeared to stop in 2009 after a production run of about 60 units.

.... In addition to the PLAN surface combatants discussed above, China operates numerous additional surface ships in several paramilitary maritime law enforcement agencies that are outside the PLAN. These agencies include, but may not be limited to, China Marine Surveillance (CMS), the Fisheries Law Enforcement Command (FLEC), the China Coast Guard (CCG), the Maritime Safety Administration (MSA), and the Customs Anti-Smuggling Bureau (CASB). China often uses ships operated by these agencies, rather than PLAN ships, to assert and defend its maritime territorial claims and fishing interests in the South China Sea and East China Sea. While the ships operated by these agencies are unarmed or lightly armed, they can nevertheless be effective in confrontations with unarmed fishing vessels or other ships. The CMS, FLEC, and MSA fleets reportedly are being modernized rapidly, and some of the newest ships operated by these agencies are relatively large.

China is developing aircraft carriers like the *Liaoning* and has future plans for new Types. A CRS report notes that,⁶²⁴

The *Liaoning* has an estimated full load displacement of about 60,000 tons, and might accommodate an air wing of 30 or more aircraft, including short-takeoff, vertical landing (STOVL) fixed-wing airplanes and some helicopters. By comparison, a U.S. Navy aircraft carrier has a full load displacement of about 100,000 tons and can accommodate an air wing of 60 or more aircraft, including conventional takeoff and landing (CTOL) airplanes (which tend to have a greater range/payload than STVOL airplanes) and some helicopters.

.... DOD states that “China also continues to pursue an indigenous aircraft carrier program ... and will likely build multiple aircraft carriers over the next decade. The first Chinese-built carrier will likely be operational sometime in the second half of this decade.” DOD also states that “Although reports have surfaced regarding the construction of a second Chinese aircraft carrier in Shanghai, the Chinese Ministry of National Defense has dismissed these claims.” DOD stated in 2012 that “some components of China’s first indigenously-produced carrier may already be under construction.”

An April 23, 2013, press report stated:

A senior officer with the People’s Liberation Army (PLA) Navy said on Tuesday [April 23, 2013] that “China will have more than one aircraft carrier.” Song Xue, deputy chief of staff of the PLA Navy, told foreign military attaches at a ceremony to celebrate the Navy’s 64th founding anniversary in Beijing, “The next aircraft carrier we need will be larger and carry more fighters.”

.... A May 21, 2012, press report stated:

Taiwan’s intelligence chief said May 21 that China plans to build two aircraft carriers, in addition to the first in its fleet, a refitted former Soviet carrier currently undergoing sea trials.... Tsai [Teh-sheng, head of the island’s National Security Bureau,] said construction of the warships is slated to start in 2013 and 2015, respectively, with delivery dates of 2020 and 2022, and that they would be conventionally powered.

.... Although aircraft carriers might have some value for China in Taiwan-related conflict scenarios, they are not considered critical for Chinese operations in such scenarios, because Taiwan is within range of land-based Chinese aircraft. Consequently, most observers believe that China is acquiring carriers primarily for their value in other kinds of operations, and to symbolize China’s status as a major world power. DOD stated in 2011 that “Given the fact that Taiwan can be reached by land-based aviation, China’s aircraft carrier program would offer very limited value in a Taiwan scenario and would require additional naval resources for protection. However, it would enable China to extend its naval air capabilities elsewhere.”

Chinese aircraft carriers could be used for power-projection operations, particularly in scenarios that do not involve opposing U.S. forces. Chinese aircraft carriers could also be used for humanitarian assistance and disaster relief (HA/DR) operations, maritime security operations (such as anti-piracy operations), and non-combatant evacuation operations (NEOs). Politically, aircraft carriers could be particularly valuable to China for projecting an image of China as a major world power, because aircraft carriers are viewed by many as symbols of major world power status. In a combat situation involving opposing U.S. naval and air forces, Chinese aircraft carriers would be highly vulnerable to attack by U.S. ships and aircraft, but conducting such attacks could divert U.S. ships and aircraft from performing other missions in a conflict situation with China.

The US DoD has reported that Chinese carrier-based jets – evidently the Shenyang J-15 – were conducting take-off and landing training on the *Liaoning* in late 2012.⁶²⁵ Furthermore, the deputy chief designer of the *Liaoning* said in an interview that China was planning for more aircraft carriers: “China’s perception of interest demands has a bearing on the number of aircraft carriers. How many aircraft carriers China should have depends on its needs. What I can tell you is that the ‘Liaoning Ship’ is just a beginning.”⁶²⁶

Chinese Activity at Sea

China is also becoming the kind of “blue water” navy that will be able to deploy significant air and sea forces in the IOR. It has already deployed limited anti-piracy forces in to the Western IOR, and while some reports that it is actively seeking naval bases in Burma and Pakistan – the so-called “string of pearls” – seem exaggerated, it is steadily increasing its naval activity.

Figure 13 shows the increasing range of Chinese naval exercises and that they are now approaching the Strait of Malacca. The 2013 Chinese defense white paper highlighted the expanding “blue water” range of Chinese naval forces, improved readiness and training, and joint warfare capabilities – all of which increase Chinese capabilities to project power and execute area denial activities. If all of the various sections in the white paper that deal with the PLAN are assembled together, they provide a considerable amount of detail on both current PLAN capabilities and the trends in these forces.⁶²⁷

The PLA Navy (PLAN) is China’s mainstay for operations at sea, and is responsible for safeguarding its maritime security and maintaining its sovereignty over its territorial seas along with its maritime rights and interests. The PLAN is composed of the submarine, surface vessel, naval aviation, marine corps and coastal defense arms. In line with the requirements of its offshore defense strategy, the PLAN endeavors to accelerate the modernization of its forces for comprehensive offshore operations, develop advanced submarines, destroyers and frigates, and improve integrated electronic and information systems. Furthermore, it develops blue-water capabilities of conducting mobile operations, carrying out international cooperation, and countering non-traditional security threats, and enhances its capabilities of strategic deterrence and counterattack. Currently, the PLAN has a total strength of 235,000 officers and men, and commands three fleets, namely, the Beihai Fleet, the Donghai Fleet and the Nanhai Fleet. Each fleet has fleet aviation headquarters, support bases, flotillas and maritime garrison commands, as well as aviation divisions and marine brigades. In September 2012, China’s first aircraft carrier *Liaoning* was commissioned into the PLAN. China’s development of an aircraft carrier has a profound impact on building a strong PLAN and safeguarding maritime security.

...The PLAN strengthens maritime control and management, systematically establishes patrol mechanisms, effectively enhances situational awareness in surrounding sea areas, tightly guards against various types of harassment, infiltration and sabotage activities, and copes promptly with maritime and air incidents and emergencies. It advances maritime security cooperation, and maintains maritime peace and stability, as well as free and safe navigation. Within the framework of the Military Maritime Consultative Agreement (MMCA), the Chinese and US navies regularly exchange maritime information to avoid accidents at sea. According to the Agreement on Joint Patrols by the Navies of China and Vietnam in the Beibu Gulf, the two navies have organized joint patrols twice a year since 2006.

...Intensifying blue water training...The PLAN is improving the training mode of task force formation in blue water. It organizes the training of different formations of combined task forces composed of new types of destroyers, frigates, ocean-going replenishment ships and shipborne helicopters. It is increasing its research and training on tasks in complex battlefield environments, highlighting the training of remote early warning, comprehensive control, open sea interception, long-range raid, anti-submarine warfare and vessel protection at distant sea. The PLAN organizes relevant coastal forces to carry out live force-on-force training for air defense, anti-submarine, anti-mine, anti-terrorism, anti-piracy, coastal defense, and island and reef sabotage raids. Since 2007, the PLAN has conducted training in the distant sea waters of the Western Pacific involving over 90 ships in nearly 20 batches. During the training, the PLAN took effective measures to respond to foreign close-in reconnaissance and illegal interference activities by military ships and aircraft. From April to September 2012, the training vessel Zhenghe completed global-voyage training, paying port calls to 14 countries and regions.

To fulfill China's international obligations, the Chinese navy carries out regular escort missions in the Gulf of Aden and waters off Somalia. It conducts exchanges and cooperation with other escort forces to jointly safeguard the security of the international SLOCs. As of December 2012, Chinese navy task groups have provided protection for four WFP ships and 2,455 foreign ships, accounting for 49% of the total of escorted ships. They helped four foreign ships, recovered four ships released from captivity and saved 20 foreign ships from pursuit by pirates.

Chinese navy escort task forces have maintained smooth communication with other navies in the areas of joint escort, information sharing, coordination and liaison. They have conducted joint escorts with their Russian counterparts, carried out joint anti-piracy drills with naval ships of the ROK, Pakistan and the US, and coordinated with the European Union to protect WFP ships. It has exchanged boarding visits of commanders with task forces from the EU, NATO, the Combined Maritime Forces (CMF), the ROK, Japan and Singapore. It has exchanged officers for onboard observations with the navy of the Netherlands. China takes an active part in the conferences of the Contact Group on Piracy off the Coast of Somalia (CGPCS) and "Shared Awareness and Deconfliction" (SHADE) meetings on international merchant shipping protection.

Since January 2012, independent deployers such as China, India and Japan have strengthened their convoy coordination. They have adjusted their escort schedules on a quarterly basis, optimized available assets, and thereby enhanced escort efficiency. China, as the reference country for the first round of convoy coordination, submitted its escort timetable for the first quarter of 2012 in good time. India and Japan's escort task forces adjusted their convoy arrangements accordingly, thereby formulating a well-scheduled escort timetable. The ROK joined these efforts in the fourth quarter of 2012.

...The routine combat readiness work of the PLAN serves to safeguard national territorial sovereignty and maritime rights and interests. It carries out diversified patrols and provides whole-area surveillance in a cost-effective way. The PLAN organizes and performs regular combat readiness patrols, and maintains a military presence in relevant sea areas. All fleets maintain the necessary number of ships patrolling in areas under their respective command, beef up naval aviation reconnaissance patrols, and organize mobile forces to conduct patrols and surveillance in relevant sea areas, as required.

Joint maritime exercises and training are being expanded. In recent years, the Chinese navy has taken part in the "Peace-07," "Peace-09" and "Peace-11" multinational maritime exercises hosted by Pakistan on the Arabian Sea. The PLA and Russian navies held the "Maritime Cooperation-2012" military drill in the Yellow Sea off China's east coast focusing on joint defense of maritime traffic arteries. Chinese and Thai marine corps held the "Blue Strike-2010" and "Blue Strike-2012" joint training exercises. During mutual port calls and other activities, the Chinese navy also carried out bilateral or multilateral maritime exercises and training in such tasks as communications, formation movement, maritime replenishment, cross-deck helicopter landing, firing at surface, underwater and air targets, joint escort, boarding and inspection, joint search and rescue and diving with its counterparts of India, France, the UK, Australia, Thailand, the US, Russia, Japan, New Zealand and Vietnam.

... In combination with its routine combat readiness activities, the PLAN provides security support for China's maritime law enforcement, fisheries, and oil and gas exploitation. It has established mechanisms to coordinate and cooperate with law-enforcement organs of marine surveillance and fishery administration, as well as a joint military-police-civilian defense mechanism. Further, the PLAN has worked in coordination

with relevant local departments to conduct maritime survey and scientific investigation; build systems of maritime meteorological observation, satellite navigation, radio navigation and navigation aids; release timely weather and sea traffic information; and ensure the safe flow of traffic in sea areas of responsibility.

Together with the marine surveillance and fishery administration departments, the PLAN has conducted joint maritime exercises and drills for protecting rights and enforcing laws, and enhanced its capabilities to coordinate command and respond to emergencies in joint military-civilian operations to safeguard maritime rights. The “Donghai Collaboration-2012” joint exercise was held in the East China Sea in October 2012, involving 11 ships and eight planes.

As an important armed maritime law-enforcement body, the border public security force exercises jurisdiction over both violations of laws, rules and regulations relating to public security administration and suspected crimes committed in China’s internal waters, territorial seas, contiguous zones, exclusive economic zones and continental shelf. In recent years, the border public security force has endeavored to guarantee the security of sea areas, strengthened patrols, surveillance and management along the sea boundary in the Beibu Gulf and around the Xisha sea areas, and effectively maintained maritime public order and stability.

The US Department of Defense report on Chinese military power summarized the key developments in China’s naval forces as follows:⁶²⁸

Since the 1990s, the PLA Navy has transformed from a large fleet of single mission platforms to a leaner force equipped with more modern, multi-mission platforms. In contrast to the fleet of just a decade ago, many PLA Navy combatants are equipped with advanced area air-defense systems, modern ASCMs, and torpedoes. These capabilities not only increase the lethality of PLA Navy platforms, particularly in the area of anti-surface warfare, but also enable them to operate beyond the range of land-based air cover. The PLA Navy possesses some 79 principal surface combatants (destroyers and frigates), 50 submarines, 51 amphibious and medium landing ships, and 86 missile-equipped patrol craft.

The PLA Navy has now completed construction of a major naval base at Yalong, on the southernmost tip of Hainan Island. The base is large enough to accommodate a mix of nuclear-powered attack and ballistic-missile submarines and advanced surface combatants, including aircraft carriers. Submarine tunnel facilities at the base could also enable deployments from this facility with reduced risk of detection.

China’s aircraft carrier research and development program includes renovation of the KUZNETSOV-class aircraft carrier Hull 2 (formerly the Varyag), which began sea trials in 2011. It will likely serve initially as a training and evaluation platform. Once China deploys aircraft capable of operating from a carrier, it should offer a limited capability for carrier-based air operations.

Some components of China’s first indigenously-produced carrier may already be under construction; that carrier could achieve operational capability after 2015. China likely will build multiple aircraft carriers and associated support ships over the next decade. China currently has a land-based training program for carrier pilots; however, it will still take several additional years for China to achieve a minimal level of combat capability for its aircraft carriers.

The PLA Navy is improving its long-range surveillance capability with sky-wave and surface wave over-the-horizon (OTH) radars. In combination with early-warning aircraft, unmanned aerial vehicles (UAVs), and other surveillance and reconnaissance equipment, the radars allow China to carry out surveillance and reconnaissance over the western Pacific. These radars can be used in conjunction with reconnaissance satellites to locate targets at great distances from China, thereby supporting long-range precision strikes, including employment of ASBMs.

China has developed torpedo and mine systems capable of area denial in a Taiwan scenario. Estimates of China’s naval mine inventory exceed 50,000 mines, with many more capable systems developed in the past 10 years.

China is producing a new class of nuclear-powered ballistic missile submarine (SSBN). The JIN-class SSBN (Type-094) will eventually carry the JL-2 submarine-launched ballistic missile with an estimated range of some 7,400km. The JIN-class SSBN and the JL-2 will give the PLA Navy its first credible sea-based nuclear capability. The JL-2 program has faced repeated delays, but may reach initial operating capability within the next two years.

China has expanded its force of nuclear-powered attack submarines (SSN). Two second generation SHANG-class (Type-093) SSNs are already in service and as many as five third generation SSNs will be added in the coming years. When complete, the new class of SSNs will incorporate better quieting technology, improving China's capability to conduct a range of missions from surveillance to the interdiction of surface vessels with torpedoes and ASCMs.

The current mainstay of modern diesel powered attack submarines (SS) in the PLA Navy submarine force are the 13 SONG-class (Type-039) units. Each can carry the YJ-82 ASCM. The follow-on to the SONG is the YUAN-class (a Type-039 variant), as many as four of which are already in service. The YUAN-class probably includes an air-independent power system. The SONG, YUAN, SHANG and the still-to-be-deployed new SSN-class all will eventually be capable of launching a new long-range ASCM.

China has deployed approximately 60 of its HOUBEI-class (Type-022) wave-piercing catamaran-hull guided missile patrol craft. Each boat can carry up to eight YJ-83 ASCMs. These boats have increased the PLA Navy's littoral warfare capabilities. The PLA Navy has acquired modern, domestically-produced surface combatants.

These include at least two LUYANG II-class (Type-052C) guided missile destroyers (DDG) fitted with the indigenous HHQ-9 long-range SAM, with additional hulls under construction; two LUZHOU-class (Type-051C) DDGs equipped with the Russian SA-N-20 long-range SAM; and at least nine JIANGKAI II-class (Type-054A) guided-missile frigates, fitted with the medium range HHQ-16 vertically launched SAM. These ships improve the PLA Navy's area air defense capability significantly, which will be critical as the PLA Navy expands its operations into areas beyond the range of shore-based air defense.

The updated DoD report for 2013 provided more details.⁶²⁹

The PLA Navy remains at the forefront of the military's efforts to extend its operational reach beyond East Asia and into what China calls the "far seas." Missions in these areas include protecting important sea lanes from terrorism, maritime piracy, and foreign interdiction; providing humanitarian assistance and disaster relief; conducting naval diplomacy and regional deterrence; and training to prevent a third party, such as the United States, from interfering with operations off China's coast in a Taiwan or South China Sea conflict. The PLA Navy's ability to perform these missions is modest but growing as it gains more experience operating in distant waters and acquires larger and more advanced platforms. The PLA Navy's goal over the coming decades is to become a stronger regional force that is able to project power across the globe for high-intensity operations over a period of several months, similar to the United Kingdom's deployment to the South Atlantic to retake the Falkland Islands in the early 1980s. However, logistics and intelligence support remain key obstacles, particularly in the Indian Ocean. (p. 38)

In the last several years, the PLA Navy's distant seas experience has primarily derived from its ongoing counter-piracy mission in the Gulf of Aden and long-distance task group deployments beyond the first island chain in the western Pacific. China continues to sustain a three-ship presence in the Gulf of Aden to protect Chinese merchant shipping from maritime piracy. This operation is China's first enduring naval operation beyond the Asia region.

Additionally, the PLA Navy has begun to conduct military activities within the Exclusive Economic Zones (EEZs) of other nations, without the permission of those coastal states. Of note, the United States has observed over the past year several instances of Chinese naval activities in the EEZ around Guam and Hawaii. One of those instances was during the execution of the annual Rim of the Pacific (RIMPAC) exercise in July/August 2012. While the United States considers the PLA Navy activities in its EEZ to be lawful, the activity undercuts China's decades-old position that similar foreign military activities in China's EEZ are unlawful. (p. 38)

The PLA Navy has made long-distance deployments a routine part of the annual training cycle. In 2012, it deployed task groups beyond the first island chain seven times with formations as large as seven ships. These deployments are designed to complete a number of training requirements, including long-distance navigation, C2, and multi-discipline warfare in deep sea environments beyond the range of land-based air defense.

The PLA Navy's force structure continues to evolve, incorporating more platforms with the versatility for both offshore and long-distance operations. In addition to the recently-commissioned KUZNETSOV-class aircraft carrier (CV) *Liaoning*, China is engaged in series production of the LUYANG-class III DDG, the

JIANGKAI-class II FFG, and the JIANGDAO-class FFL. China will also begin construction on a new Type 081-class landing helicopter assault ship within the next five years. China will probably build several aircraft carriers over the next 15 years.

Limited logistical support remains a key obstacle preventing the PLA Navy from operating more extensively beyond East Asia, particularly in the Indian Ocean. China desires to expand its access to logistics in the Indian Ocean and will likely establish several access points in this area in the next 10 years (potential sites include the Strait of Malacca, Lombok Strait, and Sunda Strait). These arrangements will likely take the form of agreements for refueling, replenishment, crew rest, and low-level maintenance. The services provided will likely fall short of U.S.-style agreements permitting the full spectrum of support from repair to re-armament. (p. 39)

Regular Naval Forces

The PLA Navy has the largest force of major combatants, submarines, and amphibious warfare ships in Asia. China's naval forces include some 79 principal surface combatants, more than 55 submarines, 55 medium and large amphibious ships, and roughly 85 missile-equipped small combatants. (p. 6)

The current mainstay of the Chinese submarine force is modern diesel powered attack submarines (SS). In addition to 12 KILO-class submarines acquired from Russia in the 1990s and 2000s (eight of which are equipped with the SS-N-27 ASCM), the PLA Navy possesses 13 SONG-class SS (Type 039) and eight YUAN-class SSP (Type 039A). The YUAN-class SSP is armed similarly to the SONG-class SS, but also includes an air-independent power system. China may plan to construct up to 20 YUAN-class SSPs. (p. 7)

Since 2008, the PLA Navy has embarked on a robust surface combatant construction program of various classes of ships, including guided missile destroyers (DDG) and guided missile frigates (FFG). During 2012, China continued series production of several classes, including construction of a new generation of DDG. Construction of the LUYANG II-class DDG (Type 052C) continued, with one ship entering service in 2012, and an additional three ships under various stages of construction and sea trials, bringing the total number of ships of this class to six by the end of 2013. Additionally, China launched the lead ship in a follow-on class, the LUYANG III- class DDG (Type 052D), which will likely enter service in 2014. The LUYANG III incorporates the PLA Navy's first multipurpose vertical launch system, likely capable of launching ASCM, land attack cruise missiles (LACM), surface-to-air missiles (SAM), and anti-submarine rockets. China is projected to build more than a dozen of these ships to replace its aging LUDA-class destroyers (DD). China has continued the construction of the workhorse JIANGKAI II-class FFG (Type 054A), with 12 ships currently in the fleet and six or more in various stages of construction, and yet more expected. These new DDGs and FFGs provide a significant upgrade to the PLA Navy's area air defense capability, which will be critical as it expands operations into "distant seas" beyond the range of shore-based air defense. (p. 7)

Augmenting the PLA Navy's littoral warfare capabilities, especially in the South China Sea and East China Sea, is a new class of small combatant. At least six of the JIANGDAO-class corvettes (FFL) (Type 056) were launched in 2012. The first of these ships entered service on February 25, 2013; China may build 20 to 30 of this class. These FFLs augment the 60 HOUBEI-class wave-piercing catamaran missile patrol boats (PTG) (Type 022), each capable of carrying eight YJ-83 ASCMs, for operations in littoral waters. (p. 7)

The PLA Navy also increased its amphibious force in 2012. Two YUZHAO-class amphibious transport docks (LPD) (Type 071) were accepted into service during the year bringing the total of YUZHAO LPDs to three. (p. 7)

The PLA Navy remains at the forefront of the military's efforts to extend its operational reach beyond East Asia and into what China calls the "far seas." Missions in these areas include protecting important sea lanes from terrorism, maritime piracy, and foreign interdiction; providing humanitarian assistance and disaster relief; conducting naval diplomacy and regional deterrence; and training to prevent a third party, such as the United States, from interfering with operations off China's coast in a Taiwan or South China Sea conflict. The PLA Navy's ability to perform these missions is modest but growing as it gains more experience operating in distant waters and acquires larger and more advanced platforms. The PLA Navy's goal over the coming decades is to become a stronger regional force that is able to project power across the globe for high-intensity operations over a period of several months, similar to the United Kingdom's deployment to the South Atlantic to retake the Falkland Islands in the early 1980s. However, logistics and intelligence support remain key obstacles, particularly in the Indian Ocean. (p. 38)

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Maritime Paramilitary Forces

During the 2012 Scarborough Reef and Senkaku Island tensions, the China Maritime Surveillance (CMS) and Fisheries Law Enforcement Command (FLEC) ships were responsible for directly managing the disputes on a daily basis, while the PLA Navy maintained a more distant presence away from the immediate vicinity of the contested waters. China prefers to use its civilian maritime agencies in these disputes, and use the PLA Navy further ashore from disputed areas or as an escalatory measure. The five civilian agency entities, commonly referred to as the "Five Dragons" are:

- *Anti-Smuggling Bureau (ASB)*: Subordinate to the General Administration of Customs and Ministry of Public Security. Armed entity responsible for criminal investigations and smuggling cases along China's inland border posts and rivers. (p.40)
- *China Coast Guard (CCG)*: Subordinate to the Ministry of Public Security. Active duty maritime police force responsible for combating maritime crime. (p.40)
- *China Maritime Surveillance (CMS)*: Subordinate to the State Oceanic Administration and Ministry of Land and Resources. Responsible for asserting China's marine rights and sovereignty claims in disputed maritime regions. (p.40)
- *Fisheries Law Enforcement Command (FLEC)*: Subordinate to the Ministry of Agriculture. Enforces PRC fisheries laws and handles fishery disputes with foreign entities across China's exclusive economic zone (EEZ).

- *Maritime Safety Administration (MSA)*: Subordinate to the Ministry of Transport. Responsible for safety of life at sea (SOLAS), maritime pollution control, and cleanup, port inspection, and maritime investigation.

In the next decade, an expanded and modernized force of civilian maritime ships will afford China the capability to more robustly patrol its territorial claims in the ECS and SCS. China is continuing with the second half of a modernization and construction program for its maritime law enforcement agencies. The first half of this program, from 2004-2008, resulted in the addition of almost 20 ocean-going patrol ships for the CMS (9), Bureau of Fisheries (BOF) (3), Maritime Safety Administration (MSA) (3), and China Coast Guard (2). The second half of this program, from 2011-2015, includes at least 30 new ships for the CMS (23), BOF (6), and MSA (1). Several agencies have also acquired ships that were decommissioned from the PLA Navy. Some old patrol ships will be decommissioned during this period. In addition, MLE agencies will likely build more than 100 new patrol craft and smaller units, both to increase capability and to replace old units. Overall, CMS total force level is expected to increase 50 percent by 2020 and BOF by 25 percent. MSA, China Coast Guard, and Maritime Customs force levels will probably remain constant, but with larger and more capable units replacing older, smaller units. Some of these ships will have the capability to embark helicopters, a capability that only a few MLE ships currently have. The enlargement and modernization of China's MLE forces will improve China's ability to enforce its maritime sovereignty. (p.40)

The 2013 Japanese defense white paper provides another useful perspective on these developments.⁶³⁰

In other areas than waters near Japan as well, China is intensifying its activities in the South China Sea, including the Spratly Islands and Parcel Islands, over which it is engaged in territorial disputes with neighbors, including some ASEAN (Association of Southeast Asian Nations) countries. In March 2009, Chinese ships, including a naval vessel, a maritime research ship of the SOA, a Bureau of Maritime Fisheries patrol ship, and trawlers, approached a U.S. Navy acoustic research ship operating in the South China Sea to obstruct its operations. It is also reported that Chinese naval vessels fired warning shots at fishing boats of neighboring countries. Furthermore, in recent years, there has been growing friction between China and its neighboring countries over the South China Sea, as illustrated by protests by Taking into general consideration such factors as China's geographical location and economic globalization as well as the fact that China explicitly states in its laws and other documents that its Navy assumes the role of safeguarding maritime rights and interests and protecting maritime safety, the Chinese Navy and other organizations are considered to have the following objectives in their maritime activities.

The first one is to intercept naval operations by enemies in waters as far as possible from China in order to defend its territory and territorial waters. Behind this objective is an increase in effectiveness of long-range attacks due to recent progress in science and technology.

The second one is to develop military capabilities to deter and prevent Taiwan's independence. For example, China maintains that it will not allow any foreign intervention in solving the Taiwan issue and realizing the unification of China. In order for China to try to prevent by force foreign intervention into Taiwan, which is surrounded by the sea, it needs to enhance its military operational capabilities at sea.

The third one is to weaken the effective control of other countries over the islands which China claims its territorial rights over, while strengthening the claim of its territorial right to, through various surveillance activities and use of force in the seas surrounding the islands.

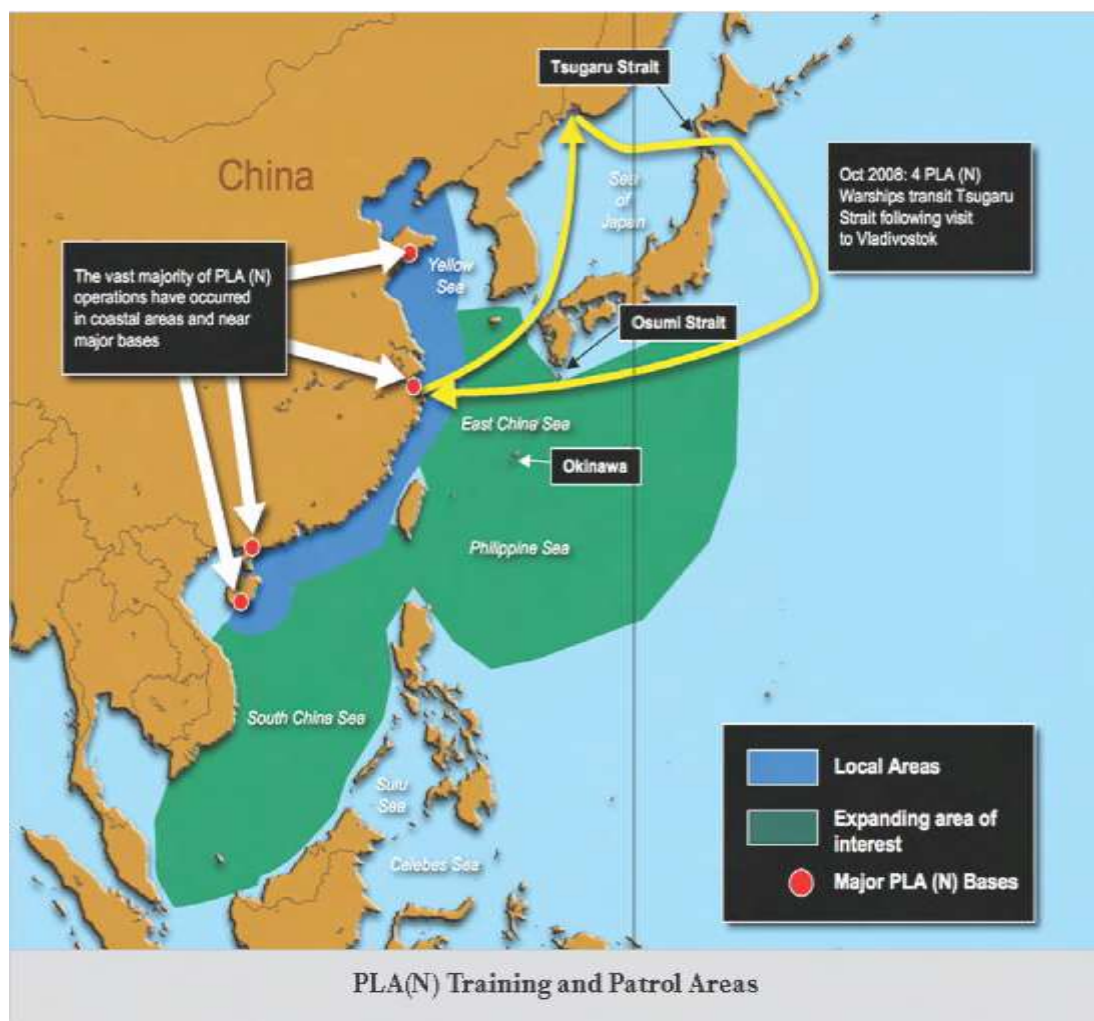
The fourth one is to acquire, maintain, and protect its maritime rights and interests. China I engaged in oil and gas drilling as well as building facilities and surveying for the drilling in the East China Sea and South China Sea.

The fifth one is to defend its sea lanes of communications. In this background is the fact that its sea lanes of communications, including its crude oil transportation routes from the Middle East, are extremely important for the globalizing the Chinese economy. What part of its sea lanes of communication the Chinese Navy thinks it should defend depends on such factors as international situations, but given the recent modernization of the Chinese Navy and Air Force, the areas which they can defend is believed to grow larger beyond the waters near China.

Given these objectives and recent trends in China's maritime activities, it is believed that China plans to

further expand the sphere of its maritime activities, and expand its operations as an ordinary routine practice in waters surrounding Japan, including the East China Sea and the Pacific Ocean as well as the South China Sea. Therefore, more attention needs to be paid to such activities as operations of naval vessels and various surveillance operations near Japan, developments of facilities that serve as bases for these activities, and developments of its own interpretations regarding the legal status of coastal areas in China's exclusive economic zones.

Figure X.1: Geographic Expansion in PLAN Military Exercises Locations



Source: Office of Naval Intelligence, *People's Liberation Army Navy: A Modern Navy with Chinese Characteristics*, p. 38.

The Chinese Air Force

The Chinese Air Force or PLAAF is an air force in transition. For much of the Cold War, it was designed to act as a mass air defense force flying second and third generation aircraft. During the 1990s, the PLAAF began to shift to a more diversified force structure; since 2000, the PLAAF has fully embraced a shift from a singular focus on air defense and interceptor fighter aircraft to a multi-mission force, capable of carrying out AD, strike, transport, ISR, and, since 2010, electronic warfare missions.⁶³¹

The 2013 DoD report on *Military and Security Developments Involving the People's Republic of China* described the current structure and trends in the PLAAF as follows:⁶³²

...China continues to field increasingly modern 4th generation aircraft, but the force still consists mostly of older 2nd and 3rd generation aircraft, or upgraded variants of those aircraft.

Within two years of the J-20 stealth fighter's first flight in January 2011, China tested a second next generation fighter prototype. The prototype, referred to as the "J-31," is similar in size to a U.S. F-35 fighter and appears to incorporate design characteristics similar to the J-20. It conducted its first flight on October 31, 2012.

China continues upgrading its H-6 bomber fleet (originally adapted from the late 1950s Soviet Tu-16 design) with a new variant that possesses greater range and will be armed with a long-range cruise missile. China also uses a modified version of the H-6 aircraft to conduct aerial refueling operations for many of its indigenous aircraft, increasing their combat range.

The PLA Air Force possesses one of the largest forces of advanced SAM systems in the world, consisting of a combination of Russian-sourced SA-20 battalions and domestically produced HQ-9 battalions.

China's aviation industry is developing a large transport aircraft (likely referred to as the Y-20) to supplement China's small fleet of strategic airlift assets, which currently consists of a limited number of Russian-made IL-76 aircraft. These heavy lift transports are needed to support airborne command and control (C2), logistics, paradrop, aerial refueling, and reconnaissance operations, as well as humanitarian assistance and disaster relief missions.

Developments in China's commercial and military aviation industry indicate improved aircraft manufacturing, associated technology, and systems development capabilities. Some of these advances have been made possible by business partnerships with Western aviation and aerospace firms (including cleared U.S. defense contractors), which provide overall benefit to China's military aerospace industry. China will continue to seek advancement in aerospace technology, capability, and proficiency to rival Western capabilities.

.... China has developed a national integrated air defense system (IADS) to defend key strategic cities and borders, territorial claims, and forces against threats from the air. Overall, China's IADS represents a multilayered defense consisting of weapons systems, radars and C4ISR platforms working together to counter multiple types of air threats at various ranges and altitudes. One of China's primary goals is to defend against precision strike munitions such as cruise and ballistic missiles, especially those launched from long distances. In order to counter precision strike munitions, China has developed advanced long-range SAM systems, airborne early warning platforms, and C2 networks. Defense against stealth aircraft and unmanned aerial vehicles is also a growing priority. Another aspect of China's IADS development is the deployment of land-based air defense brigades beyond the eastern coast of China and improving the air defense of China's naval fleets in the ECS and SCS. This is part of China's longstanding effort to expand its capabilities from focusing on territorial defense to supporting both defensive and offensive operations.

The PLAAF has fundamentally changed its force structure, composition, and manpower policies since 1985. Originally meant as a large air defense force, the PLAAF's force structure was made up primarily of obsolete interceptor aircraft. Its objective was largely to destroy aircraft attacking China and to maintain a small, air-based nuclear deterrent.

The promulgation of the Local Wars concept altered this situation. The CMC had concluded that air power, especially when utilizing precision-guided munitions, would be decisive in future conflicts. Thus, the PLAAF was expected to obtain a long-range precision strike capability.⁶³³ However, given the PLAAF's large inventory of second- and third-generation interceptor aircraft which lacked Beyond-Visual-Range (BVR) capability, advanced radar, and specialized electronic warfare (EW) support aircraft, the PLAAF would have to fundamentally change in order to successfully fight and win Local Wars.

Since that time, China has concluded that the PLAAF must be restructured to comprise more heavily of strike, rather than interceptor, aircraft. Furthermore, it would have to procure more advanced aircraft that were capable of carrying out these missions despite adversary defenses. Most importantly, the PLAAF would have to develop the human capital needed to utilize advanced systems and operate according to the Local Wars doctrine.

Between 1995 and 2013, roughly 3,000 fighter-interceptors were removed from the PLAAF's inventory: fighter-interceptor aircraft dropped from ~80% of the PLAAF to ~50%. Fighter-ground attack aircraft faced a different trend; overall numbers did not markedly increase but their relative share of the PLAAF's inventory increased by more than 2.5 times. Training and transport aircraft both increased in absolute numbers significantly, but their impact is best shown by their relative share of the PLAAF's aircraft holding.

The 2013 Japanese defense white paper summarized the modernization of Chinese air forces as follows:⁶³⁴

The Chinese Air Force and Navy have approximately 2,580 combat aircraft in total. The number of fourth generation modern fighters is rising steadily. China imported from Russia and produced under license the Su-27 fighters, and imported from Russia the Su-30 fighters equipped with anti-surface and anti-ship attack capabilities. China is also mass-producing the J-11B which is pointed out to be an imitation of Su-27 fighters as well as domestic J-10 fighters. Some point out that in addition to developing the J-20, which is pointed out to become a next-generation fighter...

China is developing another next-generation fighter. It is also making continuous efforts to improve capabilities which are essential for operations of modern air forces by introducing the H-6 tanker and KJ-2000 Airborne Early Warning and Control system. Furthermore, it is reported that China has a plan to import large cargo aircraft from Russia and is developing a new Y-20 large cargo aircraft in order to improve its transportation capability. In addition to domestically developing, producing and deploying a variety of aircraft and introducing them from Russia.

China seems to be domestically developing, producing and deploying unmanned aircraft... Judging from the modernization of air forces, it is believed that China is not only improving its air defense capabilities for its national territory, but also aiming to build up capabilities for air superiority and anti-surface and anti-ship attacks in areas which are as distant from China as possible, and improving long-range transportation capabilities. Further attention needs to be paid to these activities conducted by Chinese air forces.

As the figures below show, the dominance of the fighter-interceptor in the PLAAF has eroded and other categories of aircraft are making up larger and larger portions of the PLAAF. This trend indicates a significant change in doctrine and military objectives: more specifically, the changing force structure indicates greater doctrinal emphasis on ground attack, transport, and training missions. All of these are in line with the Local Wars concept.

In addition to the previously-described changes in the numbers of fighter-interceptor, fighter-ground attack, transport, and training aircraft, changes in the other categories also have significance.

The decline and the steady plateau of PLAAF bombers, combined with small numbers of tanker aircraft, indicate that the PLAAF is limiting the majority of its strike missions to targets within the first island chain. The H-6 variants forming the entirety of the PLAAF's bomber force appear to be cruise-missile buses suitable for use against distant targets.⁶³⁵ However, even if one considers the number of cruise missiles they could potentially carry, the number of bombers is so limited relative to fighter-ground attack aircraft that it appears that the PLAAF has either decided to concentrate its scarce resources within the first island chain, has not identified many targets worth striking outside of the first island chain, or potentially has abdicated medium-range strike to the Second Artillery Force.

Some American experts argue that the small number of tankers, EW, ELINT, AEW&C, and C2 aircraft indicates two things: first, that the PLAAF still does not function as effectively as the Western or Russian air forces, and also that the PLAAF has begun to plant the seeds of its own modernization and force development, and plans to develop similar capabilities as have the Western and Russian air forces.

The 2013 DoD report on Chinese military power noted that China was focusing on both A2AD capabilities and stealth, as well as on precision strike capabilities and improved air defenses:⁶³⁶

China's future air force A2/AD capabilities will be bolstered by the development of a 5th generation fighter force, which is not likely to be fielded before 2018. Key characteristics of fifth generation fighters include high maneuverability, lack of visibility on radar due to very low observable stealth shaping, and an internal weapons bay. Other key features of these aircraft are modern avionics and sensors that offer more timely situational awareness for operations in network-centric combat environments, radars with advanced targeting capabilities and protection against enemy electronic countermeasures, and integrated electronic warfare systems with advanced communication and GPS navigation functions. These next generation aircraft will improve China's existing fleet of fourth generation aircraft (Russian built Su-27/Su-30 and indigenous J-10 and J-11B fighters) by utilizing low-observable platforms to support regional air superiority and strike operations. Additionally, China's continuing upgrades to its bomber fleet may provide the capability to carry new, longer-range cruise missiles. Similarly, the acquisition and development of longer-range unmanned aerial vehicles (UAV), including the BZK-005, and unmanned combat aerial vehicles (UCAV), will increase China's ability to conduct long-range reconnaissance and strike operations. (p. 35)

...The PLA seeks to develop aircraft with low observable features, advanced avionics, super-cruise engines, and stealth applications, as demonstrated by the January 2011 flight test of the J-20 prototype and recent observations of a second indigenously-produced aircraft with stealth features. China seeks to develop these advanced aircraft to improve its regional airpower projection capabilities and strengthen its ability to strike regional airbases and facilities. China's first fifth generation fighter is not expected to enter service prior to 2018, and China faces numerous challenges to achieving full operational capability, including developing high-performance jet engines. (p. 64)

The PLA Air Force has observed foreign military employment of stealth aircraft and views this technology as a core capability in its transformation from a predominantly territorial air force to one capable of conducting offensive and defensive operations. The PLA Air Force also perceives there is an imbalance between offensive and defensive operations due to advances in stealth aircraft and related technologies with stealth aircraft providing an offensive operational advantage that denies an adversary the time to mobilize and conduct defensive operations. The PLA Air Force also sees the offensive advantage to combining an aircraft's stealthy features with information systems that enhance situational awareness and improve coordination of forces during combat. (p. 64)

The development of stealth aircraft incorporated with advanced fifth generation capabilities, including super-

cruise engines and advanced avionics, would make the aircraft capable of supporting a variety of tactical and regional missions. Furthermore, stealth aircraft the size of China's J-20 could be used as a multi-role fighter to strike ground targets within the region in addition to supporting air superiority missions beyond China's borders. Although China's second developmental fifth generation fighter is smaller in size than the J-20, this aircraft (tentatively identified as the J-31) may be designed for multi-role missions, providing China with a second stealth platform for regional operations. In addition to manned fighter aircraft, the PLA Air Force also views stealth technology as integral to unmanned aircraft, specifically those with an air-to-ground role, as this technology will improve the system's ability to penetrate heavily protected targets. (p. 64)

China's ground-based air defense A2/AD capabilities will likely be focused on countering long-range airborne strike platforms with increasing numbers of advanced, long-range SAMs. China's current air and air defense A2/AD components include a combination of advanced long-range SAMs – its indigenous HQ-9 and Russian SA-10 and SA-20 PMU1/PMU2, which have the advertised capability to protect against both aircraft and low-flying cruise missiles. China continues to pursue the acquisition of the Russian extremely long-range S-400 SAM system (400 km), and is also expected to continue research and development to extend the range of the domestic HQ-9 SAM to beyond 200km. (p. 35)

The Chinese development of stealth capabilities has been particularly striking. It became clear in early 2011 that China was developing its own “stealth” strike fighter, the J-20, although its capabilities and deployment schedule remain unknown.⁶³⁷ DNI James R. Clapper described the US assessment of this development as follows in his testimony to the US Intelligence Community for the House Permanent Select Committee on Intelligence on February 10, 2011:⁶³⁸

China's ongoing military modernization program began in earnest in the late 1990s, after Beijing observed the threat posed by long-range precision guided warfare in DESERT STORM and the Balkans. China's defense policies—initially aimed at creating credible options to forcibly bring Taiwan under Beijing's authority and developing the corresponding capabilities to prevent US intervention in a cross-Straits conflict—led Beijing to invest heavily in short- and medium-range ballistic missiles, modern naval platforms, improved air and air defense systems, counterspace capabilities, and an Intelligence, Surveillance, and Reconnaissance (ISR) system. For example, the Chinese have recently conducted the first flight test of what we refer to as a fifth-generation fighter, the J-20. We have known about this program for a long time and the flight test was not a surprise. We judge that this event is another indication of China's aspiration to develop a world-class military, and it is a capability we take seriously. But this program, like others in China, will have to overcome a number of hurdles before reaching its full potential.

The J-20 underwent its first test flight in January 2011, while more recently China test flew a second prototype stealth fighter model, the J-31 Falcon Eagle, on October 31, 2012. The J-31 appears to be a smaller version of the J-20. The J-31 looks similar in size and shape to Lockheed Martin's F-35 and F-22 fighters. It has been reported that Chinese hackers stole data on the design, performance, and other characteristics of the F-35 from the British defense firm BAE Systems. Though both Chinese planes display stealth design features, their true capabilities in terms of radar-absorbing coatings, sensors, and other stealth attributes remain unknown. It is also unknown when or if either plan will enter production.⁶³⁹

It was also reported in March 2013 that China's second stealth fighter, the J-31, could be developed into an aircraft carrier-borne fighter. It is the smaller of the two, resembles the F-25, and has two wheels on its nose landing gear. Meanwhile, the larger J-20 is likely to be a multi-role fighter designed to attack both ground and air targets, a stealthy interceptor like the USSR's MiG-25 Foxbat able to shoot down incoming fleets of attack planes, or a stealth bomb truck designed to speedily evade enemy radars and attack ships and bases with bombs and cruise missiles.⁶⁴⁰

Chinese manufacturers have unveiled the two next-generation fighter aircraft prototypes, the J-20 and J-31, as well as the J-15 carrier-based fighter and the accelerated modernization of Shenyang J-11 and Chengdu J-10 fleets. The Chinese defense industry has clearly been developing a diverse

portfolio of new aircraft designs, including modernizing its traditional fighters and developing indigenous fourth generation – and potentially fifth generation – fighters.⁶⁴¹

These important advances owe to the implementation of a multi-pronged strategy across the sector's largest defence-industrial group, [Aviation Industry Corporation of China](#) (AVIC) and its five core prime contractors: Chengdu Aircraft Industry Corporation, Shenyang Aircraft Corporation, Hongdu Aviation Industry Group, Xi'an Aircraft Company and Changhe/Hafei Aviation. This strategy has included corporate reforms and organizational restructuring, coupled with sustained investment and expansion. China's aeronautic development strategy has also focused on key projects, such as indigenous platform and critical sub-system programs, and on building research, development and innovation capacity. Finally, this strategy has aimed to integrate civil and military aircraft manufacturing and leverage international commercial partnerships and acquisitions.

As AVIC upgrades its existing third- and fourth-generation fighters, it is also focusing on next-generation stealth fighters (J-31) and strategic transport aircraft (Y-20), designed to complement the PLA's [long-term military transformation](#). These programs are currently in their development stages and have yet to overcome technical hurdles — AVIC is finding it particularly difficult to integrate reliable high-performance power plants. Nevertheless, these programs represent the Chinese defence industry's growing potential for innovation.

China still lacks the sophisticated technology required for highly advanced innovation in military equipment – in particular, advanced capabilities in material selection, process standardization, quality control, and ensuring structural strength. When combined with integration, systems design, and management problems, the result has been cost overruns, extensive testing and delays, and many modifications of the design. Furthermore, the fragmented corporate structure of AVIC makes it difficult for the group to gain compliance from its sub-units.⁶⁴²

China is, however, making major progress. Analyst Andrew S. Erikson has assessed China's stealth prototype developments in further depth. In particular, Chengdu Aircraft Corporation's (CAC's) production and design abilities are growing, and the company's Project 718 J-20 could become the PRC's first fifth generation (or, in Chinese terminology, fourth generation) aircraft – meaning it would include high maneuverability, supercruise, helmet-mounted sights, thrust vectoring, low observability, and sensor fusion characteristics. The J-20 prototype – which resembles the F-22 – is also large and has a significant weapons bay; when combined with China's strategic goals (as discussed in Chapter 1), it is likely that the plane could have several different applications, especially important to attack aircraft and strike fighter missions.⁶⁴³

China is also working on the development of unmanned aerial vehicles. One Chinese newspaper reported that the *Lijian* weaponized stealth drone, designed jointly by the Hongdu Aviation Industry Group and Shenyang Aviation Corporation, completed taxi tests in December of 2012 and is ready for its maiden flight. The drone is similar to the US X-47B and the European nEUROn. The first picture of the drone in flight was posted on the Internet in early May 2013.⁶⁴⁴ The *Lijian* is meant to replace the current slow, low-flying, propeller-driven UAVs that the PLA currently has.⁶⁴⁵

US Reaction and the Air Sea Battle

As noted in earlier discussions of the modernization of the PLAA, these increases in Chinese long-range naval capacity have already affected US power projection planning – although no clear decisions have yet been taken as to how US forces will change as a result. They have led the DoD to put a new emphasis on the role of the air sea battle in the Pacific and Asia.⁶⁴⁶

Recognizing that antiaccess/area-denial capabilities present a growing challenge to how joint forces operate, the Secretary of Defense directed the Department of the Navy and the Department of the Air Force to develop the Air-Sea Battle Concept.

The intent of Air-Sea Battle is to improve integration of air, land, naval, space, and cyberspace forces to provide combatant commanders the capabilities needed to deter and, if necessary, defeat an adversary employing sophisticated antiaccess/area-denial capabilities.

It focuses on ensuring that joint forces will possess the ability to project force as required to preserve and defend U.S. interests well into the future.

The Air-Sea Battle Concept is both an evolution of traditional U.S. power projection and a key supporting component of U.S. national security strategy for the 21st Century. However, it is important to note that Air-Sea Battle is a limited operational concept that focuses on the development of integrated air and naval forces in the context of antiaccess/area-denial threats. The concept identifies the actions needed to defeat those threats and the materiel and nonmateriel investments required to execute those actions.

There are three key components of Air-Sea Battle designed to enhance cooperation within the Department of the Air Force and the Department of the Navy.

The first component is an *institutional* commitment to developing an enduring organizational model that ensures formal collaboration to address the antiaccess/area-denial challenge over time.

The second component is *conceptual* alignment to ensure that capabilities are integrated properly between Services.

The final component is doctrinal, organizational, training, materiel, leadership and education, personnel, and facilities *initiatives* developed jointly to ensure they are complementary where appropriate, redundant when mandated by capacity requirements, fully interoperable, and fielded with integrated acquisition strategies that seek efficiencies where they can be achieved.

In 2013, a US military report on Air-Sea Battle discussed the concept at more length:⁶⁴⁷

ASB is a limited objective concept that describes what is necessary for the joint force to sufficiently shape A2/AD environments to enable concurrent or follow-on power projection operations. The ASB Concept seeks to ensure freedom of action in the global commons and is intended to assure allies and deter potential adversaries. ASB is a supporting concept to the Joint Operational Access Concept (JOAC), and provides a detailed view of specific technological and operational aspects of the overall A2/AD challenge in the global commons. The Concept is not an operational plan or strategy for a specific region or adversary. Instead, it is an analysis of the threat and a set of classified concepts of operations (CONOPS) describing how to counter and shape A2/AD environments, both symmetrically and asymmetrically, and develop an integrated force with the necessary characteristics and capabilities to succeed in those environments. ASB is about building conceptual alignment, programmatic collaboration and institutional commitment in an integrated way, across the military Services in order to develop forces and capabilities that can jointly address A2/AD challenges. The purpose of ASB is not to simply conduct operations more jointly. It is to increase operational advantage across all domains, enhance Service capabilities and mitigate vulnerabilities. In addition to other joint and service concepts, ASB will help ensure the U.S.'s ability to gain and maintain freedom of action in the global commons, and to the conduct of concurrent or follow-on operations against a sophisticated adversary.

Central Idea. The ASB Concept's solution to the A2/AD challenge in the global commons is to develop networked, integrated forces capable of attack-in-depth to disrupt, destroy and defeat adversary forces (NIA/D3). ASB's vision of networked, integrated, and attack-in-depth (NIA) operations requires the application of cross-domain operations across all the interdependent warfighting domains (air, maritime, land, space, and cyberspace, to disrupt, destroy, and defeat (D3) A2/AD capabilities and provide maximum operational advantage to friendly joint and coalition forces.

Cross-domain operations are conducted by integrating capabilities from multiple interdependent warfighting domains to support, shape, or achieve objectives in other domains. Cross-domain operations are those that can exploit asymmetric advantages in specific domains to create positive and potentially cascading effects in other domains. For cross-domain operations to be fully effective, commanders, whether defending or attacking, must have ready access to capabilities, no matter what domain they reside in or which commander

owns them, to support or achieve operational objectives and create the effects required for advantage over an adversary. This interoperability may require multi-pathing, or the ability to use multiple, alternative paths from among all domain capabilities to achieve a desired end. While cross-domain operations are more complex than single domain or single Service options, their multi-pathing possibilities can provide distinct operational advantages over single domain or single Service solutions to operational problems.

The ability to integrate capabilities, equipment, platforms, and units across multiple domains and to communicate, interact, and operate together presents a joint force commander with more numerous and powerful options, which in turn, offer greater probability of operational success. For example, cyber or undersea operations can be used to defeat air defense systems, air forces can be used to eliminate submarine or mine maritime threats, or space assets can be used to disrupt adversary command and control. Put simply, traditional understandings of Service missions, functional responsibilities, or employment of capabilities from particular domains should not be barriers that hamper imaginative joint operations in an A2/AD environment. Each of the elements of ASB's construct offer joint force commanders increased flexibility and capability.

Networked. In the ASB Concept, networked actions are tightly coordinated in real time by mission-organized forces to conduct integrated operations across all domains without being locked into Service-specific procedures, tactics, or weapons systems. A networked force is people and equipment linked in time and purpose with interoperable procedures; command control (C2) structures; and appropriate authorities capable of translating information into actions. These joint forces are able to attack the adversary A2/AD system-of-systems in depth and across all domains to create and exploit vulnerabilities.

Networked capabilities are both the physical means by which forces communicate and exchange information and the relationships, protocols, and procedures used by warfighters to complete their assigned missions. To be effective, networked forces need interoperable procedures, (C2) structures, and equipment. Authorities must also be provided at the appropriate C2 level in order for joint and coalition forces to gain and maintain decision advantage. In the ASB Concept, networked does not only mean having assured communications and access to data; it also means having a force trained to conduct operations using mission-type orders and being able to operate even in the absence of continuous connectivity. The joint force can achieve that ability in part by establishing habitual relationships across Service, component, and domain lines so that forces can be effectively trained to operate together in a contested and degraded environment.

Integrated. Integration is the arrangement of military forces and their actions to create a force that operates networked across domains as a whole. An integrated joint force is better able to combine capabilities across multiple domains to conduct specific missions. The basic concept of integration has further evolved into seeking the development of pre-integrated joint forces. In order to maintain an advantage over potential adversaries, air, naval, and land forces must fully integrate their operations. Integration, traditionally viewed as strictly the combatant commander's job, needs to begin across Service lines as part of force development.

Forces should be integrated prior to entering a theater. Effective integration requires enhanced joint and combined training against A2/AD capabilities, including training and exercise for cross-domain operations before deployment. In some cases, pre-integration will also require Services' collaboration in materiel programming to ensure interoperability to avoid overly redundant or incompatible systems.

Attack-in-depth to Disrupt, Destroy and Defeat. The attack-in-depth methodology is based on adversary effects chains, or an adversary's process of finding, fixing, tracking, targeting, engaging and assessing an attack on U.S. forces. Attack-in-depth is offensive and defensive fires, maneuver, and command and control with the objective of disrupting, destroying, or defeating an adversary's A2/AD capabilities, conducted across domains in time, space, purpose, and resources. Attack-in-depth seeks to apply both kinetic and non-kinetic means to address adversary critical vulnerabilities without requiring systematic destruction of the enemy's defenses (e.g., a rollback of an adversary's integrated air defense system).

D3 represents the 3 lines of effort of the ASB Concept:

- **Disrupt** Adversary Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR or C4I);
- **Destroy** adversary A2/AD platforms and weapons systems; and,

- **Defeat** adversary employed weapons and formations.

Disrupting these effects chains includes impacting an adversary's C4ISR or C4I capabilities, ideally precluding attack on friendly forces. **Destroying** or neutralizing adversary weapons platforms enhances friendly survivability and provides freedom of action. **Defeating** employed weapons post-launch defends friendly forces from an adversary's attacks and allows sustained operations.

Due to the nature of A2/AD threats and potentially short indications and warning timelines posed by adversaries, joint forces must be capable of effective offensive operations as soon as conflict begins, while simultaneously defending or re-positioning deployed forces, protecting land and sea bases, and bringing forces forward from garrison with acceptable levels of risk. The ability to attack and defend through the entire depth of the desired battlespace, in all the interdependent warfighting domains, is critical to establishing joint freedom of action.

These concepts are not targeted against China or the Pacific. They are equally important in US contingency planning for dealing with Iran and power projection missions throughout the world. At the same time, their development will be critical to US security partnerships throughout Asia and the Pacific, and in cases that do involve land forces, they mean that the US must pay far more attention to securing its lines of access and resupply, and that air and missile power are likely to play a far greater role compared to US land power.

The Impact of Shifts in US and Chinese Strategy and Forces in the Pacific

It seems likely in the near to mid-term, that China will focus more on its claims and interests in the Pacific than those directly affecting the IOR. These claims affect key maritime and air space areas from Northeast Asia to the South China sea, and have already led to growing tensions between China and many of its neighbors -- as well as with the US.

The Nine-Dash Line

Chinese claims in the Pacific are based on the "nine-dash line," which originally was an eleven-dotted line, was officially drawn on the Chinese map in 1947 by the Chinese Nationalist Government. When the Chinese Communist Party formed the Republic of China in 1949, the line was adopted and Zhou Enlai endorsed a revised nine-dash line. The line, called by China a "traditional maritime boundary line," encloses many key features of the South China Sea – the Paracel Islands, the Pratas Islands, the Spratly Islands, and the Macclesfield Bank. Some areas in the South China Sea currently claimed by China also show up in 2,000-year-old records. From 1947 to the 1970s, no country, including those in Southeast Asia, protested or challenged the validity of the nine-dash line.⁶⁴⁸

In 1992, Taiwan gave the status of historic water to the maritime areas within the nine-dash line, and most Chinese scholars today support the nine-dash line by arguing for historic rights within this line, sovereignty over all features within the line, and sovereign right and jurisdiction as defined by the UN Convention on the Law of the Sea. According to China foreign policy expert Sun Yun, the ambiguity about the exact details of China's claims allow it to satisfy domestic public opinion and safeguard the government's legitimacy.⁶⁴⁹

China also uses paramilitary forces – in particular, the Coast Guard – to patrol the waters within the nine-dash line. The PLAN uses maritime tensions to justify modernization, while growing numbers of paramilitary and law enforcement vessels are playing an increased role in disputed

territories and have been involved in many of the recent incidents. As the International Crisis Group noted in 2010,⁶⁵⁰

...the extensive use of paramilitary and law enforcement forces in sovereignty disputes also lowers the threshold of entry into confrontation. Naval vessels are likely to behave with more restraint than domestic actors with a limited understanding of foreign policy implications, while paramilitary agencies often tend to take more assertive actions precisely due to the lesser political ramifications of incidents in which they are involved. Moreover, civilian vessels, such as fishing boats, are more willing to retaliate against paramilitary than military vessels, thus increasing the risk of violence. On the other hand, a study conducted by Chinese scholars at the Ningbo Coast Guard Academy proposed that creating an enlarged, unified maritime security apparatus would strengthen flexibility in maritime conflicts. They concluded that relying on the navy to resolve disputes runs the risk of dangerous escalation, while the current model of fragmented law enforcement agencies lacks coherence and thus can lead to unpredictable risks of conflict.

Furthermore, when China sends law enforcement vessels to patrol all of the waters within the nine-dashed line, sometimes even entering into the economic zones of Vietnam and the Philippines, it appears to be exerting authority over areas claimed by other countries and to which it may not have a claim under UNCLOS. At the 2012 National People's Congress session, Liu Cigui, director of the State Oceanic Administration, indicated that China was serious about carrying out law enforcement activities in the South China Sea. He said that regular patrol activities would cover all the maritime zones under its jurisdiction. This could potentially include the entire nine-dashed line region, thus causing further confusion and anxiety among the other claimants.

Chinese Operations to Deal with the US Second Island Chain

In addition to achieving its security objectives in the first island chain – stretching from the Aleutians to the Philippines and containing Taiwan and Okinawa – China wants to increase its influence and control over the “second island chain.” This is a series of island groups running from the Japanese archipelago to the Bonin and Marshall islands. The US’ control of La Perouse Strait, Tsugaru Strait, and Tsushima Strait allows the US military the capacity to react quickly to a North Korean provocation as well as defend the key naval and air base of Guam.

In 1982, Chinese Admiral Liu Huaqing, the mastermind of China’s modern naval strategy and the former PLAN commander, said it would be necessary for China to control the first island chain by 2010 and the second island chain by 2020. Further, the PLAN should be ready to challenge US dominance over the Indian Ocean and Western Pacific in 2040.⁶⁵¹ As one US military analyst noted in 2011,⁶⁵²

China’s active defense strategy has a maritime component that aligns with the PRC’s 1982 naval maritime plan outlined by then-Vice Chairman of the Military Commission, Liu Huaqing. This naval strategy delineated three stages. In the first stage, from 2000 to 2010, China was to establish control of waters within the first island chain that links Okinawa Prefecture, Taiwan and the Philippines. In the second stage, from 2010 to 2020, China would seek to establish control of waters within the second island chain that links the Ogasawara island chain, Guam and Indonesia. The final stage, from 2020 until 2040, China would put an end to U.S. military dominance in the Pacific and Indian Oceans, using aircraft carriers as a key component of their military force. Recent Chinese military developments, rhetoric, and actions reflect implementation of this maritime strategy, on pace with the projections to seek control of the first island chain.

In order to achieve these goals, China is increasing its territorial sovereignty claims over islands in the Pacific that are also claimed by its neighboring countries. Examples include the Senkaku/Diaoyou Islands and the Philippines’ Scarborough Shoal. China has also built facilities on Mischief Reef, which is internationally recognized as part of the Philippines. These are actions many feel violate international law; however, the Philippines lacks the naval and air force capabilities to effectively confront China and negotiations have gone nowhere.⁶⁵³

The 2013 Japanese defense white paper addresses these Chinese sovereignty disputes in some depth:⁶⁵⁴

China is strongly expected to recognize its responsibility as a major power, accept and stick to the international norms, and play a more active and cooperative role in regional and global issues. On the other hand, there have been disputes with other countries on issues relating to trade imbalances, currency rates, and human rights. In regard to the issues on conflicting interests with its surrounding countries, including Japan, China has attempted to change the status quo by force based on its own assertion which is incompatible with the existing order of international law. The attempts have been criticized as assertive and include risky behaviors that could cause contingencies. Thus, there is a concern over its future direction.

.... In recent years, China is believed to be aiming to build up capabilities to conduct operations in more distant sea areas and airspace. Accordingly, China has been rapidly expanding its maritime activities both qualitatively and quantitatively. With regard to its activity in the sea/air area surrounding Japan, Chinese naval vessels and naval/air-force airplanes have been observed conducting what appeared to be training exercises or information gathering activities. A large number of Chinese government ships and aircraft belonging to maritime law-enforcement agencies have also been observed, which were engaged in monitoring activities for the protection of its maritime rights and interests. Some of these activities of China involve its intrusion into Japan's territorial waters, its violation of Japan's airspace and even dangerous actions that could cause a contingency situation, which are extremely regrettable. China should accept and stick to the international norms.

Regarding the move of naval forces, the number of Chinese naval surface vessels advancing to the Pacific Ocean has increased in recent years and such advancements are being routinely conducted today. Their route between the East China Sea and the Pacific Ocean is becoming diverse; in addition to the sea between the main island of Okinawa and Miyako Island, which they have passed every year since 2008, they passed the Osumi Strait eastward in April 2012 for the first time and also navigated the sea area between Yonakuni Island and Nakanokami Island near Iriomote Island northward for the first time in October of the same year. It seems that they are trying to improve their deployment capabilities in the open ocean. In January 2013, a Chinese naval vessel directed fire-control radar at a JMSDF destroyer and is suspected to have directed fire-control radar at a helicopter based on the JMSDF destroyer.

Regarding the move of air forces, in recent years, activities by Chinese naval/air-force planes, which appear to be some form of information gathering against Japan, have been observed frequently. The number of scrambles by the Japan Air Self Defense Force against Chinese aircraft is also rapidly increasing. Furthermore, in September 2007, multiple H-6 medium-range bombers flew into the Japanese air defense identification zone over the East China Sea and advanced near the Japan-China median line. Similarly, in March 2010, a Y-8 early warning aircraft advanced near the Japan-China median line. In March 2011, a Y-8 patrol aircraft and Y-8 intelligence gathering aircraft crossed the Japan-China median line and approached within approximately 50 km of Japan's airspace near the Senkaku Islands. These incidents indicate that Chinese aircraft are diversifying their flight patterns.

In 2012, Chinese military aircraft, including its fighters, intensified its activities. In January 2013, the Chinese Ministry of National Defense made public the fact that Chinese military aircraft regularly conducted warning and surveillance activities and that Chinese fighters conducted activities believed to be Combat Air Patrols (CAP) in the East China Sea. "The Diversified Employment of China's Armed Forces" mentioned "air vigilance and patrols at sea" for the first time as a Chinese defense white paper. In 2013, Chinese military aircraft, including its fighters, has intensified its activities further. In March and April 2011 and in April 2012, there have been instances of Chinese helicopters that appeared to belong to the State Oceanic Administration (SOA) of the Ministry of Land and Resources flying close to Japanese destroyers which were engaged in vigilance monitoring in the East China Sea.

Within Japan's territorial waters near the Senkaku Islands, in December 2008, Haijian ships which belong to the SOA of China conducted navigation operations which foreign ships are not permitted to conduct under international laws such as hovering and cruising. Then, in September 2010, a Chinese fishing trawler collided with patrol vessels of the Japan Coast Guard off the coast of the Senkaku Islands.

After the incidence, "Haijian" ships and "Yuzheng" ships belonging to then the Bureau of Fisheries at the Ministry of Agriculture of China entered the same territorial waters in August 2011, March and July 2012.

This way, “Haijian” and “Yuzheng” ships have gradually increased activities in the territorial waters in recent years. Since the Japanese government acquired ownership of the three islands (Uotsuri, Kitakojima and Minamikojima) of the Senkaku islands from a private Japanese citizen in September 2012, they have been frequently intruding into the territorial waters around the Senkaku Islands. On April 23, 2013, eight Haijian ships intruded into the same territorial waters. Meanwhile, in September 2012, upon making China’s own assertion about the Senkaku Islands, a spokesman of the Ministry of National Defense of China made a statement that the patrol carried out by a Chinese naval vessel in sea areas under China’s jurisdiction was totally just and legal.

Regarding Japan’s airspace over and around the Senkaku Islands, in December 2012, a fixed-wing aircraft belonging to the SOA violated the territorial airspace first as a Chinese aircraft. Since then, fixed-wing aircrafts belonging to the SOA have been frequently observed flying near the airspace.

In October 2012, vessels of the East Sea Fleet of the Chinese Navy conducted a joint exercise with “Haijian” and “Yuzheng” ships with focus on preservation/protection of territorial sovereignty and maritime interests. Furthermore, the navy is believed to be handing over retired navy vessels to the SOA and other agencies. It is believed that the Navy is supporting maritime law-enforcement agencies both in operation and equipment.

.... In other areas than waters near Japan as well, China is intensifying its activities in the South China Sea, including the Spratly Islands and Parcel Islands, over which it is engaged in territorial disputes with neighbors, including some ASEAN (Association of Southeast Asian Nations) countries. In March 2009, Chinese ships, including a naval vessel, a maritime research ship of the SOA, a Bureau of Maritime Fisheries patrol ship, and trawlers, approached a U.S. Navy acoustic research ship operating in the South China Sea to obstruct its operations. It is also reported that Chinese naval vessels fired warning shots at fishing boats of neighboring countries. Furthermore, in recent years, there has been growing friction between China and its neighboring countries over the South China Sea, as illustrated by protests by Vietnam and the Philippines against China’s activities in these waters.

A Chinese Defense Ministry spokesman stated in response to the Japanese white paper’s claims of repeated Chinese intrusion into Japanese territorial waters and airspace and Chinese use of aggressive tactics to expand its maritime power, that the Chinese military was “strongly discontented and resolutely against” the Japanese accusations. Further, the Chinese Defense Ministry said that Japan was undermining regional stability with its claims to the disputed Diaoyu/Senkaku Islands – an unusually strong rebuttal for the PRC, which rarely mentions other countries by name.⁶⁵⁵

The potential for conflict in the South China Sea is significant. As Bonnie S. Glaser of CSIS noted in 2012,⁶⁵⁶

The risk of conflict in the South China Sea is significant. China, Taiwan, Vietnam, Malaysia, Brunei, and the Philippines have competing territorial and jurisdictional claims, particularly over rights to exploit the region’s possibly extensive reserves of oil and gas. Freedom of navigation in the region is also a contentious issue, especially between the United States and China over the right of U.S. military vessels to operate in China’s two-hundred-mile exclusive economic zone (EEZ). These tensions are shaping—and being shaped by—rising apprehensions about the growth of China’s military power and its regional intentions. China has embarked on a substantial modernization of its maritime paramilitary forces as well as naval capabilities to enforce its sovereignty and jurisdiction claims by force if necessary. At the same time, it is developing capabilities that would put U.S. forces in the region at risk in a conflict, thus potentially denying access to the U.S. Navy in the western Pacific.

Furthermore, as one CSIS briefing pointed out, it appears that China has recently been increasing its sovereignty claims over territory and waters within and beyond the nine-dash lines:⁶⁵⁷

China’s policy of strategic ambiguity, as it has been euphemistically called, serves its purposes well. It allows China the flexibility to interpret its position to serve the audience at hand. This is why the Ministry of Foreign Affairs was able to issue its well-publicized statement in February 2012 stating that no nation claims sovereignty over the entire South China Sea and that the dispute is only about the “islands and adjacent

waters.” This raised hopes in the United States and among the other Asian claimants that China was backing away from the 9-dash lines claim and moving to bring its claims in line with international law.

That, however, has clearly not been the case. This year’s tensions in the sea started with a two-month standoff between Chinese and Philippine ships at Scarborough Shoal. That confrontation, despite pronouncements to the contrary from Beijing, served as an example of a creeping evolution in Beijing’s claims. For years the Chinese territorial claims in the South China Sea extended only to the Spratlys (Nansha, or “South Banks”) and Paracels (Xisha, or “West Banks”). Any claim to other features, like Scarborough Shoal, was only implied in so far as they fell within the ambiguous 9-dash lines. Then China extended its claim to the entirely submerged Macclesfield Bank via the imaginary Zhongsha, or “Middle Banks,” despite there being no way under international law to claim title over a submerged feature as if it were an island. Further, in recent years, as Beijing has tried to move beyond an overreliance on the indefensible 9-dash lines, Scarborough Shoal has been incorporated as part of Zhongsha. The fact that it lies hundreds of miles from Macclesfield Bank or that it appears on none of the historical documents China puts forth to prove its title to the Spratlys and Paracels seemingly does not matter.

Beijing showed similar disregard for the policy put forth in its February Ministry of Foreign Affairs statement when in early May it reinstated its annual unilateral fishing ban for all of the South China Sea above the 12th parallel. Such a ban would be possible only if China were claiming all the waters within the 9-dash lines, not only its “islands and adjacent waters.” Then in late June, the China National Offshore Oil Corporation (CNOOC) fired a shot across Vietnam’s bow by announcing the company would open nine oil and gas blocks in the South China Sea to foreign bids. The catch was that all nine blocks lie within the 200-nautical-mile exclusive economic zone (EEZ) of Vietnam, and many in fact overlap with existing blocks already leased by Vietnam, including those committed to Exxon-Mobil. More importantly, CNOOC’s blocks are not defensible under a claim to the “islands and adjacent waters” of the South China Sea because there is no island within 200 nautical miles (the maximum allowable EEZ) of all the blocks.

These tensions have reinforced China’s generally negative view of the US ‘pivot’ to Asia. For example, one Chinese newspaper called for the US “to rein in its unruly allies in the region including Japan and the Philippines,” in direct reference to the recent island disputes. Further, because the US has a “responsibility for sowing the seeds of conflict,” it “shoulders certain responsibilities for the chronic disputes.”⁶⁵⁸

A report by Ronald O’Rourke of the Congressional Research Service also addressed some of these issues in a July 2013 report:⁶⁵⁹

China’s view that it has the legal right to regulate foreign military activities in its EEZ appears to be at the heart of multiple incidents between Chinese and U.S. ships and aircraft in international waters and airspace, including incidents in March 2001, September 2002, March 2009, and May 2009 in which Chinese ships and aircraft confronted and harassed the U.S. naval ships *Bowditch*, *Impeccable*, and *Victorious* as they were conducting survey and ocean surveillance operations in China’s EEZ, and an incident on April 1, 2001, in which a Chinese fighter collided with a U.S. Navy EP-3 electronic surveillance aircraft flying in international airspace about 65 miles southeast of China’s Hainan Island in the South China Sea, forcing the EP-3 to make an emergency landing on Hainan island.

The issue of whether China has the right under UNCLOS to regulate foreign military activities in its EEZ is related to, but ultimately separate from, the issue of maritime territorial disputes in the SCS and ECS. The two issues are related because China can claim EEZs from inhabitable islands over which it has sovereignty, so accepting China’s claims to islands in the SCS or ECS could permit China to expand the EEZ zone within which China claims a right to regulate foreign military activities.

The EEZ issue is ultimately separate from the territorial disputes issue because even if all the territorial disputes in the SCS and ECS were resolved, and none of China’s claims in the SCS and ECS were accepted, China could continue to apply its concept of its EEZ rights to the EEZ that it unequivocally derives from its mainland coast—and it is in this unequivocal Chinese EEZ that most of the past U.S.-Chinese incidents at sea have occurred.

If China's position on whether coastal states have a right under UNCLOS to regulate the activities of foreign military forces in their EEZs were to gain greater international acceptance under international law, it could substantially affect U.S. naval operations not only in the SCS and ECS, but around the world, which in turn could substantially affect the ability of the United States to use its military forces to defend U.S. interests overseas. Significant portions of the world's oceans are claimable as EEZs, including high-priority U.S. Navy operating areas in the Western Pacific, the Persian Gulf, and the Mediterranean Sea. The legal right of U.S. naval forces to operate freely in EEZ waters is important to their ability to perform many of their missions around the world, because many of those missions are aimed at influencing events ashore, and having to conduct operations from more than 200 miles offshore would reduce the inland reach and responsiveness of ship-based sensors, aircraft, and missiles, and make it more difficult to transport Marines and their equipment from ship to shore. Restrictions on the ability of U.S. naval forces to operate in EEZ waters could potentially require a change in U.S. military strategy or U.S. foreign policy goals.

The Impact of Shifts in US and Chinese Strategy and Forces in the IOR

While China may be focusing on the Pacific, the previous analysis of the Southeast Asia Subregion has shown that many of China's neighbors – including several key states in the Eastern IOR -- have become increasingly concerned about China's ambitions. As the previous chapter has shown, this aided the US by making such states more willing to be its strategic partners.

The Asian IOR States

According to the July 2013 Pew Global Attitudes poll, of the Asia-Pacific nations surveyed (Japan, Philippines, South Korea, Australia, China, Indonesia, Malaysia, and Pakistan), 64% view the US favorably and 58% view China favorably. Japan is the outlier. While 69% of Japanese citizens see the US favorably, only 5% see China favorably.⁶⁶⁰

At the same time, the reaction of Southeast Asian states has not been uniform, and even formal treaty allies of the US such as the Philippines and Thailand have had mixed reactions. There is significant domestic political opposition in the Philippines to expanded basing rights for the US. It was reported in mid-July 2013 that the US and the Philippines were in the midst of negotiations for increased positioning of US military equipment and personnel rotation into the country, though the issue of re-establishing US bases was being side-stepped.⁶⁶¹ Thailand has recently increased relations with China – including in defense-related areas. Singapore has increased its quasi-basing facilities available to the US Navy but refuses to give up its neutrality and be drawn into any sort of alliance.⁶⁶²

Other Southeast Asian states have been even more cautious; Vietnam, despite territorial disputes with China, has continued strict rationing of US Navy port calls in order to not undermine its relations with China. Indonesia and Malaysia must both be careful not to alienate domestic constituencies by increasing relations with the US, while Malaysia has kept a positive attitude towards China – its most important trading partner – and has recently increased defense and security ties. As a 2012 IISS report noted,⁶⁶³

Policymakers throughout Southeast Asia and the wider Asia-Pacific are acutely conscious of and concerned about the implications for their countries' foreign and security policy orientations of the changing regional distribution of power, particularly in terms of China's growing power and assertiveness. At the same time, though, remaining on good terms with Beijing is important for their economic health, and most Southeast Asian states (the Philippines being the exception) have been unwilling to jeopardize their trade and investment links with China.

But Southeast Asian governments also harbor substantial doubts over the durability of America's role, and have not been easily convinced by the rhetoric of the US rebalance. They understand well that there is a significant public-relations element in pronouncements about the long-term viability of the US security role. Southeast Asians have seen a series of outside powers come and go. They recognize that, as the US reduces its forces in Europe and withdraws from [Afghanistan](#), the Asia-Pacific will naturally be the main defence focus for America. But they also know that Washington's longer-term regional commitment could become hostage to fiscal realities and to changes of administration. In these circumstances, most Southeast Asian states are keeping their strategic options open.

Meanwhile, India appears to welcome America's strengthened regional presence as a counterbalance to China and as a chance for India to assert its strategic role in the region. Japan, especially in the context of territorial disputes over islands, has also welcomed increased US presence.

The Changing Limits to the Chinese role in the IOR

One needs to be careful not to underestimate the gaps between China's future strategic goals and its current military capabilities. In spite of the growing Chinese rate of military modernization, it may well be a decade before China can seriously compete with the combination of USCENTCOM and USPACOM forces that the US can deploy in the IOR. In the near to mid-term, China is likely to focus on the Pacific. It is only likely to try to play a major role in the IOR if it feels it faces a major threat to its energy exports or that it faces a major threat to its maritime commerce in the Strait of Malacca.

In the near term, China's role in the Western IOR seems most likely to remain limited to roles like being part of the antipiracy force off the coast of Somalia and the Gulf of Aden, growing numbers of port visits, and a focus on expanding its ties to Pakistan and Myanmar. China may, however, see the IOR as another area where will be ready to play a major naval role in the Strait of Malacca and challenge India much earlier – although nothing about the course of Indian and Chinese clashes in their border area to date indicates that China has great reason to be concerned about Indian performance in land-air warfare.

At the same time, China is playing an active commercial role in the IOR that reduces its strategic vulnerability to an interruption of traffic through the Strait. As the EIA reports, this is part of a Chinese strategy that goes well beyond the IOR:⁶⁶⁴

China has actively sought to improve the integration of the country's domestic oil pipeline network, as well as to establish international oil pipeline connections with neighboring countries to diversify oil import routes. According to CNPC, China had about 14,658 miles of total crude oil pipelines (67% managed by CNPC and the remaining 33% by other NOCs) and 11,795 miles of oil products pipelines in its domestic network at the end of 2012.

The bulk of China's oil pipeline infrastructure serves the more industrialized coastal markets and the northeastern region. However, several long-distance pipeline links have been built or are under construction to deliver oil supplies from the northwestern region or from downstream refining centers to more remote markets in the central and southwestern regions. China inaugurated its first transnational oil pipeline in May 2006, when it began receiving Kazakh and Russian oil from a pipeline originating in Kazakhstan. The 240,000-bbl/d pipeline spans 1,384 miles, connecting Atyrau in western [Kazakhstan](#) with Alashankou on the Chinese border in Xinjiang.

The pipeline was developed by the Sino-Kazakh Pipeline Company, a joint venture between CNPC and Kazakhstan's KazMunaiGaz (KMG) and brings oil from the oilfields in central Kazakhstan to China. Expansions are underway on the Atasu-Alashankou section to nearly double capacity to 400,000 bbl/d in 2014.

The two countries are considering a parallel second pipeline to supply crude oil from Kazakhstan's oilfields in the [Caspian Sea](#) region including the new Kashagan field. Russia's new East Siberian oil fields have become another source for Chinese crude oil imports. Russian state-owned oil giant Transneft constructed the Eastern Siberia-Pacific Ocean Pipeline (ESPO), extending 3,000 miles from the Russian city of Taishet to the Pacific Coast in two stages. The first stage of the project included the construction of a 600,000-bbl/d pipeline from Taishet to Skovorodino in Russia. CNPC also built a 597-mile pipeline linking the spur with the Daqing oil field in the Northeast.

The pipeline spur to China became operational in January 2011, and delivers up to 300,000 bbl/d of Russian oil to the Chinese border under an original 20-year supply contract between the two countries. The second stage of ESPO came online at the end of 2012 and delivers oil to the Russian Pacific port of Kozmino. This port provides Russia the option to send more crude oil to China via a sea route. Russia anticipates expanding the ESPO transmission capacity to Skovorodino to 1.6 million bbl/d by 2018 and augmenting contracted supply to China through this route.

In the meantime, Rosneft agreed to send 140,000 bbl/d of western Siberian oil to China through the expanded pipeline from Kazakhstan to western China starting in 2014 until the ESPO spur to China is brought to full capacity. This agreement allows Russia a western outlet for sending its contracted oil to China.

China also revived its plans to construct an oil import pipeline from Myanmar through an agreement signed in March 2009. Myanmar is not a significant oil producer, so the pipeline is envisioned as an alternative transport route for crude oil from the Middle East that would bypass the potential choke point of the [Strait of Malacca](#), which approximately 80% of China's oil imports traverse based on crude oil import sources and routes. CNPC plans to direct crude oil from the pipeline to serve the proposed 200,000 bbl/d-Yunnan/Anning refinery. Maximum capacity for the pipeline is slated to be 440,000 bbl/d when it comes online in 2014.

As is noted in the last paragraph of the EIA analysis. China is now completing two Sino-Burma pipelines in 2013 that bypass the Strait of Malacca. An oil and natural gas pipelines run in parallel. Wikipedia reports that they start near Kyaukphyu, run through Mandalay, Lashio, and Muse in Myanmar before entering China at the border city of Ruili in Yunnan province. The oil pipeline, which will eventually terminates in Kunming, capital of Yunnan province, will be 771 kilometers (479 mi) long.

The natural gas pipeline will extend further from Kunming to Guizhou and Guangxi in China, running a total of 2,806 kilometers (1,700 mi). The oil pipeline will have a capacity of 12 million tons of crude oil per year. It would diversify China's crude oil imports routes from the Middle East and Africa, and avoid traffic through the Strait of Malacca. Oil storage tanks will be built on an island near the port of Kyaukphyu. For oil processing China will build refineries in Chongqing, Sichuan, and in Yunnan. The gas pipeline would allow delivery of natural gas from Burma's offshore fields to China with an expected annual capacity of up to 12 Bcm of natural gas.⁶⁶⁵

China may find other ways to reduce its vulnerabilities in the IOR. In the longer-term, China may find ways to bypass the IOR in obtaining energy exports from the Gulf, and increase its access to energy exports from Central Asia. There are reports that Pakistan met with Chinese officials to discuss the possibility of extending an Iranian gas pipeline to China rather than India in August of 2013.⁶⁶⁶ China has also at least examined options for a pipeline from the Pakistani port at Gwadar to Gligit-Balistan and the Chinese border – an area that Pakistan disputes with India. These are now concepts not plans, and there are many problems in cost, terrain, and security.

According to some reports, China and Pakistan has discussed possible Chinese operation of the Pakistani port at Gwadar – a major facility near Iran and relatively near to the Strait of Hormuz that China has helped modernize.^{667/668} A Pakistani analyst – Ghulam Ali, has noted that other analysts argue the port could become China's naval base in the Indian Ocean and enable Beijing to monitor Indian and US naval activities, and the port has also been called the western-most link

in China's 'string of pearls' strategy.⁶⁶⁹ He also notes, however, that the port is underdeveloped, and that,

Unlike Islamabad's tall claims about the port's geo-economic significance, Beijing has taken a more cautious and realistic approach. China remains sceptical of the port's profitability. Both in 2001, when it agreed to finance the first phase of the port, and in 2013, when it took over administrative control of the port, Pakistan had to drag Beijing into the project.

Gwadar is not the only option for the Chinese in the Indian Ocean. It is not even the most viable option. Beijing has developed Hambantota port in Sri Lanka and built a container port facility in Chittagong in Bangladesh. In Myanmar, Beijing has built roads, dams and pipelines, and is looking to the ports of Kyaukpyu and Sittwe, regardless of the fact that the latter is being built by India. Beijing intends to lay a pipeline from Kyaukpyu to Yunnan province. Chinese oil ships from the Middle East and Africa will cross the Bay of Bengal and unload at these ports, allowing oil to be piped to Yunnan. China appears more optimistic about the future of an Arakana–Yunnan pipeline than the Gwadar–Xinjiang pipeline because it considers Myanmar capable of protecting its assets.

Due to its strategic location, and because the strong military ties between China and Pakistan, Gwadar port has received excessive attention from the very beginning. Despite its being over a decade since China started construction of the first phase, no military-related activity has ever been observed there. If China intended to use a Pakistani port for naval purposes, Karachi, with its established military infrastructure, is an alternative that is available although Karachi has the strategic disadvantage of proximity to India.

It is likely that China will develop the port quickly by making a bigger investment than the PSA, but its current interests appear commercial, aimed at securing its energy supplies. Moreover, Gwadar is just one of several options for Beijing, and due to the volatile security situation in the surrounding region it may not be China's best bet. Gwadar is far from becoming a Chinese economic hub, let alone a security asset.

Three key uncertainties will help shape this future. The first is the US willingness to support and fully implement the new strategy the US announced in early 2012, and keep strong forces in the Gulf and Pacific, and create stronger partnerships with regional powers. Anything approaching major cuts in US forces or a US decision not to keep securing the Gulf and Pacific would create a power vacuum China would probably try to fill – and could fill much earlier if the US were absent.

The second is that Gulf and other IOR powers might welcome and support a Chinese presence in the Gulf and key ports in countries Pakistan and Burma as a counterbalance to the US or a way of serving their own interests. The Gulf states cannot ignore the extent to which Asian demand is rising as US demand for energy imports is dropping, and their tensions with the US over other issues may lead them to seek some kind of Chinese military role.

The third and opposite trend is that Chinese faces serious economic challenges from an aging population, its slow shift to creating effective domestic demand, and competition from other states with lower labor costs. China faces increasing challenges of its own and it may not be able to sustain either its present economic growth or its military ambitions.

It will take time to see how these uncertainties affect the relative role of the US and China. It is also at least possible that both will find a way to cooperate in securing their interests in the IOR. Such cooperation would mean less cost and less risk for both powers, but their other goals and tensions seem more likely to keep pushing them towards competition.

APPENDIX A: ADDITIONAL RISK ASSESSMENT CHARTS

The following charts provide additional data on the performance and ranking of countries in the IOR.

- Labor Force as % of Population versus Unemployment Rate as a % of Labor
- Labor Force as % of Population versus Labor Market Efficiency
- Corruption Control Rank versus Critical Infrastructure Rank
- Political Stability & Absence of Violence, versus WEF Global Competitiveness Index
- External Debt to GDP versus Exports of Goods and Services % of GDP

Labor Force as % of Population versus Unemployment Rate as a % of Labor:

The International Labor Organization (ILO) in their “Global Employment Trends 2014” states:

Global unemployment increased by 5 million people in 2013...

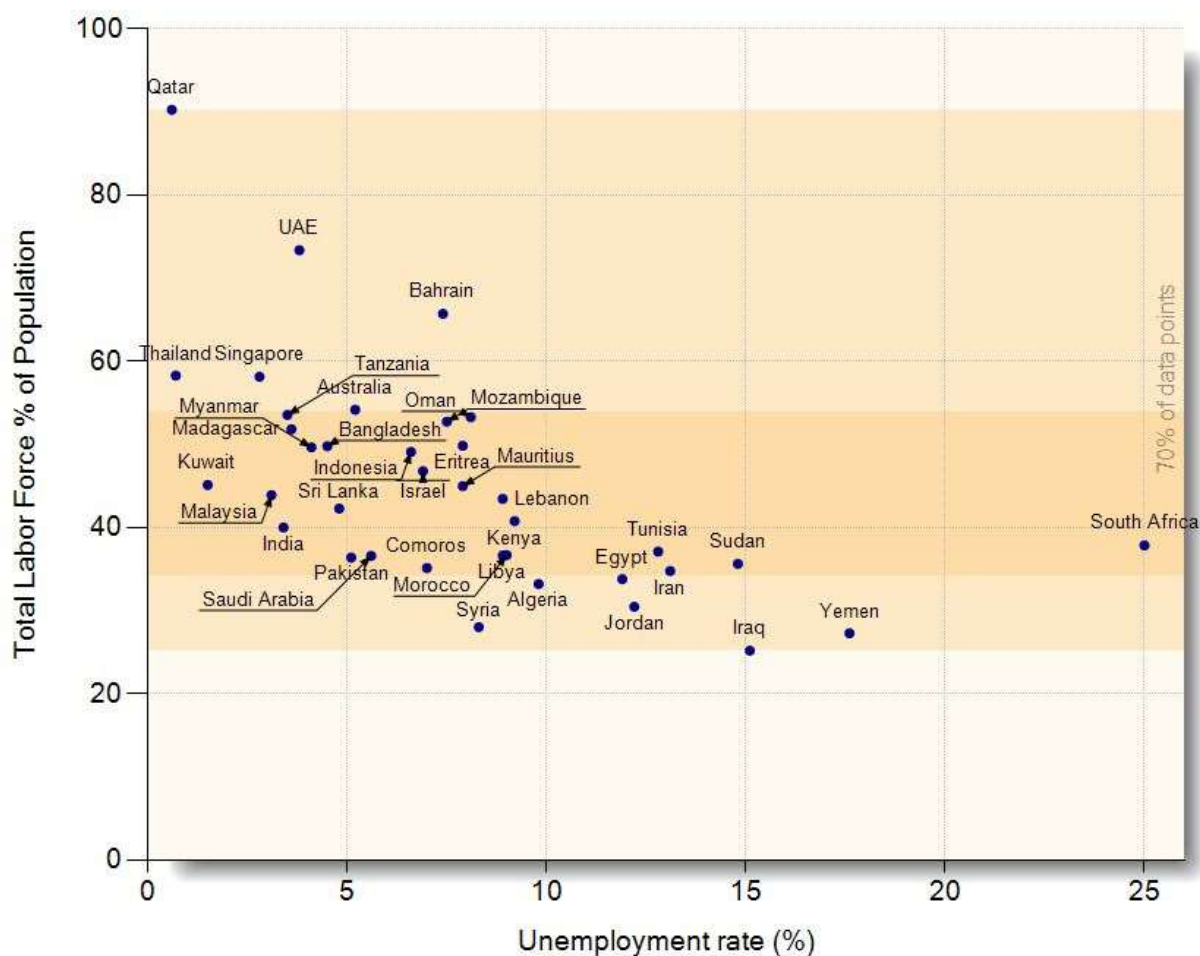
The uneven economic recovery and successive downward revisions in economic growth projections have had an impact on the global employment situation. Almost 202 million people were unemployed in 2013 around the world, an increase of almost 5 million compared with the year before. This reflects the fact that employment is not expanding sufficiently fast to keep up with the growing labor force.

The bulk of the increase in global unemployment is in the East Asia and South Asia regions, which together represent more than 45 per cent of additional jobseekers, followed by Sub-Saharan Africa and Europe. By contrast, Latin America added fewer than 50,000 additional unemployed to the global number – or around 1 per cent of the total increase in unemployment in 2013.

A well performing economy has a High Labor Force as a percent of the population, and a low Unemployment as a percent of the Labor Force. **Figure A.1** displays these indicators for the IOR on a country level.

- The five best performing countries (Low Risk) within the IOR that have a total Labor Force as a percent of population, close to 60% and above are: Qatar, UAE, Bahrain, Thailand and Singapore. Two of these countries – Qatar and the UAE -- heavily subsidize state employment for citizens and rely heavily on foreign labor, and risk is offset more by their ability to use oil wealth to subsidize labor than real economic efficiency. Bahrain imports low cost labor to some extent at the cost of jobs for its citizens.
- The six lowest performing countries (High Risk) are: Iraq, Yemen, Jordan, Syria, Egypt, and Iran.
- In terms of unemployment, the five countries that have the lowest unemployment rate (Low Risk) of the Labor Force are: Qatar, Thailand, Kuwait, Singapore, and Malaysia. Two of these countries – Qatar and Kuwait -- heavily subsidize state employment for citizens and rely heavily on foreign labor, and risk is offset more by their ability to use oil wealth to subsidize labor than real economic efficiency.
- The highest unemployment rate (High Risk) countries are: South Africa, Yemen, Iraq, Sudan and Iran.

Figure A.1: Country Labor Force Participation Rate (% of population) versus Unemployment Rate (5) of Labor Force.



Source: International Labor Organization. Key Indicators of the Labour Market (KILM)

A multi-functional research tool of the ILO consisting of country-level data on 18 key indicators of the labor market from 1980 to the latest available year. http://www.ilo.org/empelm/what/WCMS_114240/lang--en/index.htm

The ILO estimates that job creation is not keeping up with population increase, even if measures in direct unemployment terms – and disguised unemployment and undercounts of those seeking jobs are ignored. If current trends continue, global unemployment is set to worsen further, albeit gradually rise by a further 13 million by 2018, reaching more than 215 million jobseekers by 2018. During this period, around 40 million net new jobs would be created every year, which is less than the 42.6 million people that are expected to enter the labor market every year. The global unemployment rate would remain broadly constant during the next five years, at half a percentage point higher than before the crisis.

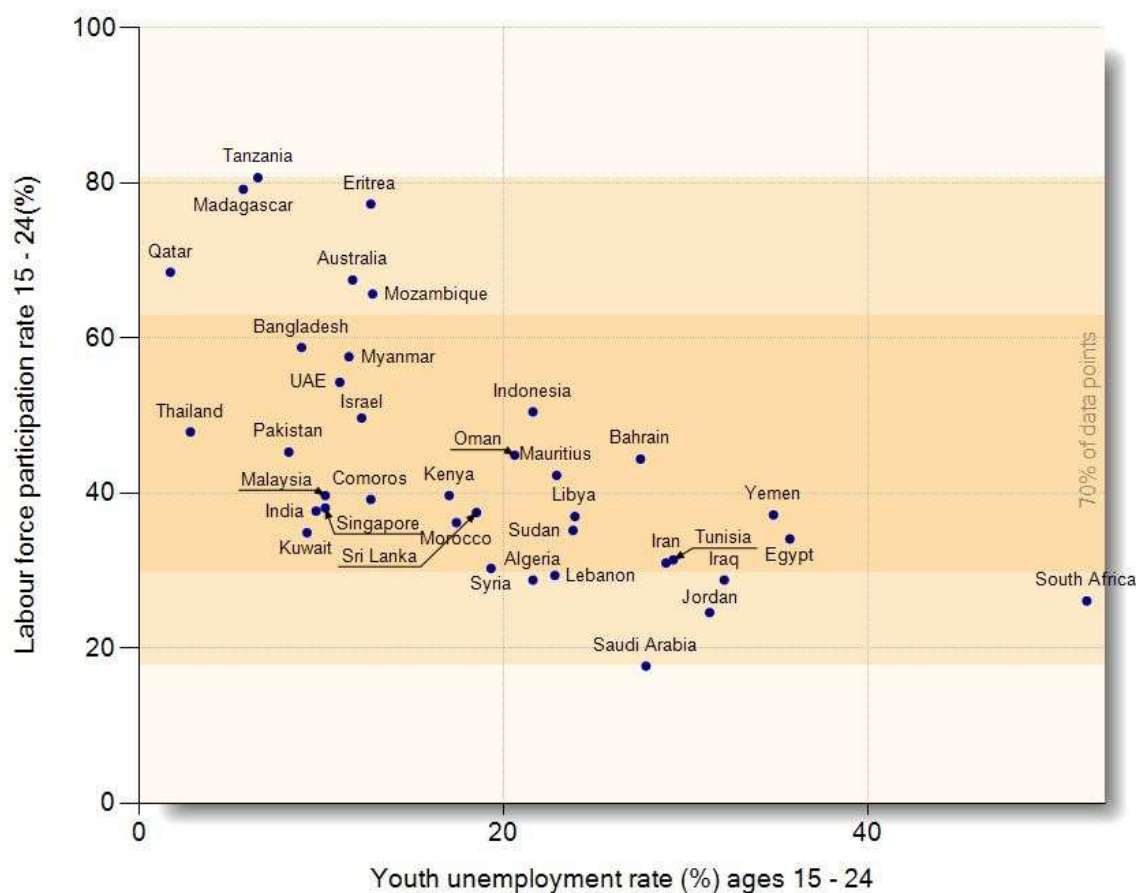
The International Labor Organization (ILO) in their “Global Employment Trends 2014” further states that:

.. young people continue to be particularly affected by the weak and uneven recovery. It is estimated that some 74.5 million young people – aged 15–24 – were unemployed in 2013; that is almost 1 million more than in the year before. The global youth unemployment rate has reached 13.1 per cent, which is almost three times as high as the adult unemployment rate. Indeed, the youth-to-adult unemployment ratio has reached a historical peak. It is particularly high in the Middle East and North Africa, as well as in parts of Latin America and the Caribbean and Southern Europe.

Figure A.2 shows the ILO estimate by IOR county. It should be noted that these figures do not take account of disguised unemployment, undercount of those seeking work, subsidized state sectors, and the impact of importing foreign labor. This severely understates the economic problems involved in a number of poorer states and the Southern Gulf States.

The countries that have the highest unemployment rate (High Risk) in the age group 15 – 24, are: South Africa, Egypt, Yemen, Iraq, Jordan, and Iran

Figure A.2: Country Labor Force Participation (Ages 15 – 24) versus Youth Unemployment Rate, ages 15-24.



(Source: International Labor Organization. Key Indicators of the Labour Market (KILM))

A multi-functional research tool of the ILO consisting of country-level data on 18 key indicators of the labor market from 1980 to the latest available year. http://www.ilo.org/empelm/what/WCMS_114240/lang--en/index.htm

Labor Force as % of Population versus Labor Market Efficiency:

The World Economic Forum (WEF) defines Labor Market Efficiency to be composed of by the following areas:

- Cooperation in Labor Employee Relations
- Flexibility of wage determination
- Hiring and Firing Practices
- Redundancy Costs
- Pay and Productivity
- Reliance on Professional Management
- Brain Drain
- Female Participation in Labor Force

A well performing economy is one with High Labor Force as a percent of the population, and with a low Labor Market Efficiency Rank. **Figure A.3** displays these indicators on a country level, whereas **Figure A.4** displays the indicators on a Subregional level.

Once again, however, these metrics tacitly assume an efficient market economy. They do not take account of disguised unemployment and low productivity in poor developing countries, subsidized state sectors, foreign labor policies that focus on low cost labor, and productivity gain.

The IMF World Economic and Financial Surveys. Regional Economic Outlook. Middle East and Central Asia. November 2013 reported as follows on Competitiveness and Labor Productivity, and raises some of these issues:

Competitiveness and Labor Productivity in MENAP (Middle East North Africa, Afghanistan and Pakistan) and CCA (Central Asia):

Low labor productivity in MENAP oil importers and CCA countries is weighing on their competitiveness and, ultimately, on their growth prospects. In the GCC, declining labor productivity, albeit from high levels, is also raising concerns. Policymakers need to address deep-rooted challenges in several areas to boost the region's labor productivity:

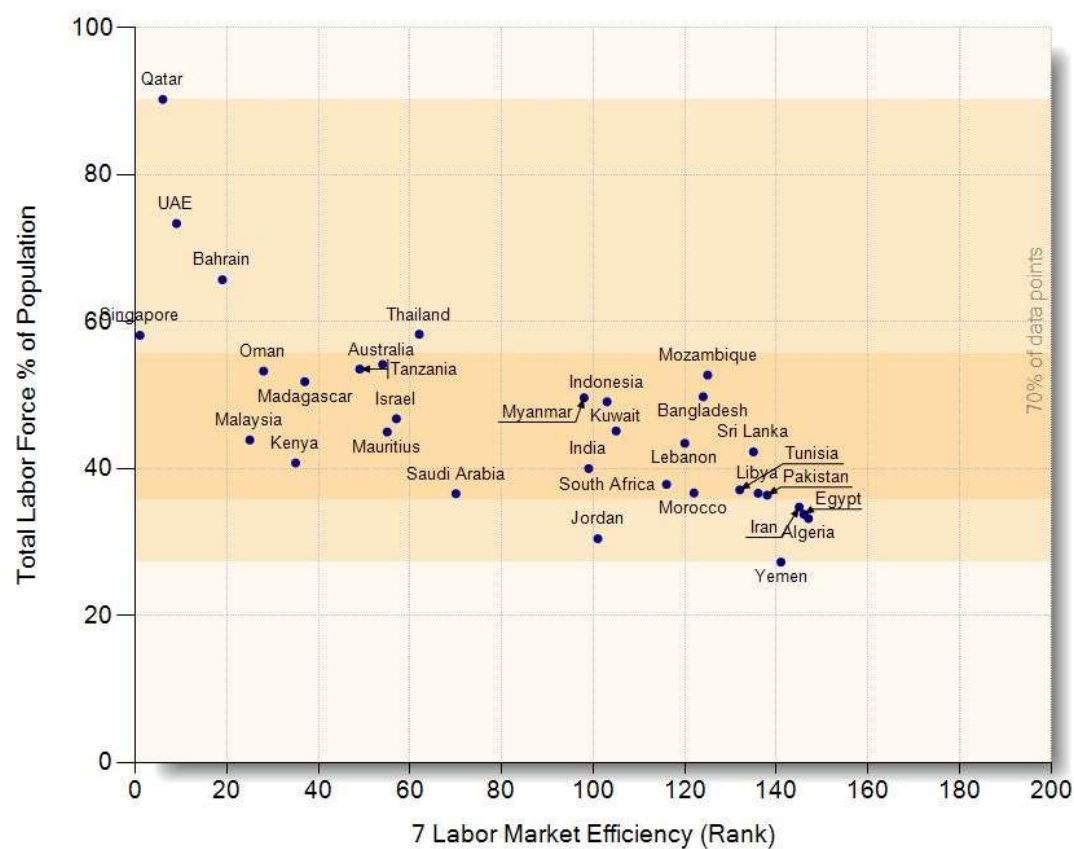
Infrastructure. Public investment in improving the quality and effectiveness of infrastructure would enhance labor productivity by facilitating the movement of workers and raising their production capability. Efficient movement of goods and services to markets and dependable electricity supplies and communication networks are necessary for an unimpeded production environment.

Higher education and training. More and better-quality secondary and tertiary education, as well as vocational and on-the-job training, would enhance workers' abilities to perform complex tasks and to adapt rapidly as companies move up the value chain beyond simple production processes and products. Injaz, a regional partnership between ministries of education and the private sector, sets a good example by arranging for business leaders to teach marketable skills to high school and college students.

Labor market efficiency. Legislative reforms that facilitate the flexibility of workers to shift from one economic activity to another, promote meritocracy, and allow for wage flexibility while maintaining adequate social protection would raise the incentives for workers to give their best efforts in their jobs.

Financial market development. Making capital more readily available for private sector investment, from such sources as loans from a sound banking sector, well-regulated securities exchanges, venture capital, and other financial products, enlarges the production sophistication and capacity of firms and, consequently, labor productivity.

Figure A.3: Country Labor Force Participation Rate (% of population) versus Labor Market Efficiency (Rank)



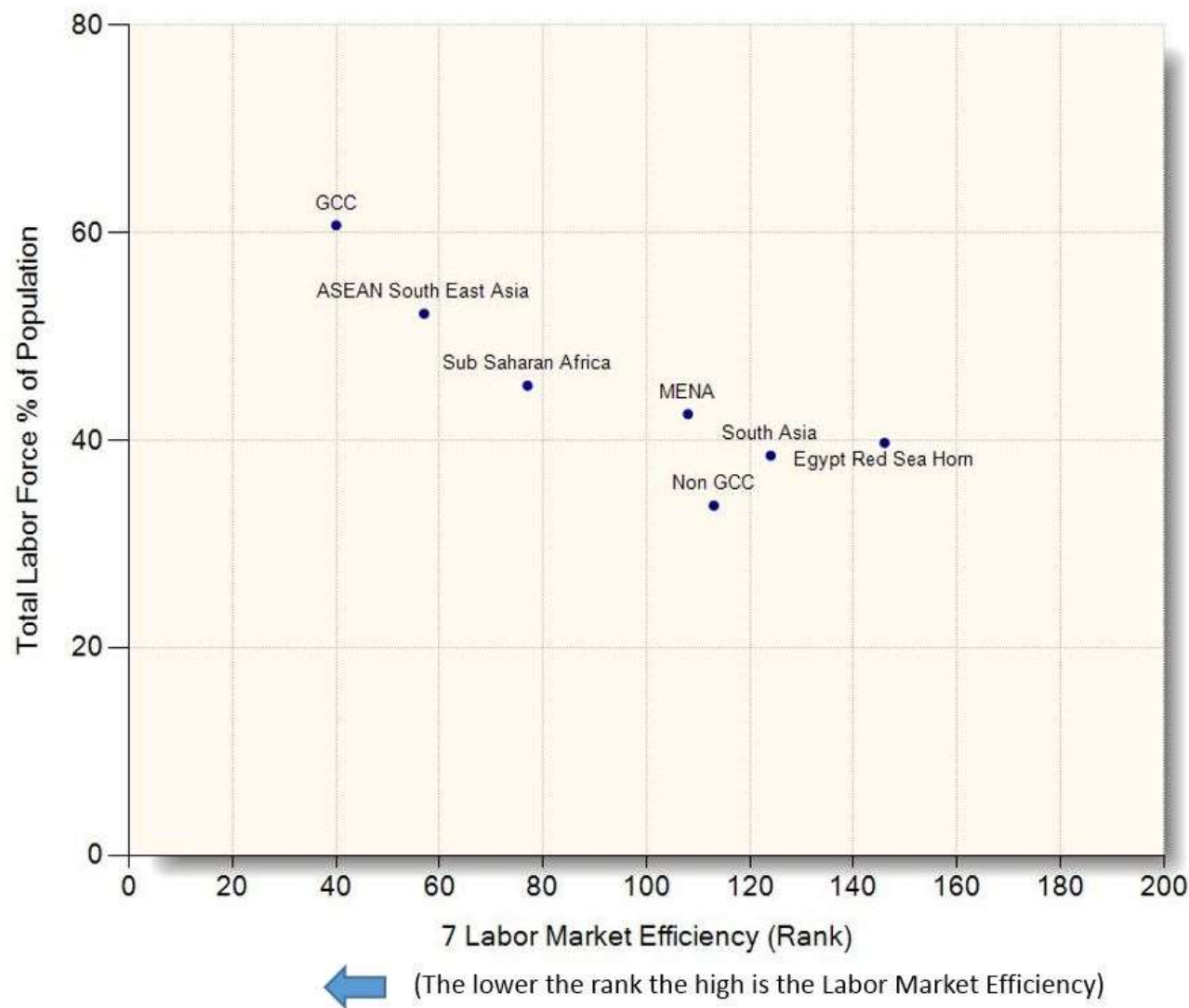
(Lower the Rank the Higher the Labor Market Efficiency)

(Source: Labor Market Efficiency, WEF Global Competitiveness Report 2014-2013)

WEF Labor Market Efficiency Country Level

Low to Moderate Risk	Medium Risk	High Risk	Very High/Critical Risk
Rank (1-70)	Rank (70 -110)	Rank (110-150)	Rank (150-200)
Singapore	Saudi Arabia	South Africa	
Qatar	Myanmar	Bangladesh	
UAE	India	Mozambique	
Bahrain	Jordan	Sri Lanka	
Malaysia	Indonesia	Pakistan	
Oman	Kuwait	yemen	
Kenya		Iran	
Madagascar		Egypt	
Tanzania			
Australia			
Mauritius			
Israel			
Thailand			

Figure A.4: Sub-regional Labor Force Participation Rate (% of population) versus Labor Market Efficiency



WEF Labor Market Efficiency			
Low to Moderate Risk Rank (1-70)	Medium Risk Rank (70 -110)	High Risk Rank (110-150)	Very High/Critical Risk Rank (150-200)
GCC ASEAN South East Asia	Sub-Saharan Africa	Non-GCC South Asia Egypt Red Sea Horn	

Corruption Control Rank versus Critical Infrastructure Rank:

The study focuses on the World Bank ranking of governance which seems to focus on real world categories that reflect practical political and economic realities. There are other measures.

The IMF outlines how good governance is key to economic development and success:

(source: <http://www.imf.org/external/np/exr/facts/gov.htm>)

Governance is a broad concept covering all aspects of the way a country is governed, including its economic policies and regulatory framework, as well as adherence to the rule of law. Corruption--the abuse of public authority or trust for private benefit--is closely linked: a poor governance environment offers greater incentives and more opportunities for corruption. Corruption undermines the public's trust in its government. It also threatens market integrity, distorts competition, and endangers economic development.

The World Economic Forum puts the following as a measure of the Quality of overall Critical Infrastructure:

- Quality of Roads
- Quality of Railroad Infrastructure
- Quality of Air Transport Infrastructure
- Available Airline seat kilometers
- Quality of Electrical supply
- Mobile Telephone Subscriptions per 100
- Fixed Telephone lines per 100

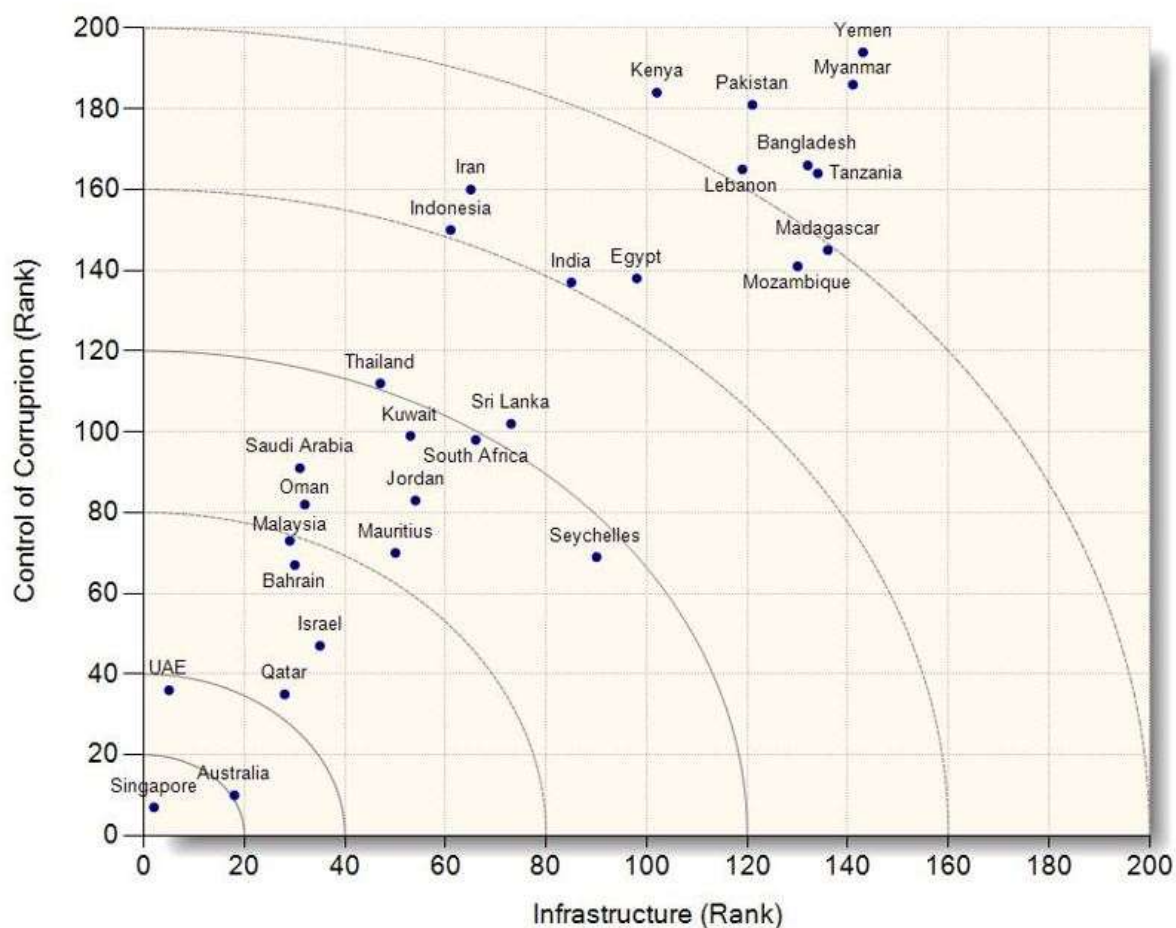
According to the Corruption Perceptions Index 2012, published by Transparency International

- 70% of countries score less than 50 out of 100. 43 is the average score worldwide.
- Asia Pacific: 68% score below 50. Top New Zealand, Bottom Afghanistan, North Korea.
- Middle East & North Africa, 78% score below 50. Top: Qatar, UAE. Bottom: Iraq.
- Sub-Saharan Africa: 90% score below 50, Top Botswana. Bottom: Somalia.

These measurements are highly judgmental, but do show enough common correlation to provide rough indicators of risk.

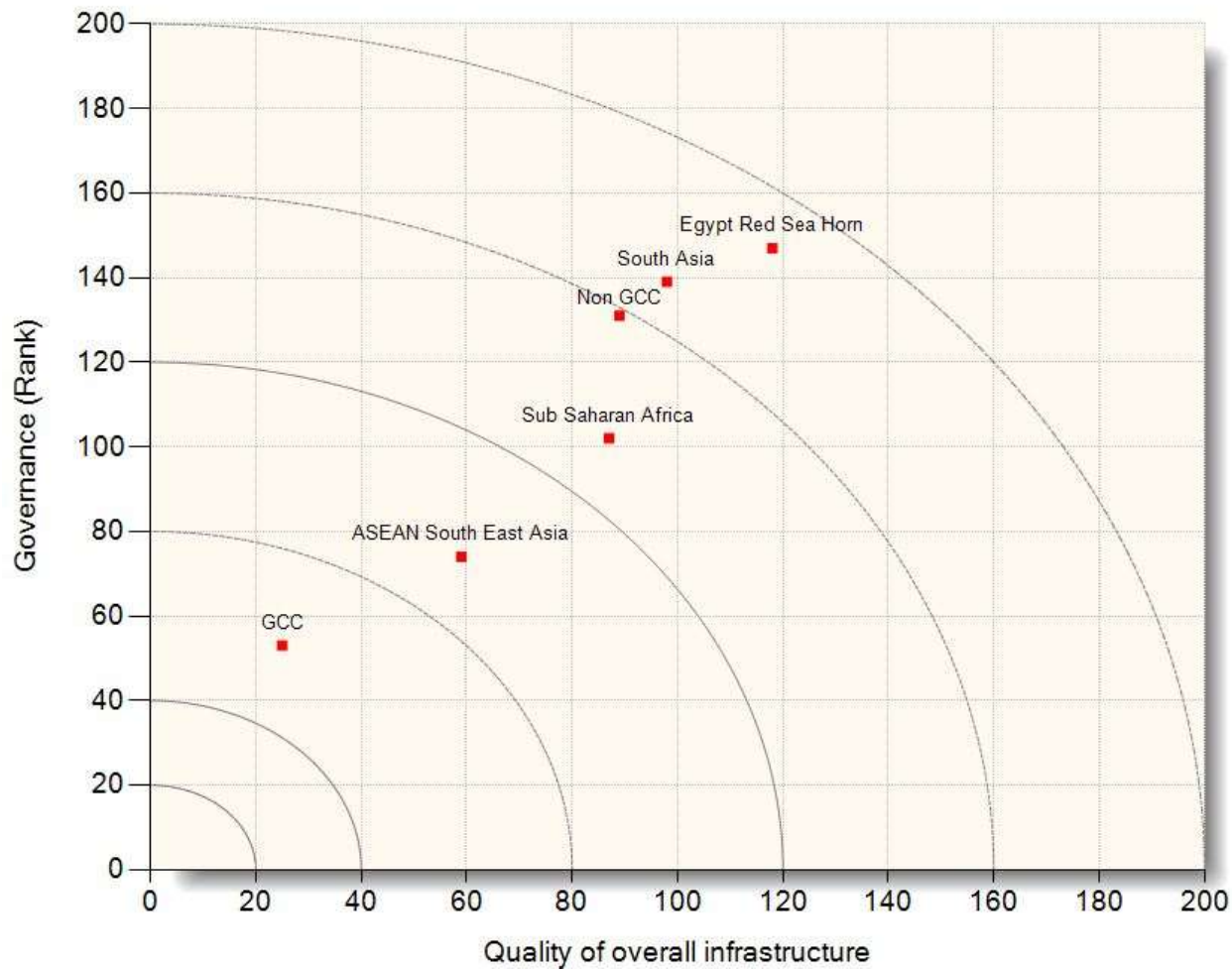
Figure A.5 displays these indicators on a country level

Figure A.6 displays these indicators on a Subregional level

Figure A.5: Country Corruption Rank versus Critical Infrastructure

Source: WEF Global Competitiveness Report 2014-2013

Figure A.6: Subregional Corruption Rank versus Critical Infrastructure



Low to Moderate Risk	Medium Risk	High Risk	Very High/Critical Risk
Rank (1-70)	Rank (70 -110)	Rank (110-150)	Rank (150-200)
GCC	ASEAN South East Asia Sub-Sahara Africa	Non-GCC Egypt Red Sea Horn South Asia	

Political Stability & Absence of Violence, versus WEF Global Competitiveness Index:

Political Stability and Absence of Violence are particularly important indicators and are discussed in some depth in the country sections of the IOR net assessment. There is some correlation between this index and that for global competitiveness:

The Worldwide Governance Indicator is defined as follows:

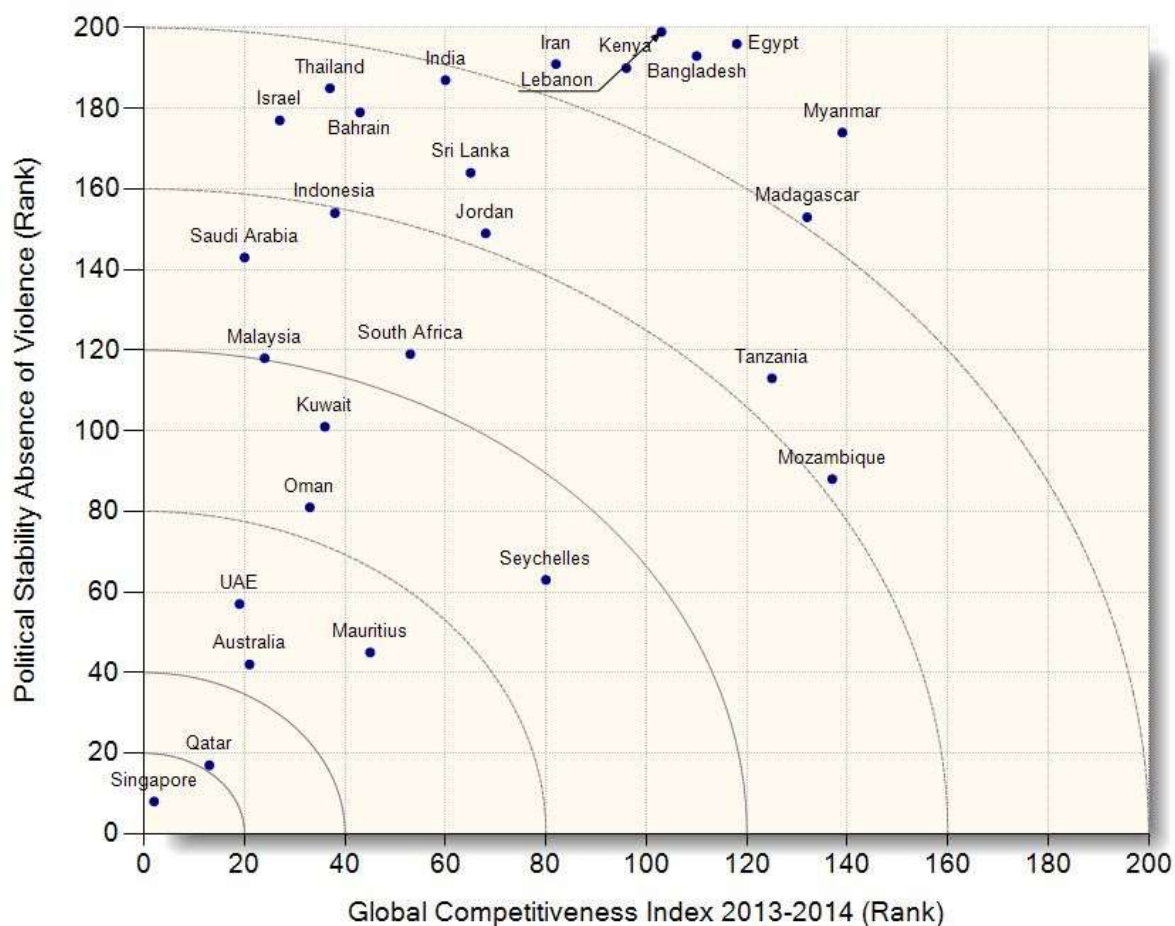
<http://info.worldbank.org/governance/wgi/index.aspx#doc-intro>

Political Stability and Absence of Violence/Terrorism (PV) – capturing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically - motivated violence and terrorism.

Figure A.7 displays these indicators on a country level:

Figure A.8 displays these indicators on a Subregion Level:

Figure A.7: World Governance Indicators versus WEF Global Competitiveness Index Country Rank

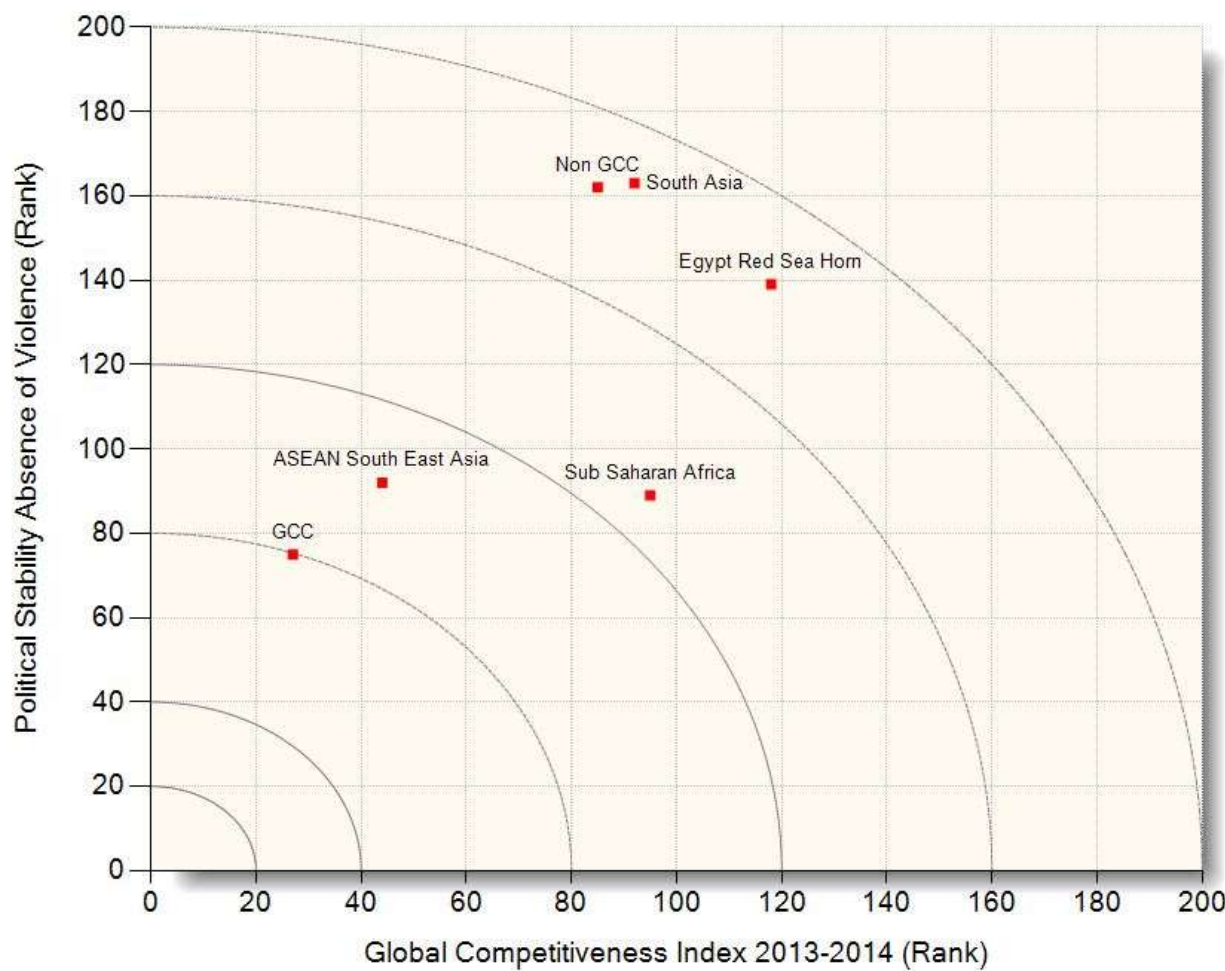


World Bank World Governance Indicator, Political Stability and Absence of Violence, Country Level

Low to Moderate Risk Rank (1-70)	Medium Risk Rank (70 -110)	High Risk Rank (110-150)	Very High/Critical Risk Rank (150-200)
Singapore	Oman	Tanzania	Madagascar
Qatar	Mozambique	Malaysia	Indonesia
Australia	Kuwait	South Africa	Eritrea
Mauritius	Djibouti	Comoros	Sri Lanka
UAE		Saudi Arabia	Myanmar
Seychelles		Jordan	Israel
			Bahrain
			Thailand
			India
			Kenya
			Iran
			Bangladesh

Egypt
Lebanon
Iraq
Sudan
Yemen
Pakistan
Syria

Figure A.8: World Governance Indicators versus WEF Global Competitiveness Index: Sub-regional Rank



World Bank World Governance Indicator, Political Stability and Absence of Violence, Subregion Level

Low to Moderate Risk Rank (1-70)	Medium Risk Rank (70 -110)	High Risk Rank (110-150)	Very High/Critical Risk Rank (150-200)
	GCC Sub Saharan Africa ASEAN South East Asia	Egypt Red Sea Horn	Non-GCC South Asia

External Debt to GDP versus Exports of Goods and Services % of GDP

Figure A.9 shows Threshold Values of the ratio of External Debt to GDP and External Debt to Exports of Goods and Services for Low Income Economies,

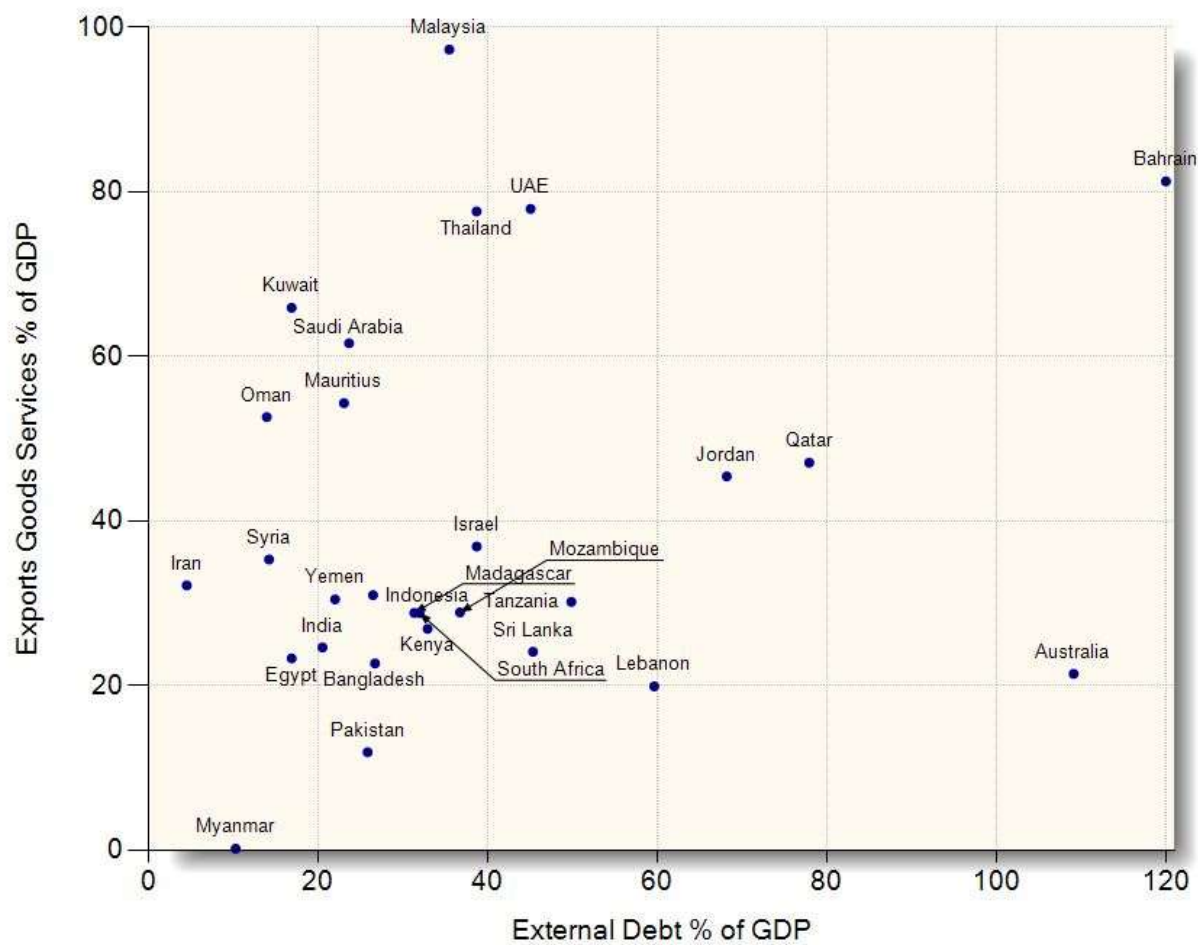
It is strongly advised to refer back to the IMF/World Bank definitions and Benchmarks established for Emerged, and Emerging Economies. For instance if the External Debt to GDP ratio is greater than 50% then the country can be considered to be highly indebted, whereas if it lies between 30 to 50% it is Moderately Indebted, and if less than 30% then Less Indebted.

External Debt to Exports ratio (obtained by dividing External debt to GDP as % by Exports of Goods and Services % GDP), shows that if the ratio is greater than 275% then country is highly indebted and exposed to bankruptcy, if between 165 to 275% then moderately indebted, and if less than 165% then Less indebted.

Taking Jordan for example, as an Emerging Economy, the External Debt as % of GDP is 62% implying that it is heavily indebted. Exports of Goods and Services to GDP is around 45%. Therefore the ratio of External Debt to Export of Goods and Services is $(62/45 = 138\%)$, which is in the upper less indebted economy.

Given these criteria, the overall debt situation for Jordan can be assumed to be Moderate, definitely not on the verge of Bankruptcy. The country clearly needs International Economic Aid to bring its economy to a more stable region, given its geostrategic location, and with the ongoing conflict in Syria, instability in Iraq, Egypt in a state of transition and fight against the Moslem Brotherhood.

Figure A.9: Country Exports of Goods and Services (as %GDP) versus Country External Debt (as %GDP)



¹ Department of Defense, “IISS Manama Dialogue: As Delivered by Secretary of Defense Chuck Hagel, Manama, Bahrain, December 07, 2013,” <http://www.defense.gov/utility/printitem.aspx?print=http://www.defense.gov/speeches/speech.aspx?speechid=1824>.

² While it is sometimes regarded as a “warm sea,” the reality is that surface dominated by counterclockwise gyre (broad, circular system of currents) in the southern Indian Ocean; unique reversal of surface currents in the northern Indian Ocean; low atmospheric pressure over southwest Asia from hot, rising, summer air results in the southwest monsoon and southwest-to-northeast winds and currents, while high pressure over northern Asia from cold, falling, winter air results in the northeast monsoon and northeast-to-southwest winds and currents; ocean floor is dominated by the Mid-Indian Ocean Ridge and subdivided by the Southeast Indian Ocean Ridge, Southwest Indian Ocean Ridge, and Ninetyeast Ridge. Its key storm patterns are: northeast monsoon (December to April), southwest monsoon (June to October); tropical cyclones occur during May/June and October/November in the northern Indian Ocean and January/February in the southern Indian Ocean.

³ CIA, World Factbook, “Indian Ocean,” <https://www.cia.gov/library/publications/the-world-factbook/geos/xo.html>.

⁴ “The Indian Ocean Region: Security, Stability and Sustainability in the 21st Century,” *Australia India Institute*, 2013, Pg. 42-43, http://www.aii.unimelb.edu.au/sites/default/files/IOTF_0.pdf, Pg. 40.

⁵ “The Indian Ocean Region: Security, Stability and Sustainability in the 21st Century,” *Australia India Institute*, 2013, Pg. 42-43, http://www.aii.unimelb.edu.au/sites/default/files/IOTF_0.pdf.

⁶ OECD Glossary of Statistical Terms, 2007

⁷ Handbook of Constructing Indicators: Methodology and User’s Guide – OECD 2008.

⁸ World Bank, <http://www.doingbusiness.org/>.

⁹ World Bank, <http://www.doingbusiness.org/>,

¹⁰ Executive summary, *World Energy Outlook*, IEA, Paris, 2013, pp. 3-4, http://www.iea.org/publications/freepublications/publication/WEO2013_Executive_Summary_English.pdf.

¹¹ Executive summary, *World Energy Outlook*, IEA, Paris, November 2012, p. 1, <http://www.worldenergyoutlook.org/publications/weo-2012/#d.en.26099>.

¹² EIA, *International Energy Outlook*, 2013, July 25, 2013, <http://www.eia.gov/forecasts/ieo/>, and <http://www.eia.gov/forecasts/ieo/world.cfm>.

¹³ Twenty countries originally signed the Convention on the Organization for Economic Co-operation and Development on 14 December 1960. Since then fourteen countries have become members of the Organization. 34 countries are members today:

Australia	France	Korea	Slovenia
Austria	Germany	Luxembourg	Spain
Belgium	Greece	Mexico	Sweden
Canada	Hungary	Netherlands	Switzerland
Chile	Iceland	New Zealand	Turkey
Czech Republic	Ireland	Norway	United Kingdom
Denmark	Israel	Poland	United States
Estonia	Italy	Portugal	
Finland	Japan	Slovak Republic	

¹⁴ EIA, *International Energy Outlook*, 2013, July 25, 2013, <http://www.eia.gov/forecasts/ieo/>, and <http://www.eia.gov/forecasts/ieo/world.cfm>.

¹⁵ EIA, *International Energy Outlook*, 2013, July 25, 2013, <http://www.eia.gov/forecasts/ieo/>, and <http://www.eia.gov/forecasts/ieo/world.cfm>.

¹⁶ EIA, *International Energy Outlook*, 2013, July 25, 2013, <http://www.eia.gov/forecasts/ieo/>, and <http://www.eia.gov/forecasts/ieo/world.cfm>.

¹⁷ A detailed comparison of the EIA and IEA forecasts is provided in Appendix K to the EIA's *International Energy Outlook*, 2013, See pages 292-296.

¹⁸ EIA, *International Energy Outlook*, 2013, July 25, 2013, <http://www.eia.gov/forecasts/ieo/>, and <http://www.eia.gov/forecasts/ieo/world.cfm>.

¹⁹ World Trade Organization, *The World Trade Report 2013: Factors Shaping the Future of World Trade*, http://www.wto.org/english/res_e/booksp_e/world_trade_report13_e.pdf.

²⁰ World Trade Organization, *The World Trade Report 2013: Factors Shaping the Future of World Trade*, http://www.wto.org/english/res_e/booksp_e/world_trade_report13_e.pdf, p 32.

²¹ World Trade Organization, *The World Trade Report 2013: Factors Shaping the Future of World Trade*, http://www.wto.org/english/res_e/booksp_e/world_trade_report13_e.pdf, p 76.

²² EIA, *International Energy Outlook*, 2013, "Highlights," <http://www.eia.gov/forecasts/ieo/pdf/0484%282013%29.pdf>.

²³ EIA, *International Energy Outlook*, 2013, Table G1, p 247.

²⁴ EIA, *International Energy Outlook*, 2013, Table G1, p 247.

²⁵ EIA, *International Energy Outlook*, 2013, pp. 31-32.

²⁶ EIA, *International Energy Outlook*, 2013, p. 247.

²⁷ EIA, *International Energy Outlook*, 2013, p. 247.

²⁸ EIA, "Iran's oil exports not expected to increase significantly despite recent Negotiations," *Today in Energy*, December 10, 2013.

²⁹ EIA states that, "the most significant non-OPEC contributors to production growth are Brazil, Canada, the United States, and Kazakhstan, which together account for 87 percent of the total increase in non-OPEC liquids supply. Prospects for growth in petroleum and other liquid fuels production in the Americas are particularly strong, reflecting contributions from deep-water pre-salt resources in Brazil, bitumen in Canada, and tight oil in the United States. The result is a net gain in non-OPEC production from the Americas of 7.2 million barrels per day by 2025—an increase that balances liquids production with consumption in the hemisphere as demand growth is tempered by efficiency gains, especially in the U.S. transportation sector. In the IEO2013 Reference case, the Americas become a net exporter of liquids by the end of the projection period. There is potential for even more production growth in the Americas from both the United States, as discussed in the *Annual Energy Outlook 2013*

(AEO2013) High Oil and Gas Resource case, and from OPEC's Venezuela, which has large reserves of extra-heavy oil but does not aggressively develop new fields under the current policies assumption of the IEO2013 Reference case. U.S. production of liquid fuels surpasses that of Russia by 2015. There are a number of factors (including accounting conventions for how liquid fuels are measured) that determine the timing, extent, and significance of such a development.

³⁰ EIA, *International Energy Outlook*, 2013, 2013, p. 23

³¹ EIA, *International Energy Outlook*, 2013, pp. 27-28.

³² EIA, *International Energy Outlook*, 2013, pp. 27-28.

³³ Executive summary, *World Energy Outlook*, IEA, Paris, November 2012, pp. 3-4, <http://www.worldenergyoutlook.org/publications/weo-2012/#d.en.26099>. for a short commentary, see Floyd Norris, "Oil Supply is rising, But Demand Keeps Pace and Then Some," *New York Times*, November 24, 2012, p. B5.

³⁴ EIA, *International Energy Outlook*, 2013, (pp. 51-53).

³⁵ Source: EIA, *How dependent are we on foreign oil?*, May 10, 2013, http://www.eia.gov/energy_in_brief/article/foreign_oil_dependence.cfm.

³⁶ EIA, *Annual Energy Outlook*, DOE/EIA-383(2013) April 2013 April 2013, <http://www.eia.gov/forecasts/aeo/pdf/0383%282013%29.pdf>, pp. 30-32.

³⁷ EIA, *Annual Energy Outlook*, DOE/EIA-383(2013) April 2013 April 2013, <http://www.eia.gov/forecasts/aeo/pdf/0383%282013%29.pdf>, pp. 30-32.

³⁸ EIA, *Annual Energy Outlook*, DOE/EIA-383(2013) April 2013 April 2013, <http://www.eia.gov/forecasts/aeo/pdf/0383%282013%29.pdf>, pp. 78-79.

³⁹ EIA, *Annual Energy Outlook*, DOE/EIA-383(2013) April 2013 April 2013, <http://www.eia.gov/forecasts/aeo/pdf/0383%282013%29.pdf>, p. 80.

⁴⁰ EIA, *Annual Energy Outlook*, DOE/EIA-383(2013) April 2013 April 2013, <http://www.eia.gov/forecasts/aeo/pdf/0383%282013%29.pdf>, pp. 30-32.

⁴¹ DOE/EIA, *AEO2013 Early Release Overview*, April, 2013, [www.eia.gov/forecasts/aeo/er/pdf/0383er\(2013\).pdf](http://www.eia.gov/forecasts/aeo/er/pdf/0383er(2013).pdf).

⁴² DOE/EIA, U.S. Energy Information Administration, *Annual Energy Outlook 2014 Early Release Overview*, December, 2013, <http://www.eia.gov/forecasts/aeo/er/pdf/0383er%282014%29.pdf>.

⁴³ Growing domestic production of natural gas and crude oil continues to reshape the U.S. energy economy, with crude oil production approaching the historical high achieved in 1970 of 9.6 million barrels per day. Ongoing improvements in advanced technologies for crude oil and natural gas production continue to lift domestic supply and reshape the U.S. energy economy. Domestic production of crude oil (including lease condensate) increases sharply in the AEO2014 Reference case, with annual growth averaging 0.8 million barrels per day (MMbbl/d) through 2016, when it totals 9.5 MMbbl/d. While domestic crude oil production is expected to level off and then slowly decline after 2020 in the Reference case, natural gas production grows steadily, with a 56% increase between 2012 and 2040, when production reaches 37.6 trillion cubic feet (Tcf). DOE/EIA, U.S. Energy Information Administration, *Annual Energy Outlook 2014 Early Release Overview*, December, 2013, <http://www.eia.gov/forecasts/aeo/er/pdf/0383er%282014%29.pdf>.

⁴⁴ U.S. dry natural gas production increases 1.3 percent per year throughout the Reference case projection, outpacing domestic consumption by 2019 and spurring net exports of natural gas. Higher volumes of shale gas production are central to higher total production volumes and a transition to net exports. As domestic supply has increased in recent years, natural gas prices have declined, making the United States a less attractive market for imported natural gas and more attractive for export.

U.S. net exports of natural gas grow to 3.6 trillion cubic feet in 2040 in the Reference case. Most of the projected growth in U.S. exports consists of pipeline exports to Mexico. Declining natural gas imports from Canada also contribute to the growth in U.S. net exports. Net U.S. imports of natural gas from Canada decline sharply from 2016 to 2022, then stabilize somewhat before dropping off again in the final years of the projection, as continued growth in domestic production mitigates the need for imports.

Continued low levels of liquefied natural gas (LNG) imports in the projection period, combined with increased U.S. exports of domestically sourced LNG, position the United States as a net exporter of LNG by 2016. U.S. exports of domestically sourced LNG (excluding exports from the existing Kenai facility in Alaska) begin in 2016 and rise to a level of 1.6 trillion cubic feet per year in 2027. ... The prospects for exports are highly uncertain, however.

In the High Oil and Gas Resource case, with more optimistic resource assumptions, U.S. LNG exports grow to more than 4 trillion cubic feet in 2040. Most of the additional exports originate from the Lower 48 states.

Source: US Energy Information Administration, *Annual Energy Outlook 2013 Early Release Overview*, May 2, 2013, http://www.eia.gov/forecasts/aeo/chapter_executive_summary.cfm#tightoil.

⁴⁵ See US Energy Information Administration, *Annual Energy Outlook 2013 Early Release Overview*, May 2, 2013, http://www.eia.gov/forecasts/aeo/chapter_executive_summary.cfm#tightoil and DOE/EIA, U.S. Energy Information Administration, *Annual Energy Outlook 2014 Early Release Overview*, December, 2013, <http://www.eia.gov/forecasts/aeo/er/pdf/0383er%282014%29.pdf>.

⁴⁶ Projected low prices for natural gas make it a very attractive fuel for new generating capacity. In some areas, natural gas-fired generation replaces generation formerly supplied by coal and nuclear plants. In 2040, natural gas accounts

for 35% of total electricity generation, while coal accounts for 32% (Figure 3). Generation from renewable fuels, unlike coal and nuclear power, is higher in the AEO2014Reference case than in AEO2013.

Electric power generation with renewables is bolstered by legislation enacted at the beginning of 2013 extending tax credits for various renewable technologies; which was passed after the AEO2013 Reference case had been completed, but was considered in an alternative case in AEO2013. Higher natural gas production also supports increases in exports of both pipeline and liquefied natural gas. In addition to increases in domestic consumption in the industrial and electric power sectors, U.S. exports of natural gas also increase in the AEO2014 Reference case (Figure 4).

U.S. exports of liquefied natural gas (LNG) increase to 3.5 Tcf in 2029 and remain at that level through 2040. Pipeline exports of U.S. natural gas to Mexico grow by 6% per year, from 0.6 Tcf in 2012 to 3.1 Tcf in 2040, and pipeline exports to Canada grow by 1.2% per year, from 1.0 Tcf in 2012 to 1.4 Tcf in 2040. Over the same period, U.S. pipeline imports from Canada fall by 30%, from 3.0 Tcf in 2012 to 2.1 Tcf in 2040, as more U.S. demand is met by domestic production. Projected exports are sensitive to assumptions regarding conditions in U.S. and global natural gas markets.

With strong growth in domestic crude oil and natural gas production, U.S. use of imported fuels falls sharply In the AEO2014 Reference case, U.S. domestic energy production increases from 79.1 quadrillion Btu in 2012 to 102.1 quadrillion Btu in 2040, and net use of imported energy sources, which was 30% in 2005, falls from 16% of total consumption in 2012 to 4% in 2040. In the AEO2013 Reference case, domestic energy production reached a total of 98.5 quadrillion Btu, and energy imports is projected to decline as a percentage of consumption to 9% in 2040.

The larger increase in domestic energy production in AEO2014 is primarily a result of higher projections of production of natural gas and biomass/other renewables. Crude oil production (including lease condensate) increases from 13.9 quadrillion Btu in 2012 to a peak of 20.5 quadrillion Btu in 2019 before dropping to 16.0 quadrillion Btu in 2040. With domestic crude oil production rising to 9.5 MMbbl/d in 2016, the import share of U.S. petroleum and other liquids supply falls to about 25%. Domestic production begins to decline after 2019, and the import share of total petroleum and other liquids supply grows to 32% in 2040, still lower than the 2040 level of 37% in the AEO2013. DOE/EIA, U.S. Energy Information Administration, *Annual Energy Outlook 2014 Early Release Overview*, December, 2013, <http://www.eia.gov/forecasts/aeo/er/pdf/0383er%282014%29.pdf>.

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DOE/EIA, U.S. Energy Information Administration, *Annual Energy Outlook 2014 Early Release Overview*, December, 2013, <http://www.eia.gov/forecasts/aeo/er/pdf/0383er%282014%29.pdf>.

⁴⁸ CIA, *World Factbook*, “USA, accessed January 10, 2014, <https://www.cia.gov/library/publications/the-world-factbook/geos/us.html>.

⁴⁹ In 2012, the US got 16.1% of its imports from Canada (including substantial energy imports), 14.0% from china, 12.9% from Mexico, 5.7% from Japan, 4.1% from Germany, 2.9% from Britain, 2.6% from South Korea, 2.0% from Brazil, and 39.7% from the rest of the world. *The Economist*, “Briefing NA FTA,” January 4, 2014, p. 24.

⁵⁰ CIA, *World Factbook*, “USA, accessed January 10, 2014, <https://www.cia.gov/library/publications/the-world-factbook/geos/us.html>.

⁵¹ See 2013, http://www.eia.gov/forecasts/aeo/chapter_executive_summary.cfm#tightoil.

⁵² Secretary of Defense Hagel in a press release issued on December 7, 2013. For the full text of Secretary Hagel’s views, see “IISS Manama Dialogue As Delivered by Secretary of Defense Chuck Hagel, Manama, Bahrain, Saturday, December 07, 2013,” <http://www.defense.gov/utility/printitem.aspx?print=http://www.defense.gov/speeches/speech.aspx?speechid=1824>.

⁵³ DOE/EIA, “World Oil Transit Chokepoints,” August 22, 2012, http://www.eia.gov/countries/analysisbriefs/World_Oil_Transit_Chokepoints/wotc.pdf.

⁵⁴ DOE/EIA, “World Oil Transit Chokepoints,” August 22, 2012, http://www.eia.gov/countries/analysisbriefs/World_Oil_Transit_Chokepoints/wotc.pdf.

⁵⁵ DOE/EIA, “World Oil Transit Chokepoints,” August 22, 2012, http://www.eia.gov/countries/analysisbriefs/World_Oil_Transit_Chokepoints/wotc.pdf.

⁵⁶ DOE/EIA, “World Oil Transit Chokepoints,” August 22, 2012, http://www.eia.gov/countries/analysisbriefs/World_Oil_Transit_Chokepoints/wotc.pdf.

⁵⁷ DOE/EIA, “World Oil Transit Chokepoints,” August 22, 2012, http://www.eia.gov/countries/analysisbriefs/World_Oil_Transit_Chokepoints/wotc.pdf.

⁵⁸ DOE/EIA, “World Oil Transit Chokepoints,” August 22, 2012, http://www.eia.gov/countries/analysisbriefs/World_Oil_Transit_Chokepoints/wotc.pdf.

⁵⁹ DOE/EIA, “World Oil Transit Chokepoints,” August 22, 2012, http://www.eia.gov/countries/analysisbriefs/World_Oil_Transit_Chokepoints/wotc.pdf.

⁶⁰ CIA, *World Factbook*, “Indian Ocean,” accessed January 10, 2014; <https://www.cia.gov/library/publications/the-world-factbook/geos/xo.html>.

⁶¹ World Bank, WGI 2013 *Index of Governance, Country Reports*, “Myanmar,” <http://info.worldbank.org/governance/wgi/index.aspx#countryReports>.

⁶² Transparency International, *Corruption Index*, http://www.transparency.org/country#IND_DataResearch_Reports.

⁶³ World Bank, *Doing Business, 2014*, “India,” <http://www.doingbusiness.org/data/exploreeconomies/~media/giawb/doing%20business/documents/profiles/country/IND.pdf?ver=2>.

⁶⁴ World Bank, WGI 2013 *Index of Governance, Country Reports*, “Myanmar,” <http://info.worldbank.org/governance/wgi/index.aspx#countryReports>.

⁶⁵ Transparency International, *Corruption Index*, http://www.transparency.org/country#IND_DataResearch_Reports.

⁶⁶ World Bank, *Doing Business, 2014*, “India,” <http://www.doingbusiness.org/data/exploreeconomies/~media/giawb/doing%20business/documents/profiles/country/IND.pdf?ver=2>.

⁶⁷ World Bank, WGI 2013 *Index of Governance, Country Reports*, “Myanmar,” <http://info.worldbank.org/governance/wgi/index.aspx#countryReports>.

⁶⁸ Transparency International, *Corruption Index*, http://www.transparency.org/country#IND_DataResearch_Reports.

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- ⁶⁹ World Bank, *Doing Business*, 2014, “India,” <http://www.doingbusiness.org/data/exploreeconomies/~media/giawb/doing%20business/documents/profiles/country/IND.pdf?ver=2>.
- ⁷⁰ World Bank, WGI 2013 *Index of Governance*, *Country Reports*, “Myanmar,” <http://info.worldbank.org/governance/wgi/index.aspx#countryReports>.
- ⁷¹ Transparency International, *Corruption Index*, http://www.transparency.org/country#IND_DataResearch_Reports.
- ⁷² World Bank, *Doing Business* 2014, “India,” <http://www.doingbusiness.org/data/exploreeconomies/~media/giawb/doing%20business/documents/profiles/country/IND.pdf?ver=2>.
- ⁷³ World Bank, WGI 2013 *Index of Governance*, *Country Reports*, “Myanmar,” <http://info.worldbank.org/governance/wgi/index.aspx#countryReports>.
- ⁷⁴ Transparency International, *Corruption Index*, http://www.transparency.org/country#IND_DataResearch_Reports.
- ⁷⁵ World Bank, *Doing Business* 2014, “India,” <http://www.doingbusiness.org/data/exploreeconomies/~media/giawb/doing%20business/documents/profiles/country/IND.pdf?ver=2>.
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Suez Canal southbound on 6 July 1984, en route to Assab, Ethiopia. *Ghat* retransited the Canal back towards Libya on 21 July 1984. By reviewing port logs and *Ghat*'s speed, Egyptian investigators determined the voyage should have taken 8 days but instead took 15. *Ghat*'s next port call was in West Germany where undercover agents boarded the ship and found damage to her ro-ro ramp consistent with having been opened underway and dragged through the water.

The mining was too much for the Egyptian navy to handle alone. The first American response was by the oceanography ship *USNS Harkness* (T-AGS-32) to which an EOD team was transported in July. In early August, the amphibious assault ship *USS Shreveport* (LPD-12) unloaded her Marines at Rota, Spain and embarked four Sea Stallion MCM helicopters of squadron HM-14. Once in the Red Sea, she was joined by British, French, and Italian minesweepers in operation "Intense Look". While not directly operating jointly with the NATO units, the Soviet navy also assisted by sending the helicopter carrier *Leningrad* from the Black Sea and a minesweeper from Aden, South Yemen. *Leningrad* had offloaded her normal "Hormone" ASW helicopters and operated Mi-14 "Haze" minesweeping helicopters.

Libya's reason for the mining has never been understood. It is possible that it was in retaliation for the cooling of tensions between Egypt and Israel during the 1980s, or, possibly to cause economic damage to the USA by driving up the price of oil. Either way, the only end result was Libya becoming even more isolated internationally."

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