

Find Me the Money: Financing Climate and Other Global Public Goods

Nancy Birdsall and Benjamin Leo

Abstract

The global community faces a number of critical challenges ranging from climate change to cross-border health risks to natural-resource scarcities. Many of these so-called global commons problems carry grave risks to economic growth in the developing world and to the livelihoods and welfare of their people. Climate change is the classic example. Despite the risks involved, donor governments have funded programs addressing global challenges such as climate change at far lower levels than traditional programs of country-based development assistance. The prospects for dealing with such global challenges will depend at least in part on new collective financing mechanisms.

In this paper, we examine four categories of existing resource-mobilization options, including (1) transportation levies; (2) currency and financial transaction taxes; (3) capitalization of IMF Special Drawing Rights (SDRs); and (4) the sale, mobilization, or capitalization of IMF gold. In the end, we recommend that willing governments utilize a modest portion of their existing SDR allocations to capitalize a third-party financing entity. This entity would offer bonds on international capital markets backed by its SDR reserves. The proceeds would back private investment in climate-mitigation projects in developing countries that might otherwise lack adequate financing. This approach could mobilize up to \$75 billion at little or no budgetary cost for contributing governments. Any limited budgetary costs could be offset by using excess proceeds from recent IMF gold sales. In our view, capitalizing a small portion of existing global assets—SDRs with a small back-up reserve of the income from gold already sold—to finance programs that deal with global public goods and bads makes eminent sense.

**Find Me the Money:
Financing Climate and Other Global Public Goods**

Nancy Birdsall, President
Center for Global Development

Benjamin Leo, Research Fellow
Center for Global Development

The authors thank Pronita Saxena and Ross Thuotte for their excellent research work. They also thank David Wheeler, Cathy Pattillo, Hugh Bredenkamp, Ted Truman, Billy Pizer, Eduardo Ley, David Waskow, Ari Huhtala, Ilana Solomon, and several anonymous reviewers for input and comments on earlier drafts of this paper. The authors are solely responsible for any errors in fact or judgment.

CGD is grateful for contributions from the the Open Society Foundation and the Norwegian Ministry of Foreign Affairs in support of this work.

Nancy Birdsall and Benjamin Leo. 2011. "Find Me the Money: Financing Climate and Other Global Public Goods." CGD Working Paper 248. Washington, D.C.: Center for Global Development. <http://www.cgdev.org/content/publications/detail/1424979>

**Center for Global Development
1800 Massachusetts Ave., NW
Washington, DC 20036**

202.416.4000
(f) 202.416.4050

www.cgdev.org

The Center for Global Development is an independent, nonprofit policy research organization dedicated to reducing global poverty and inequality and to making globalization work for the poor. Use and dissemination of this Working Paper is encouraged; however, reproduced copies may not be used for commercial purposes. Further usage is permitted under the terms of the Creative Commons License.

The views expressed in CGD Working Papers are those of the authors and should not be attributed to the board of directors or funders of the Center for Global Development.

I. INTRODUCTION

The global community faces a number of critical common challenges, including climate change, increasing cross-border health risks ranging from pandemic flu to drug resistance, and politically- and economically-destabilizing natural resource scarcities, such as local and regional access to water. Many of these so-called global commons problems carry grave risks to economic growth in the developing world and to the livelihoods and welfare of their people. In welfare terms, those problems pose the greatest risk to the poorest countries and the poorest people.

For decades, traditional donors have committed resources to address global challenges that matter acutely in the developing world. In the early 1970s, the Consultative Group on International Agricultural Research (CGIAR) was created, which played a critical role in the Green Revolution in South Asia. In the 1980s, the Global Environment Facility (GEF) was created. Since then, the GEF has supported programs and projects in the developing world for protection of biodiversity, forests, marine life, and other related issues. More recently, the donor community has created Climate Investment Funds at the World Bank and the other multilateral banks.

However, these initiatives have been funded at far lower levels than traditional country-directed development assistance programs. Official aid for country-based programs in 2009 amounted to about \$120 billion.¹ In that year, our rough estimate of official transfers to support non-country based global programs – such as basic agricultural research, vaccine production and distribution, UN peacekeeping, preserving biodiversity, and reducing greenhouse gas emissions – amounted to less than \$12 billion (see table 1 and appendix 1 for additional details). In comparison to traditional development aid, revenue mobilization to finance global public good programs has been limited.² In contrast to traditional development programs, spending by the traditional

¹ This figure had grown significantly on an annualized basis until the 2008-09 global financial crisis.

² This is so despite recent and creative approaches. Two of the best known among new and creative approaches are the IFFIm and the AMC. In 2006, the International Finance Facility for Immunization (IFFIm) was established to accelerate the availability and predictability of funding for immunization programs. To date, the IFFIm has leveraged medium- to long-term donor funding commitments to raise \$2.6 billion in international capital markets to finance near-term immunization campaigns. In practice, the IFFIm does not raise new money. It simply shifts out-year donor budget outlays forward to finance immediate programs, which helps to illustrate the inherent challenges in mobilizing *new* resources. In 2007, five donor governments (Canada, Italy, Norway, Russia, and the United Kingdom) and the Bill & Melinda Gates Foundation committed \$1.5 billion to launch the first Advance Market Commitment to accelerate commercial availability of a new pneumococcal vaccine tailored to developing country requirements.

donors on these latter programs does not provide the same returns politically or diplomatically as spending on bilateral aid. In this context, the political dynamics raise the same or even more difficult challenges domestically as committing resources to the United Nations and other multilateral institutions.

Despite the apparent difficulty of raising revenue for global public goods (GPGs), the rising profile of climate change and the pressure to achieve some concrete outcome at the UN Conference in Cancún in December 2010 triggered substantial new financial pledges by the developed countries.³ The developed country signatories agreed to provide \$30 billion by the end of 2012 (\$10 billion a year) and to establish a Green Climate Fund that would mobilize \$100 billion annually by 2020 to assist with climate adaptation and mitigation.^{4 5}

There is a general assumption that much of the \$100 billion will somehow be generated through carbon trading (in the form of developed country transfers to developing countries to offset the former group's emissions above some agreed level). That is evident for example in the November 2010 report of the UN High-level Advisory Group on Climate Change Financing (hereafter UNAGF – in which some estimates of private resources that could be raised assume a market price of \$25 per ton of emissions.)⁶ However, the reality is that even with global trading of emissions rights, the rich world will still need to raise considerable public resources to meet its announced commitment. This is obviously the case for adaptation, which requires public resources. But even for mitigation, public resources are needed. That is obviously true in the short run, as a global cap and trade system is not in the cards in the next few years. And in the longer run, large transfers through private trading to developing countries (say on the

³ The Cancún commitments referred to, and built upon, those provided earlier at the Copenhagen Summit in December 2009.

⁴ While Cancún Summit participants agreed to launch a Green Climate Fund, they did not identify specific sources of financing. For additional details, see paragraphs 95 through 112 of the Cancún Agreements document (<http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf#page=2>).

⁵ Estimates of the cost of mitigation and adaptation in developing countries range to numbers much greater. One estimate for adaptation only is US \$195 billion per year by 2020 in addition to ODA commitments. Climate Action Network (2010).

⁶ The UNAGF team also published a series of background papers detailing each potential source of finance. The papers and final report are available at: <http://www.un.org/wcm/content/site/climatechange/pages/financeadvisorygroup/pid/13300>. This paper draws upon the UNAGF analysis in several areas, such as the potential impact of international aviation taxes and capitalization-based financing vehicles.

order of \$50 billion a year) depend on initial allocations of emissions rights that are politically unlikely⁷ (as well as an implicit price of at least \$25 ton).⁸

Finally, even if the world does manage to create a carbon trading system involving such large transfers, there will still be many additional opportunities to deploy public resources to cover the gap between social and private returns that trading will not cover, if only because of the need to establish reporting and verification in developing countries which is critical to private trading (but can be managed in the case of large investments that are publicly subsidized).

Many would argue that the first-best choice is for each country's political processes to authorize and appropriate the necessary funds. However, in the fallout of the global economic crisis, donor governments face significant political as well as fiscal constraints to expanding development assistance budgets over the next several years at least. Given this, the prospects for helping developing countries deal with new, shared GPG challenges would seem to rest, at least in part, on new collective financing mechanisms that are specifically designed to address GPGs as distinct from "development", i.e. goods that directly or indirectly reduce risks or produce benefits important to rich as well as poor countries. For these GPGs, particularly climate mitigation, we take the view that it is time to begin developing political support for new pools of financing that are inherently collective or cooperative at the global level. That support will need to come from key governments as well as from citizens, civil society, legislative bodies, private businesses, and other stakeholders that influence such support, particularly though not only in the rich world.

⁷ Until now, most developing countries have resisted the use of offsets by developed countries. One reason to limit such offsets might be that they would undermine incentives for technological breakthroughs in the advanced economies (Birdsall and van der Goltz, forthcoming). Another is that the adjustment costs implied in developing countries in terms of changes in production and exports would be difficult to manage where social safety net programs are minimal (Mattoo and Subramanian, 2010).

⁸ Compared to a global cap and trade system, a global carbon tax of \$30 or more would reduce the need for and increase the efficiency of public resources meant to catalyze private money for climate mitigation (on the global tax see Nordhaus, 2010). Meanwhile, the price in the EU trading system has fallen to below \$20 with the recession. Although, it will rise assuming a larger proportion of emissions rights is sold rather than awarded to large polluters.

Figure 1 – Estimated Annual Contributions and/or Expenditures: Select Global Public Good Funds and Facilities, 2009 (USD Millions)⁹

Initiative	USD Millions
EITI Multi-Donor Trust Fund	25
CGIAR Contributions	606
UN Peacekeeping	8,968
International Initiative for Impact Evaluation (3ie)	13
Total planned encashment of GEF-4 replenishment for 2009	332
Interim Administrative/Operational expenses of the UN Adaptation Fund	3
Advance Market Commitment (AMC) for Pneumococcal Vaccines	125
Montreal Protocol	113
International Finance Facility for Immunisations (IFFIm)	291
Climate Investment Funds	1,159
IMF Surveillance	363
Total GPG Financing	11,998

In Section II of this paper, we examine four options for increased financing of GPGs. By definition, these GPGs have benefits for rich countries as well as poor countries, while at the same time are, as we say in our title, development-pertinent. In other words, they are critically important for shared growth and development in developing countries. We envision in particular programs for climate change mitigation, though new technologies and investments in agriculture, energy, water, and health also clearly would fall under the GPG category.

The four options are: (1) transportation levies; (2) currency and financial transaction taxes; (3) capitalization of IMF Special Drawing Rights (SDRs); and (4) sale, mobilization or capitalization of IMF gold. We provide background on each option, and then briefly assess the technical merits and political feasibility of each. All of these except use of gold are discussed in the UNAGF report; we refer briefly below to findings of that report on each.¹⁰

In particular, we highlight legislative and other requirements pertaining to the United States – whose participation is critical either to avoid free riding or arbitrage, or in the

⁹ See Appendix 1 for a breakdown of contributions by donor country and detailed explanations of the above amounts.

¹⁰ The AGF report also includes discussion of countries agreeing to commit some portion of auction fees (of emissions rights) and carbon taxes to international programs; we do not discuss those here though they would make sense in principle if and when most advanced countries have taxes or cap and trade systems.

case of aviation levies, to reach a reasonably robust level of financing. In Section III, we outline a specific proposal for further analysis and advocacy. We focus on the advantages and likely challenges of securing agreement from willing IMF members to more effectively harness modest amounts of their existing SDR assets.

The resulting resources would be utilized to catalyze private investments with high social compared to private returns that lack financing despite their commercial viability (even at current low carbon prices and more so if and when those prices rise), for climate mitigation in developing countries.¹¹

Our proposed use of SDRs would not address the need for public resources for climate adaptation financing in developing countries. Other grant-based or highly concessional resources would be required for adaptation as well as other GPG programs that are development-pertinent – including research and development of new technologies in agriculture and health. However, it would help meet a portion of the immediate and longer-run commitments (of \$30 billion and \$100 billion), in principle easing the pressure on total budget demands for other global programs.

At the end of the paper, we note that specific institutional arrangements for deploying any resources raised through any of the collective or cooperative options have not been addressed. In the case of the United States and possibly many emerging market economies, garnering political support for any of the proposals will require simultaneous agreement on what existing or new institutional arrangements would be used. In this context, governance and management structures of any new international facility are key issues.¹²

II. COLLECTIVE FINANCING: FOUR OPTIONS

The options we explore, as mentioned above, are all “collective or cooperative” at the global level. The aviation levies and capitalization of existing SDRs are “cooperative”.

¹¹ Such support would be along the lines of financing provided now by the Climate Investment Funds, primarily for clean energy, at the World Bank and other multilateral banks. Nassiry and Wheeler (2011) explain some of the critical financing and other gaps that limit private investment in clean technology, both for early-stage technology innovation and for scaled-up development due to execution and other risks, especially in developing countries.

¹² During the Cancún Summit, participants agreed to a specific process for addressing the Green Climate Fund governance structure.

They do not require that all countries agree, though they do require agreement of the large economies if they are to succeed in raising a reasonable amount of revenue – e.g. on the order of \$10 billion annually – and cooperation on rates and deployment of the resources. The maritime, currency, and financial taxes (and use of IMF gold) require that all countries agree either due to existing governance structures or to avoid arbitrage by market players.

A. TRANSPORTATION LEVIES

Description: This paper assesses options for maritime and aviation levies coupled with, or independent of, emissions trading schemes (ETS) within each industry.¹³ These measures could be implemented concurrently with aviation ticket fees or levies, either at a flat rate or ad valorem. For approach descriptions and revenue estimates, we draw extensively from the United Nations High-Level Advisory Group on Climate Change Financing (UNAGF) report published in December 2010 and an IMF working paper focused on international aviation taxes.

Overall, we believe that maritime levies display some promise in terms of revenue mobilization as well as providing positive environmental externalities. Aviation ticket levies have a major advantage of permitting cooperative action instead of requiring universal adoption. However, the revenue mobilization prospects are modest without the participation of the United States and other major countries and would not discourage emissions, unless structured in complicated and controversial ways.

Maritime Fuel Emissions Taxes: Under the UNAGF proposal, a limit would be set on greenhouse gas emissions in the international maritime sector along with a pre-determined, fixed price for carbon credits based on international consensus. Maritime carriers would either purchase these credits as emissions offsets (so that as in a cap and trade system the total amount of emissions under the scheme would be fixed) or would simply pay the tax on fuel used. An agreed percentage of revenues from credit sales would be directed towards climate financing. The UN Panel recommends a universal levy as opposed to a differentiated levy given that any differentiation by route or flag would generate inefficiencies as parties would seek to minimize their tax payments. The

¹³ Alternatively, taxes could be imposed on the transport of specific products tied to carbon emissions, such as coal. By illustration, the Indian government began imposing a tax of 50 rupees in July 2010 on every ton of coal mined in the country or imported from abroad. The tax will help to fund research, development and deployment of cleaner and renewable energy technologies in India.

Panel reports that the International Maritime Organization (IMO) likely would not oppose a well-designed scheme, especially if it is built on existing monitoring and recordkeeping requirements.¹⁴ According to the Panel's mid-range estimates, a maritime fuel tax could generate between \$4 billion and \$9 billion annually by 2020.^{15,16} A market-based approach – which would allow for a floating carbon offset credit price – would mobilize a slightly lower level of revenues.¹⁷

Aviation Fuel Levies: We examine two types of aviation fuel-related levies: (1) excise taxes; and (2) emissions taxes coupled with a carbon trading scheme.

Aviation Fuel Excise Tax: Many countries already apply a value-added tax (VAT) on domestic aviation fuel. In practice, the effective taxation rate ranges dramatically across countries.¹⁸ Given a restrictive international legal framework, few countries have taxed aviation fuel used on international flights.^{19, 20} Theoretically, signatory countries could re-open existing international conventions and agreements to explicitly permit

¹⁴ See UNAGF Work Stream 2: Potential Revenues from International Transportation Policy Measures, page 19.

¹⁵ This mid-range estimate is based on the following underlying assumptions: (1) 0.9 to 1.0 Gt of emissions priced at \$25/ton; (2) 30 percent compensation to developing countries; and (3) 25-50 percent of the remaining funds made available for international financing (remainder would be channeled domestically). The UN Panel's low to high-bound estimates range from \$2.4 billion to \$18.5 billion, depending on the market price per ton of carbon emissions, the share of revenues excluded for developing country emissions, and the share of generated funds ultimately used for international climate finance.

¹⁶ The UN Panel's low to high-bound estimates range from \$2.4 billion to \$18.5 billion, depending on the market price per ton of carbon emissions, the share of revenues excluded for developing country emissions, and the share of generated funds ultimately used for international climate finance.

¹⁷ This is based on an average benchmark price of \$25 per ton. Lower revenue volumes would reflect the benefit derived from lower sector emissions.

¹⁸ As of 2006, Norway's taxation rate was equivalent to \$0.16 per gallon. Importantly, it provides a portion of these aviation fuel taxes to UNITAID for health-related programs in developing countries. The Netherlands and Japan also have imposed relatively high fuel taxes. In the United States, aviation fuel is taxed at the state level. On average, U.S. state taxes equaled nearly \$0.05 per gallon from point-of-sale terminals (see appendix 3 for a breakdown of U.S. aviation taxes and fees overall).

¹⁹ The legal framework for international aviation largely excludes aviation fuel from items that may be subject to taxation measures. Under the 1944 Convention on International Civil Aviation, signatory states are prohibited from imposing customs duties, inspection fees, or other national or local charges on aviation fuel on board of the aircraft at the time of arrival. Source: Convention on International Civil Aviation, Dec. 7, 1944, 61 Stat. 1180, 15 U.N.T.S. 295. The Chicago Convention has 188 signatories, which include those countries that account for the majority of international civil aviation.

²⁰ Many bilateral air service agreements include a legally-binding commitment to refrain from taxing aviation fuel. However, there is no legal impediment to EU member countries imposing aviation fuel taxes on flights between themselves. Under Directive 2003/96, EU member states can impose such taxes by mutual agreement.

international aviation fuel taxes. However, this would be time intensive and complex (particularly with bilateral agreements), which makes this highly unlikely in the near- or medium-term. According to the IMF, an aviation fuel excise tax of \$0.20 per gallon could yield up to \$9.5 billion annually based upon: (1) aviation fuel usage figures in 2003; and (2) global imposition on all domestic and international flights.²¹

Aviation Fuel Emissions Tax: Under an alternative approach, a cap could be placed on greenhouse gas emissions generated through aviation fuel usage. Subsequently, carbon offset credits would be auctioned at an international market-based price. Based on UNAGF analysis, this approach could generate roughly \$2 billion annually by 2020.²² As with the maritime fuel emissions tax, the UN Panel argues that a universally-imposed levy would be more politically acceptable than an approach differentiated by country or carrier.²³ Some industry players may prefer a cap and trade-type approach (i.e., floating carbon offset price) to a fuel excise tax since it allows greater flexibility via permit trading and grandfathering.²⁴

Aviation Ticket Taxes: In 2006, several countries – led by France – committed to apply modest levies on airline tickets to finance HIV/AIDS, tuberculosis, and malaria programs in developing countries.²⁵ To date, seven countries have implemented a “solidarity” tax on airline tickets – including: Chile, Côte d'Ivoire, France, Madagascar, Mauritius, Niger,

²¹ The IMF also provides two alternative revenue estimates. If a fuel tax were applied globally on international flights only, then annual revenues could be roughly \$6 billion. If applied on Europe-wide flights only, then annual revenues could reach nearly \$3 billion. Source: IMF (2006)

²² The UNAGF Panel estimates that this approach could generate between \$1 and \$6 billion. This assumes application to both passenger and cargo flights. Actual revenues would depend on the: (1) total emissions reduction cap for the industry; (2) percentage of permits auctioned and the international carbon price; (3) percentage of generated funds committed to GPG finance; and (4) percentage of emissions exempted via developing countries.

²³ A differentiation approach could pose a number of challenges, including evasive behavior (i.e. re-routing) and compliance with broader global emissions agreements (Kyoto Protocol). Given this, the scheme's environmental and economic integrity could be compromised in part.

²⁴ While this paper does not provide an extensive analysis of an aviation ETS, further details can be found in the UNAGF work-stream paper at <http://www.un.org/wcm/content/site/climatechange/pages/financeadvisorygroup>.

²⁵ Apart from the aid-focused solidarity tax, the majority of other developed and developing countries already apply a wide variety of aviation-related charges for both domestic and international travel, such as: airport charges, arrival taxes, and departure charges. Across countries, there is a wide disparity in the effective level of taxation and the population subject to the respective charges (i.e., domestic residents, foreigners, or traveler class). For instance, the United Kingdom, Mexico and Colombia impose significant taxes on international travel. For additional details, see IMF (2006), *Indirect Taxes on International Aviation*, IMF Working Paper 06/124.

and South Korea.²⁶ The tax is applied to domestic and international flights departing from their respective territories and fixed rates vary across participating countries.²⁷ In 2009, the solidarity air ticket tax mobilized roughly \$170 million – with France accounting for nearly 95 percent of the total. Since its inception, it has generated nearly \$700 million after tax collection expenses.²⁸ Tax proceeds are channeled to UNITAID, an international drug purchasing facility housed at the World Health Organization. UNITAID purchases AIDS and other drugs for use in over 90 low-income developing countries.²⁹

Under a global airline ticket tax scheme, the UNAGF estimates that revenues could total between \$0.5 billion and \$5 billion annually by 2020.³⁰ Alternatively, the IMF has estimated that revenues could reach roughly \$10 billion through an average tax of \$6 per passenger.³¹ If the ticket tax were applied only in Europe, the IMF estimates that revenues could reach up to \$2.4 billion annually.³²

Possible Resource Usage: Globally, there are no inherent limitations on how these international transportation-related levies could be used. Sponsoring governments have wide latitude in determining individually how and where to channel their tax receipts – including for domestic purposes. It is worth noting again that the precedent for channeling aviation ticket and fuel tax proceeds for a non-domestic purpose have been established.

²⁶ Administratively, passengers pay the levy upon purchase of the air tickets – which typically is added to existing airport taxes. Airline companies are responsible for declaring and collecting the levy.

²⁷ For example, France imposes an excise tax of €40 on all international business class tickets. However, Chile imposes a \$2 tax on the same class of travel. Passengers in transit are exempt from the solidarity ticket tax.

²⁸ According to UNITAID, solidarity ticket tax proceeds account for roughly 70 percent of its operational revenues. Between 2006 and 2009, voluntary contributions totaled \$992 million. Utilizing the 70 percent share, the solidarity tax would account for roughly \$694 million of UNITAID's total revenues. Source: UNITAID, *2009 Annual Report*.

²⁹ Ibid.

³⁰ The UNAGF Panel argues that the most effective method for a levying a ticket tax would be an emissions-based *ad valorem* tax. Therefore, the tax would be linked to a pre-determined carbon price and theoretically would correct for any possible 'over-taxing' relative to the externality associated with aviation fuel emissions released per passenger. The AGF's revenue estimates reflect this emissions-based method of calculation, rather than a flat tax or *ad valorem* tax on the ticket price.

³¹ IMF (2006)

³² In this context, Europe encompasses EU members and non-member countries in Western and Eastern Europe, including Russia. For estimation, we assume that international travelers from Europe account for about 33 percent of international aviation passengers.

U.S. Legislative Requirements: As with any new tax measure, imposition of new nation-wide maritime or aviation taxes would require new congressional legislation. The probability that the U.S. Congress would pass these taxes and earmark a significant portion of revenues for non-domestic usage is very low in the current political environment.

Global Externalities: Maritime and aviation travel contributes to local air pollution through the release of nitrous oxide, carbon monoxide, hydrocarbons, sulphates, and soot aerosols.³³ It also contributes to global warming through carbon dioxide emissions – though relatively modestly compared to other sources of carbon and other greenhouse gas emissions. For example, the 1999 Intergovernmental Panel on Climate Change estimated that aviation would account for only about 5 percent of global carbon emissions by 2050 (one to two percentage point increase from mid-2000 levels). While this is a very small share, it would not be insignificant in absolute terms if other emission sources decline. As designed, the emissions-based tax options applied to either the aviation or maritime sectors would not only mobilize financial resources, but also establish incentives for operators to lower greenhouse gas emissions. On the other hand, maritime and aviation levies at higher levels could reduce international trade and tourism.

Approach Strengths: Since the mid-2000s, major donor governments have explored and debated the potential role of aviation taxes. Maritime taxes have not received broad, senior-level attention until more recently. Key strengths or advantages include:

- (1) *Linkage with Global Public Goods:* Due to fuel-related emissions, there is a case for using aviation or maritime levy proceeds to finance climate change mitigation and other GPGs.
- (2) *Low Price Elasticity:* The maritime and aviation sectors' relatively low estimated price elasticity of demand indicates that levies could have a marginal dampening effect on overall maritime trade volumes.³⁴

³³ There remains some uncertainty and debate as to the specific environmental costs associated with the burning of aviation fuel (Parliamentary Office of Science and Technology, 2003). Air travel produces several other types of pollution – such as noise and water contamination. Local administrative bodies could address these costs through take-off and landing fees – which could be used to finance environmental or community-based expenditures.

³⁴ For a detailed calculation of shipping levies and trade elasticities, see the UNAGF Work Stream, available online at <http://www.un.org/wcm/content/site/climatechange/pages/financeadvisorygroup/pid/13300>

- (3) *Tax Administration*: Preexisting levies (i.e., security fees, departure fees, etc.) illustrate that aviation and maritime levies are feasible and entail relatively modest administrative expenses. For a universally-implemented ETS, compliance requirements would be relatively simple.³⁵
- (4) *Offsets Flexibility*: An ETS-type approach for either maritime or aviation fuel would provide operators with flexibility to purchase carbon credits from other sectors.
- (5) *Revenue Mobilization*: Maritime and aviation proceeds would present a reliable source of finance. They are best seen as an option unless and until there is a globally agreed tax or cap at which time they would be absorbed into a larger trading or tax system.

Approach Weaknesses: Legal and policy limitations have prevented more widespread imposition of additional levies by developed and developing countries.

- (1) *Legal Restrictions*: In the case of aviation excise fuel taxes for international flights, the Chicago Convention and bilateral air service agreements pose a significant obstacle. Some U.S. bilateral agreements might also include legal restrictions on air ticket taxes.
- (2) *Collective Action Challenges*: Except in the case of aviation ticket taxes, which exist already on a voluntary basis for some countries, the other transportation levies (with or without trading), would have to be universally agreed. Agreement would also be needed on the proportion of nationally collected revenue to be used for international or global programs as opposed to domestic purposes.
- (3) *Impact on Airline Carriers and Tourism*: The financial health of many airline carriers remains weak. High fixed and variable costs (mainly fuel) – coupled with constrained consumer demand – have prevented a full-scale recovery after sector-wide difficulties in the early- and mid-2000s. Depending on their ultimate size, new aviation levies could provide an additional headwind against sector-

³⁵ According to the UNAGF, compliance requirements would be especially simple if built using the existing framework of previously agreed upon monitoring and bookkeeping requirements of the International Maritime Organization (IMO).

wide recovery and health. Effects on tourism might also be a problem, particularly for small island economies and other countries highly dependent on that industry.³⁶

- (4) *Industry Opposition*: Though the maritime industry has signaled the levies could be implemented at low cost, both aviation and maritime players are likely to object to a tax that does not cover other emission-generating industries, such as power generation or road transport.
- (5) *An Earmarked Tax*: Utilizing transaction tax proceeds for non-transportation related uses violates the textbook view that earmarked taxes are bad in the first place and worse if the use of revenue raised is unrelated to the sector taxed.
- (6) *Domestic Revenue Collection and Competition with Provision for AIDS and Other Diseases in Poor Countries*: In the case of the ticket tax which need not be universal, political competition for resource usage beyond the current arrangement – which assigns the resources to UNITAID – likely would scuttle the tax itself in a country like the United States. The key question is whether “global” uses could be expanded and whether that would affect resources for AIDS medications and other lifesaving drugs.

B. CURRENCY AND FINANCIAL TRANSACTION TAXES

Global development advocates have for decades focused on taxing various types of financial transactions. The most attractive advantage is their high transaction volume and, by extension, the potential to raise large amounts of revenue through a very low tax rate. The “Robin Hood” tax website includes extensive discussion and commentary on the revenue potential of these taxes, while emphasizing their likely progressive nature. In this manner, if the tax was passed on to “consumers”, they mostly would be

³⁶ In practice, the impact on small island economies is somewhat ironic. The long-term implications of climate change (and rising sea levels) pose dramatically higher economic cost implications. While an air ticket levy could have a dampening effect on their tourism-dependent economies in the near-term, it could help to reduce the structural economic costs over the medium- to long-term.

banks and other financial firms (including those doing proprietary trading) and presumably relatively well-off investors.³⁷

In this section, we briefly examine the two most widely discussed variations: (1) financial transactions taxes; and (2) currency transaction taxes (variations of the “Tobin tax”).³⁸ Among the transaction taxes, we see the most merit in what is called the centrally collected multi-currency tax (at a low rate of 0.005 percent).³⁹

We assess the advantages and disadvantages of these taxes assuming a very low rate – one that is unlikely to throw sand in the wheels of international capital flows, which was an initial objective of a Tobin tax (see below), or to check what might be speculative transactions. Its sole objective would be raising revenue.⁴⁰

Currency Transaction Tax (CTT): Originally proposed in 1978, the so-called Tobin Tax was intended to apply an internationally-uniform tax on all spot currency conversions. The tax would be proportional to the size of the transaction and be administered by individual governments. The central objective was to improve national monetary policy effectiveness in a post-fixed exchange rate environment. Tobin argued that increased mobility of private capital could lead to excessive cross-border movements – including those of a speculative nature – which would produce significant economic costs.⁴¹ Although Tobin acknowledged distortional and allocation costs, he argued that they would be small compared to the macroeconomic costs of excessive international capital mobility.⁴²

Recent currency-related transaction tax proposals have focused on revenue mobilization as opposed to reducing speculative flows or broader financial and macroeconomic policy issues. Given this, the proposed tax would be set at a very low rate in order to

³⁷ See <http://www.robinhoodtax.org.uk/>. For a skeptic’s view of these taxes for development purposes, see Owen Barder’s blog post and comments at <http://www.owen.org/blog/4130>. Barder does not address the logic of these taxes for financing of GPGs as distinct from development assistance.

³⁸ We also examined the possibility of utilizing bank levies to finance GPGs. Due to a number of political, economic, and operational factors, we believe that they do not present a viable option for financing development-related GPGs (see appendix 4).

³⁹ Taskforce on International Financial Transactions for Development, 2009.

⁴⁰ At higher tax rates, there is not any consensus on whether the ultimate impact would be positive or negative in net terms. Some argue that high rates would discourage disruptive, speculative transactions. Others argue that they would discourage financial risk mitigation (through derivative contracts) and increase businesses’ cost of capital.

⁴¹ Tobin (1978)

⁴² *Ibid.*

minimize market distortions. According to Schmidt (2008), a tax of 0.005 percent on the four most widely traded currencies (U.S. dollar, Euro, Yen, and Pound) could produce roughly \$33 billion annually.⁴³ However, earlier studies suggest lower annual receipts ranging between \$17 billion and \$24 billion.⁴⁴ A new study by the Institute for Development Studies estimates annual receipts of roughly \$26 billion.^{45, 46}

Centrally Collected CTT: A 2009 international task force report includes revenue mobilization estimates for a multi-currency transaction tax collected centrally.⁴⁷ The tax would be applied to all transactions – regardless of currency denomination – that are settled through the Continuous Linked Settlement (CLS) system. The CLS system, which is operated by the CLS Bank, is a process by which the largest global financial institutions manage settlement of foreign exchange.⁴⁸ Currently, the CLS system is available to seventeen foreign currencies, settles an estimated 55 percent of all spot, swap and forward transactions, and has an average daily value of payment instructions of \$3.8 trillion.⁴⁹ The estimates range between \$25 and \$34 billion annually based on different spreads and price elasticities.⁵⁰

Financial Transaction Tax: Building on a currency transaction measure, a financial transaction tax could also include equities, bonds, and derivatives. This approach would not put currency markets at a relative disadvantage to other asset classes. According to the Austrian Institute of Economic Research, a comprehensive financial transaction tax of 0.01 percent could generate between 0.8 percent and 2.0 percent of global GDP (\$410 billion to \$1.06 trillion).⁵¹ Derivatives-based revenues account for the vast

⁴³ Schmidt (2008)

⁴⁴ Nissanke (2004)

⁴⁵ McCulloch and Pacillo (2010)

⁴⁶ The dates of these studies are material given the significant expansion of the global foreign exchange market over time. Therefore, appropriate caution should be applied to the revenue range estimates of each study.

⁴⁷ Taskforce on International Financial Transactions for Development, 2009. Also see: Nassiry and Wheeler (2011).

⁴⁸ As of 2009, the CLS Bank had 73 shareholders and 62 settlement members as well as 4,576 Third Party participants (411 banks, corporates and non-bank financial institutions and 4,165 investment funds) that participate in the system.

⁴⁹ For additional details, see <http://www.cls-group.com/About/Pages/default.aspx>. The 17 currencies include: US Dollar, Euro, UK Pound, Japanese Yen, Swiss Franc, Canadian Dollar, Australian Dollar, Swedish Krona, Danish Krone, Norwegian Krone, the Singapore Dollar, the Hong Kong Dollar, the New Zealand Dollar, the Korean Won, the South African Rand, the Israeli Shekel and the Mexican Peso.

⁵⁰ Taskforce on International Financial Transactions (2009). See endnotes 31 through 37 for more detail on the CLS Bank and on studies concluding that a low tax rate would not reduce the amount of centrally settled transactions because of the reductions in costs and risks associated with the central settlement process.

⁵¹ Schulmeister, S., Schratzenstaller, M., Picek, O. (2008)

majority of these tax proceeds. Without them, the related tax revenue could range between \$72 billion and \$80 billion annually.⁵² By extension, the Austrian Institute's methodology would suggest that a financial transaction tax of 0.005 percent would produce between \$210 billion and \$530 billion annually (roughly \$35 billion to \$40 billion without derivatives). As noted previously, significant caution should be given to these revenue estimates due to a number of methodological factors.⁵³

U.S. Legislative Requirements: As with any new tax measure, imposition of currency and/or more general financial transaction-related taxes would require new congressional legislation. The U.S. Treasury has discouraged discussion of transaction tax measures in international fora.

Approach Strengths – the Centrally Collected Multi-Currency Tax: There is a long, exhaustive, and contentious discourse on the relative pros and cons of imposing taxes on certain types of financial transactions.⁵⁴ We focus on the strengths and weaknesses of the centrally collected multi-currency tax, with some notes comparing it to other financial transactions taxes. A few advantages of a modest (0.005 percent) centrally collected currency tax are:

- (1) *Revenue Mobilization Potential:* It likely would raise significant sums of money, with little projected impact on the size and volume of centrally-settled transactions because of the offsetting existing advantages of central settlement.
- (2) *Low Administrative Cost:* Administrative costs would be low. This also would be true of a financial transaction tax; administrative costs associated with the British stamp tax total roughly 0.21 pence for every pound collected (in contrast to 1.24 pence for the income tax).
- (3) *Collective Collection:* By avoiding national collection and disbursement (as would be the case for the bulk of any financial transactions tax), the centrally collected tax overcomes the so-called domestic revenue problem.

⁵² UNAGF estimates for financial transaction tax proceeds are more modest (\$2 billion to \$27 billion), depending on numerous factors, such as: 1) tax rates (0.001 per cent to 0.01 per cent); 2) volume of transactions; and 3) percentage of revenues earmarked for climate financing (25 to 50 per cent). UNAGF calculations do not include derivatives-based revenues.

⁵³ Honohan and Yoder (2010)

⁵⁴ For additional details, see IMF (2010), *A Fair and Substantial Contribution by the Financial Sector: Final Report for the G-20*.

(4) *Equitable Burden Sharing to Finance a Global Public Good*: The impact of the tax would be proportional across countries and currencies based on level of engagement in international markets. It would represent a tax associated with the benefits obtained from use of the global commons that a liberal international order provides. In contrast, a financial transactions tax would fall largely on the United States, the United Kingdom, and a handful of other countries.⁵⁵

Approach Weaknesses for a Centrally-Collected Multi-Currency Tax: Weaknesses or challenges include:

- (1) *Cyclical Revenues*: Tax receipts would be volatile and pro-cyclical – with greater receipts in economic expansions and reductions in downturns. Of course, this shortcoming could be addressed through expenditure smoothing over time.
- (2) *Collective Action Challenge*: Virtually all countries involved in international trade and capital movements would need to agree on the tax. This also is the case without central collection for any currency or financial transactions tax. All countries would need to impose the tax measure; otherwise, there would be arbitrage involving non-participating states.⁵⁶
- (3) *Potential Inconsistency with Existing Treaties*: Transaction taxes may be incompatible with the General Agreement on Trade in Services (GATS) as well as the Treaty on the Functioning of the European Union.⁵⁷ If a new international treaty were needed to override existing agreements, it would imply a long and complex international negotiation.

⁵⁵ For example, private companies and investors in the United States, United Kingdom, Japan, France, Germany, and several other countries may be much more integrated into the global financial system in terms of cross-border flows. They would provide the bulk of financing while other companies that are not integrated into the global system would remain largely unaffected.

⁵⁶ McCulloch and Pacillo (2010) argue that individual countries could impose financial transactions taxes due to centralization of transaction settlement. They do not, however, address the critique that individual country measures would result in arbitrage involving non-participating states.

⁵⁷ Article 63 of the Treaty on the Functioning of the European Union provides for the free movement of capital and payments between Member States and between Member States and third countries. Article XI of the GATS provides that World Trade Organization members cannot apply any restrictions on international transfer and payments for current transactions relating to their specific commitments.

- (4) *An Earmarked Tax*: Utilizing transaction tax proceeds for non-financial uses violates the textbook view that earmarked taxes are bad in the first place and worse if the use of revenue raised is unrelated to the sector taxed.

C. IMF SPECIAL DRAWING RIGHTS

SDR Overview: One potential resource mobilization approach is the direct or indirect utilization of Special Drawing Rights (SDRs). SDRs are an international reserve asset created by the IMF in 1968 to supplement other reserve assets of member countries.⁵⁸ They are valued on the basis of a basket of currencies and can be used in a variety of transactions and operations among official holders. Under its Articles of Agreement, the IMF may allocate SDRs to members in proportion to their IMF quotas.⁵⁹ Put differently, SDRs are established through a collective global decision-making process (i.e., the IMF Governors) for a collective purpose (i.e., international financial liquidity and stability).

In financial terms, the IMF administers each member country's SDR account. These members pay an applicable SDR interest rate on their allocations while also receiving interest payments on their actual SDR holdings.⁶⁰ This process produces a revenue-neutral outcome as long as a member country's SDR allocation and holdings are the same.⁶¹ If a member's SDR holdings rise above its allocation (because it has acquired SDRs from other SDR holders), then it earns net interest on its excess SDRs. If a member country holds fewer SDRs than its allocation (having sold or transferred SDRs to other holders), then that country pays interest on its shortfall.

Over time, the IMF has authorized, implemented, and/or agreed to four SDR allocations for its member countries (see figure 5 below). In August 2009, the IMF approved an unprecedented allocation of SDR 161.2 billion (roughly \$240 billion) to member

⁵⁸ SDRs represent a potential claim on the freely usable currencies of IMF members, which may be exchanged in times of need. Currently, the value of the SDR is determined by a basket of four currencies (euro, yen, pound sterling, and US dollar). See <http://www.imf.org/external/np/exr/facts/sdr.htm>. Participation in the SDR Department is limited to IMF member countries and prescribed holders. Currently, all IMF members are participants.

⁵⁹ For additional details, see IMF (2010) *IMF Quotas Factsheet*.

⁶⁰ The SDR interest rate determines the interest charged to members on non-concessional IMF loans, the interest paid/charged to members on their SDR holdings, and the interest paid to members on a portion of their quota subscriptions. The SDR interest rate is determined weekly and is based on a weighted average of representative interest rates on short-term debt in the money markets of the SDR basket currencies.

⁶¹ The IMF does charge a modest levy to cover the operational costs of its SDR Department. Recently, this levy has amounted to roughly one-hundredth of one percent of the cumulative allocation of each participant.

countries.⁶² This allocation was designed to expand international reserves and liquidity in response to the global economic crisis. Of this, nearly \$150 billion was distributed to developed countries.⁶³ (Also in August 2009, the IMF executed an additional special allocation through an amendment to its Articles of Agreement, which primarily benefited members that had not received earlier SDR allocations – such as countries of the former Soviet Union. That increased the total cumulative allocations to SDR 204 billion).⁶⁴

Figure 5 – Historical SDR Allocations

Time Period	SDR Allocation	Allocation Type
1970-1972	SDR 9.3 billion	General Allocation
1979-1981	SDR 12.1 billion	General Allocation
August 2009	SDR 161.2 billion	General Allocation
August 2009	SDR 21.5 billion	Special Allocation (4th Amendment)

Source: IMF

An IMF member country may use SDRs freely, without the requirement of need, to obtain an equivalent amount of currency through a voluntary agreement with another member country. For these SDR transactions, the IMF acts as an intermediary between member countries and those SDR holders that have voluntarily agreed to participate in SDR transactions. By illustration, Uganda could decide to sell some of its existing SDR 144 million holdings to China in exchange for U.S. dollars. In turn, the Bank of Uganda could decide to hold these U.S. dollars as reserves and/or pursue expansionary fiscal policies (i.e., purchase Ugandan treasury bills). However, the Ugandan government would have lower SDR holdings after this transaction and would therefore pay interest

⁶² The third general allocation was approved on August 7, 2009 and was enacted on August 28, 2009. The U.S. denominated figure is based on the August 2, 2010 exchange rate of 0.6639 SDRs per US dollar.

⁶³ The equivalent of nearly US\$100 billion of the general allocation went to emerging markets and developing countries, of which low-income countries received over US\$18 billion. IMF (2009).

⁶⁴ The special SDR allocation became effective for all members on August 10, 2009 when the IMF certified that at least three-fifths of the IMF membership (112 members) with 85 percent of the total voting power accepted it. On August 5, 2009, the United States joined 133 other members in supporting the amendment. The special allocation was later enacted on September 9, 2009. Originally, the amendment for the special one-time allocation of SDR 21.5 billion was proposed in 1997. The central objective was to increase SDR allocations for countries that joined the IMF after previous SDR allocations. By 2009, there were 41 countries which had no SDR allocation. Most of these were former Soviet Union countries. More specifically, the special allocation equalized the ratios of members' cumulative SDR allocations relative to their IMF quotas, and in the process every member of the IMF was allocated some additional SDR. See www.imf.org/external/np/sec/pr/2009/pr09283.htm and www.imf.org/external/np/pp/eng/2009/060909.pdf.

on its shortfall.⁶⁵ The Chinese government would receive an increase in the interest payments on its higher SDR holdings.

As of June 2010, only one member country (Tuvalu) had SDR holdings equivalent to its allocation (see appendix 5 for details). This illustrates that SDRs have been traded regularly over time. In the event of SDR market illiquidity, the IMF can activate a formal designation mechanism. Under this mechanism, members with sufficiently strong external positions are designated by the IMF to buy SDRs with freely usable currencies up to certain amounts from members with weak external positions, but this mechanism has not been used for over three decades.⁶⁶

SDR-Based Financing Approaches – Description: SDR-based financing has been done or discussed in one of two forms: (1) monetizing SDRs, either through SDR on-lending or in freely usable currencies following conversion – several countries have agreed to lend a portion of their SDRs to the Poverty Reduction and Growth Facility, which provides concessional loans to low-income members, such as Haiti⁶⁷; and (2) committing SDRs to support the capitalization of a third-party entity. The latter has been proposed in an IMF staff paper, which we discuss below. Of these two, we focus on the capitalization approach since it could mobilize significant resources at a low cost to traditional donors.⁶⁸

SDR Capitalization Approach: Under this approach, any member country wishing to participate would make an ongoing commitment of a limited portion of their SDR holdings (e.g. 10 percent) to capitalize a third-party entity.⁶⁹ (10 percent of SDR holdings of the developed plus the many advanced developing countries would amount

⁶⁵ Uganda's SDR allocation currently totals roughly 173 million. It already has a holdings deficit of roughly SDR 29 million. With an SDR interest rate of 0.30 percent, it would provide quarterly interest payments to the IMF totaling roughly \$130,000 annually.

⁶⁶ IMF (2010), *Special Drawing Rights Factsheet*. See <http://www.imf.org/external/np/exr/facts/sdr.htm>. Under the "designation" mechanism, countries wishing to convert their SDRs must claim a balance-of-payments need.

⁶⁷ In September 2010, four countries (Japan, France, UK, and China) agreed to provide the IMF with SDR 5.3 billion (about \$8 billion) to support new lending to low-income countries. Note Purchase Agreements – as the first ever to fund the IMF's concessional lending – were signed with the Japanese government for SDR 1.8 billion (approximately \$2.7 billion), the United Kingdom for SDR 1.33 billion (roughly \$2 billion), the People's Bank of China for SDR 800 million (roughly \$1.2 billion), and the Banque de France for SDR 1.33 billion (approximately \$2 billion). For additional details, see <http://www.imf.org/external/np/sec/pr/2010/pr10340.htm>.

⁶⁸ See appendix 6 for information on a SDR monetization approach.

⁶⁹ The question has been raised whether a modest level of paid-in capital would be required. We do not think so but in the end that would depend on potential contributors' views and of course on market acceptance.

to about \$15 billion.) This entity would offer bonds on international capital markets backed by its SDR reserves. Assuming that the entity does not incur substantial losses, the SDR capital would never be monetized or formally utilized. As a result, sponsoring governments would not incur SDR interest expenses.⁷⁰

Bredenkamp and Pattillo (2010) proposed that (only) developed countries utilize their portion of their latest general allocation of SDRs (over \$100 billion) to provide capital for a new Green Fund.⁷¹ The Green Fund could be simply a resource mobilization instrument that would disburse to existing climate funds at the multilateral banks and/or through any new agreed Global Green Fund. The bond proceeds raised against the SDR capital, which would command AAA, would be used to help finance commercially viable (though sometimes at lower returns than so-called dirty alternatives) climate mitigation investments through loans, guarantees, and other financial backing.⁷² Bredenkamp and Pattillo assume that the resulting official financing of investments could be leveraged by private sector equity and lending at a ratio of 10:1.⁷³ The recent UN AGF report and related background documents suggest a more modest leveraging ratio of 3:1 or 4:1.⁷⁴

Possible Resource Usage: In the context of a SDR-backed financing option, there are no explicit restrictions on how IMF member countries use their SDR holdings.⁷⁵ Sponsoring governments of a capitalized fund (such as a Green Fund) would have wide latitude in determining how and where to channel their holdings – certainly including financing climate and other global public goods. IMF member countries would of course be setting the precedent of utilizing a portion of their existing SDR holdings in the interest

⁷⁰ In the event of significant losses the SDRs would have to be monetized to pay creditors and bondholders. In this event, the sponsoring governments would incur interest expenses on a proportional basis.

⁷¹ Bredenkamp and Pattillo (2010).

⁷² Bredenkamp and Pattillo also envision that the Green Fund would finance adaptation program through other channels.

⁷³ They assumed that default rates would be normally distributed around a mean of 5 percent, with a standard deviation of 1.5 percentage points. Under these assumptions, the probability that their proposed capital base of \$120 billion would be sufficient to cover prospective losses on a \$1 trillion lending portfolio would be 99.9 percent.

⁷⁴ However, the UN Panel reports that political acceptability would be limited for an SDR-financed climate fund, owing to “lack of consensus on the appropriate role of SDRs in the international monetary system.” For additional details, see <http://www.un.org/wcm/content/site/climatechange/pages/financeadvisorygroup/pid/13300>.

⁷⁵ Under Article XIX of the IMF Articles of Agreement, the Fund has adopted decisions on SDR transactions that are permissible, such as: settlement of financial obligations, loans, pledges, security for performance of a financial obligation, swap and forward operations, and donations.

of “climate stability” and of other GPGs; our argument is that these are fundamental to long-term global financial stability.

Cost Implications: Sponsoring governments’ costs ultimately depend upon the specific structure of the SDR-based approach as well as country-specific factors, such as budgetary system regulations. The idea is that the structure would be one in which the SDRs that countries allocate would be viewed as completely unencumbered and thus still treated as each sponsoring country’s reserve assets. If that structure were not adopted fully, then there could be up to three types of costs: (1) fixed budgetary costs related to committing and scoring SDR allocations; (2) variable SDR interest expenses; and (3) foreign reserve requirement costs.

First, IMF member countries typically record SDR holdings as foreign reserves.⁷⁶ For some countries, offering these holdings directly or indirectly to a special entity could entail budgetary costs. The Breckenkamp and Pattillo proposal builds in sufficient capital to ensure the SDRs committed by countries would always be available to them and would thus continue to qualify as reserve assets – fulfilling the core global financial stability mandate of individual member countries’ SDR holdings.⁷⁷ The ultimate budgetary impact would depend on: (1) how member country governments “score” capital commitments on their budgets; and (2) the timeframe over which the SDRs would be provided or committed.⁷⁸

Second, governments could incur interest expenses were the SDRs “called” by the third party entity in excess of their preexisting SDR holding levels.⁷⁹ By illustration, sponsoring governments would have incurred approximately SDR 380,000 in interest expenses between 2000 and 2010 for every SDR 1 million worth of deficit SDR holdings that were provided upfront.⁸⁰ The costs would generally be borne by taxpayers.⁸¹

⁷⁶ SDR allocations also are recorded as a long term liability.

⁷⁷ This assumption likely would require a formal determination by the relevant IMF officials. For example, it is unclear that committed SDRs could be defined as unencumbered and therefore as accessible foreign reserves.

⁷⁸ Budgetary “scoring” often is based upon the probability that government resources will be required at a future date. However, the SDR commitment timeframe would determine whether the respective budgetary costs would be incurred immediately or be spread over a number of years (commensurate with a multi-year commitment schedule).

⁷⁹ The country-by-country impact would depend upon preexisting SDR holding levels. For example, some IMF shareholders have large SDR holding surpluses (example – United States). If the “called” SDR capital does not exceed these preexisting surpluses, then the respective sponsoring government would not incur SDR interest expenses.

⁸⁰ More specifically, this assumes that the respective country would have incurred a deficit of SDR holdings compared to its allocation and, therefore, was exposed to variable SDR interest payments over the entire time period. The

However, as we propose below, in the highly unusual event of a “call” on sponsoring governments’ SDRs (there has never been a call on IMF or World Bank capital by their creditors), they could plan to cover interest costs through coordinated implementation of other collective financing approaches, such as IMF gold sales. Such an agreement could be structured a number of different ways, such as setting an interest rate expense ceiling for governments or offsetting a specific percentage point volume of expenses (e.g., covering 2 percentage points of the overall SDR rate).

Lastly, some governments conceivably could confront broader foreign reserve adequacy issues. For them, using their SDR holdings could require a proportional increase in other reserve currencies. Overall, SDRs account for only 6 percent of developed plus advanced developing countries’ official reserve holdings (see appendix 7 for details).⁸² So it is unlikely that reserve substitution costs would probably be an issue.

U.S. Legislative Requirements: Utilizing SDRs to directly or indirectly finance GPG programs almost certainly would require congressional amendments to existing legislation. There are several overlapping U.S. legislative acts that govern the allocation and usage of SDR holdings. Under the Special Drawing Rights Act of 1968, the U.S. Congress gave the Executive Branch authority to vote for SDR allocations that meet specific conditions.⁸³ Currently, SDRs allocated by the IMF or acquired by the U.S. Government are considered resources of the Exchange Stabilization Fund (ESF) of the U.S. Treasury.⁸⁴ As of April 2010, SDR holdings accounted for approximately 55 percent of the ESF’s assets.⁸⁵ In accordance with the Special Drawing Rights Act, the ESF (through the Secretary of the Treasury) can monetize SDRs by issuing certificates to the

actual SDR interest payments (SDR 380,000 in this example) were calculated utilizing historical SDR interest rates between 2000 and 2010. This approach is designed to simulate the historical medium- to long-term interest costs associated with a SDR holdings deficit as an indicative illustration of potential costs.

⁸¹ This may require an amendment to the official definition.

⁸² According to the IMF, the following countries are classified as “advanced”: Australia, Austria, Belgium, Canada, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, Singapore, Slovak Republic, Slovenia, South Korea, Spain, Sweden, Switzerland, United Kingdom, and United States.

⁸³ Under Section 6 of the Special Drawing Rights Act, Congress must give its consent before the United States can vote for any allocation of SDRs in any basic period that would be equal to or greater than the existing U.S. quota in the Fund.

⁸⁴ For more details, see Congressional Research Service (1999).

⁸⁵ The ESF held \$55.7 billion worth of SDRs and slightly more than \$100 billion in total assets.

Federal Reserve.⁸⁶ In turn, the ESF may use these resources to finance exchange stabilization operations. Historically, the ESF has provided short-term currency swap agreements or loans to developing countries experiencing a currency or debt crisis.⁸⁷ There are also precedents of medium-term loans as well as loan guarantees.⁸⁸

Given the inconsistency with the ESF's mandate, utilization of SDRs for the purpose of capitalizing a GPGs facility could raise policy concerns for the U.S. Even if only a modest portion of U.S. SDR holdings were committed, and even if the commitment were structured so that it would in principle be totally unencumbered, the U.S. Treasury Department (and U.S. Congress) likely would be concerned about tying up ESF assets that would otherwise provide stability in the event of a financial crisis overseas.

Global Externalities: Spillover benefits depend upon the specific structure and programmatic focus of the SDR-backed financing approach. For example, the Bredenkamp and Pattillo proposal could boost the incentive for establishing a functioning carbon trading market.⁸⁹

Approach Strengths: SDR-backed financing approaches provide a number of strengths in terms of budgetary implications, policy outcomes, and opportunity cost tradeoffs.

- (1) *Resource Maximization:* SDRs offer a significant pool of available capital. Currently, IMF member governments' allocations total approximately SDR 204 billion (\$307 billion) – of which, developed countries hold roughly SDR 129 billion (\$195 billion). We propose a target total of \$15 billion.

⁸⁶ The amount of SDR certificates are limited to the dollar value of the ESF's SDR holdings. The dollar proceeds of such monetizations are assets of the ESF and the SDR certificates are a counterpart liability of the ESF.

⁸⁷ Since the mid-1970s, the U.S. Treasury Department has developed policy criteria to govern ESF operations, such as a requiring an assured source of repayment. Also, it often has linked the availability of ESF financing to a borrower's use of the credit facilities of the IMF – both to support the IMF's role and to strengthen assurances that there will be timely repayment of ESF financing.

⁸⁸ For example, the ESF provided medium-term loans as part of its \$20 billion support package to Mexico in 1995. The ESF guaranteed a BIS loan of \$500 million to Brazil in 1982 and a BIS loan to Yugoslavia for \$75 million in 1983. Under the Gold Reserve Act (amended in 1977), the ESF may not extend a loan or credit to a foreign government for more than six months in any twelve-month period, unless the President provides a written determination to the Congress that "unique or emergency circumstances" necessitate a term greater than six months. See <http://www.treas.gov/offices/international-affairs/esf/basis.shtml>

⁸⁹ Of course, usage of the U.S. Treasury's ESF resources *potentially* could have a negative externality in terms of global economic stability were the U.S. to commit a significant portion of its SDR holdings – which no one is recommending.

- (2) *Existing Asset Base*: Given that IMF member countries already hold significant SDR allocations, new resource mobilization (i.e., new allocations) is not required – in contrast to currency and financial transactions taxes, as well as aviation levies.⁹⁰
- (3) *Limited Foreign Reserve Role*: On average, SDRs account for roughly 6 percent of developed countries’ official reserve assets, and less of the reserve assets of China, India, Brazil and Russia. If their SDR allocations were re-deployed in their entirety, developed countries’ import cover would only decline, on average, from 5.4 months to 5.1 months.⁹¹
- (4) *Modest, if any, Interest Costs*: IMF member countries would incur interest expenses only if their SDR allocation had to be called and exceeded their preexisting holdings. Currently, the SDR interest rate is roughly 0.30 percent. Between 2000 and 2010, the interest rate averaged 3.55 percent.

Approach Weaknesses and Risks: At the same time, sponsoring governments must consider several weaknesses or challenges related to pursuing SDR-backed financing approaches.

- (1) *Upfront Budgetary Cost*: At least in the case of the United States, there could be a decision to score the cost if SDRs were utilized – even if unencumbered.⁹²
- (2) *Non-Monetary System Usage Precedent*: Some IMF shareholders will have concerns about using SDRs for a purpose not immediately linked to monetary policy or global financial stability.⁹³ Though scoring does not require appropriations, it does get included in the budget and would add to the announced deficit.
- (3) *Legislative Requirements*: For the U.S. government, congressional approval would be required. As noted above, the use of ESF funds for non-economic crisis

⁹⁰ Sponsoring governments still would need to secure the required legislative authorization and negotiate actual implementation mechanisms.

⁹¹ Based upon figures as of August 2010.

⁹² The \$100 million U.S. contribution to the IMF NAB in 2009 was scored at 5 percent, which implied a budget “cost” of \$5 million.

⁹³ As noted previously, climate change could present significant risks to the global financial system over the medium- to long-term.

purposes might raise concerns within the U.S. executive branch – independent of views within the U.S. Congress.

- (4) *Interest Expenses*: In the event that SDRs were called, any relevant interest expenses would have to be paid by sponsoring governments until they bought back the SDRs or unless they were paid by other revenue sources such as IMF gold sales. Although, these expenses likely would be modest on an annualized basis.
- (5) *Uncertain Commercial Viability of Funded Programs*: The SDR-based capitalization approach is predicated upon recipient programs and investments yielding a financial return sufficient to cover the fund's cost of capital and administrative expenses. Given this, loans would have to be commercially viable, though they would not need to achieve as high a rate of return as private investors might otherwise demand.⁹⁴

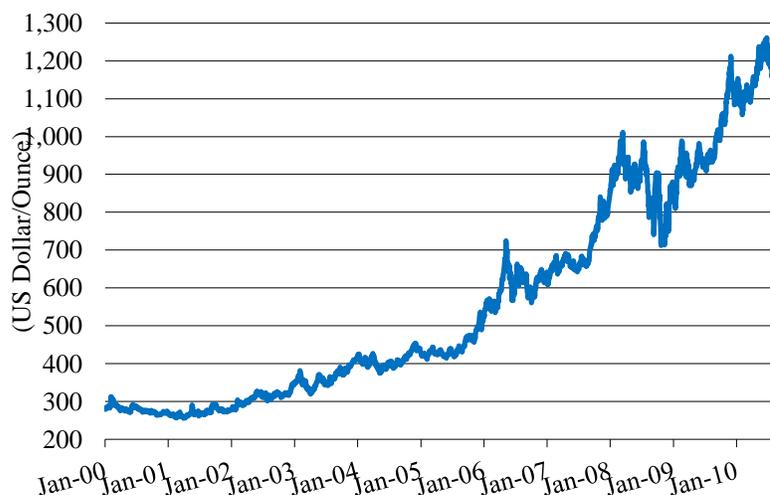
D. IMF GOLD SALES

IMF Gold Overview: As of October 2010, the IMF held 91.5 million ounces (2,847 metric tons) of gold at designated depositories. The IMF's total gold holdings are valued on its balance sheet at SDR 3.4 billion (about \$5.3 billion) on the basis of historical cost. At the current high market price of gold compared to the past, the IMF's holdings amount to approximately \$114 billion – or roughly \$109 billion more than its balance sheet valuation.⁹⁵ The IMF has acquired its gold holdings through several types of transactions over time. First, it required that its member countries provide 25 percent of their initial quota subscriptions and subsequent quota increases in the form of gold. Second, the majority of members' payments of loan interest charges were made in gold prior to 1978. Third, the IMF in the past would facilitate member countries' access to foreign currencies in exchange for gold (again prior to 1978). Lastly, member countries could use gold to repay the IMF for credit previously extended. Through the latter modality, the IMF acquired 13 million ounces following the Second Amendment of the IMF's Articles of Agreement in April 1978. It is these post-1978 gold acquisitions, whose use is governed by the Second Amendment, that are of interest for our purposes.

⁹⁴ This is also the case with loans of the World Bank's International Finance Corporation and other lending to the private sector and other non-sovereigns of the other multilateral banks.

⁹⁵ This assumes a spot price of \$1,250 per troy ounce. Gold spot prices currently are substantially higher than this level.

Figure 6 – Gold Price, 2000-2010



Source: Global Insight

According to the 1978 Second Amendment, the IMF has the authority to: (1) sell gold holdings outright on the basis of market prices; (2) accept gold in the discharge of member countries' loan repayment obligations; and (3) "restitute" gold to members, in particular, it can sell gold at the former official price (SDR 35 per ounce) to those countries that were members as of August 31, 1975 in proportion to their quotas on that date. Each of these transactions requires Executive Board approval by an 85 percent majority. With a voting share exceeding 15 percent, the United States has a de facto veto on those gold operations. The Second Amendment also prohibits utilizing IMF gold for financial operations, such as loans, leases, swaps, or collateral. As a result, any gold-based financing approach requires that IMF gold holdings are first sold outright or "mobilized".⁹⁶

IMF gold holdings do not affect its normal operational lending capacity. Instead, its lending capacity is driven by two forms of usable resources, including: (1) quota-funded currency holdings of financially-strong economies⁹⁷; and (2) borrowing from its own members and the market under explicit member-approved facilities.⁹⁸

⁹⁶ How IMF gold can be "mobilized" as opposed to being sold is explained below.

⁹⁷ The IMF Executive Board reviews these currencies every three months. Industrial countries' holdings of currencies have accounted for virtually all of these currencies historically, though the list also normally includes the currencies of non-advanced countries such as Botswana, China, and India.

⁹⁸ The IMF has at times (for example, during the global financial crisis in 2009), supplemented these resources through two standing borrowing arrangements – the New Arrangements to Borrow (NAB) and the General Arrangements to Borrow (GAB). IMF (2010), *Where Does the IMF Get Its Money Factsheet*. In April 2009, the G-20 and the International Monetary and Financial Committee agreed to increase the resources available to the IMF

IMF-Based Financing Approaches - Description: IMF gold-based financing proposals could take three forms – (1) outright sale of existing gold holdings; (2) “mobilizing” existing gold holdings through off-market transactions; or (3) amending the Articles of Agreement to allow the IMF to utilize its gold holdings to capitalize a third-party entity.

(1) *IMF Gold Sales Approach*: Since its founding in 1944, the IMF has sold gold on several occasions. These transactions have directly financed operations, among other things, as:

- *Currency Replenishments (1957–70)*: The IMF sold gold on several occasions to replenish its holdings of currencies.
- *U.S. Government Securities Investments (1956–72)*: Modest IMF gold holdings were sold to the United States to generate revenue to cover operational deficits. The sale proceeds were invested in U.S. government securities. Later, the IMF reacquired the respective gold from the U.S. government.
- *"Restitution" Sales (1976–80)*: Following agreement by IMF member countries to reduce the role of gold in the international monetary system, the IMF sold roughly 50 million ounces. Half of these sales occurred through member country restitution procedures. Under these procedures, member countries could purchase gold acquired before the Second Amendment (April 1978) at the former official price of SDR 35 per ounce (see additional details below). Restitution sales require support from an 85 percent majority of the total voting power.
- *Auction Sales (1976-1980)*: The remainder of gold sales during this period was executed through market auctions to finance the Trust Fund. This Trust Fund, which later morphed into the Poverty Growth Reduction Trust (PRGT), supported concessional lending to low-income countries.

through immediate financing from members by \$250 billion, and to subsequently expand the NAB by up to \$500 billion and make it more flexible. Members in late 2010 agreed to a new increase in their quotas, which will permanently add to the IMF's lending capacity. For additional details, see IMF (2010), *Standing Borrowing Arrangements Factsheet*.

Most relevant for our purposes, however, is the recent decision to sell gold to help finance non-income generating IMF administrative or operational costs – especially ongoing surveillance of members’ countries financial and macroeconomic policies.

- *Surveillance Activities and Low-Income Country Lending Capacity (2009)*: In September 2009, the IMF Executive Board formally approved the sale of *all* gold holdings acquired after the 1978 Second Amendment (12.97 million ounces) – or roughly one-eighth of its holdings.⁹⁹ The original purpose was to reduce IMF dependence on lending income to cover operational expenses.¹⁰⁰ Prior to the global economic crisis, lending volumes and associated revenues had declined dramatically, thus creating operating budget shortfalls.¹⁰¹ Income generated from the gold proceeds (through investments in conservative instruments) is meant to finance a portion of the IMF budget related to its provision of GPGs (i.e., surveillance).¹⁰² Following the onset of the global economic crisis, the IMF Executive Board also agreed that a portion of the income on the endowment from the sale of the gold would be used to subsidize interest rate expenses for concessional lending to low-income countries through 2011.¹⁰³

As noted, the 2009 agreement entails the sale of all gold holdings acquired after the 1978 Second Amendment. These sales were completed in December 2010. Due to the continued run-up of gold spot prices since mid-2009, the IMF’s gold sale proceeds exceeded the forecasted requirements for the surveillance endowment and supplemental low-income country lending. However, the IMF has not yet publicly disclosed the transaction-specific or average sale prices – and therefore, the size of the excess proceeds. Any surplus resources, which likely total several billion dollars, will

⁹⁹ To avoid gold market disruptions, the IMF Executive Board earlier had adopted several important guidelines, such as phasing on-market transactions and prioritizing off-market transactions. See IMF (2010), *Gold in the IMF*.

¹⁰⁰ For further details, see Crockett Committee (2007).

¹⁰¹ See IMF Survey Online (2008)

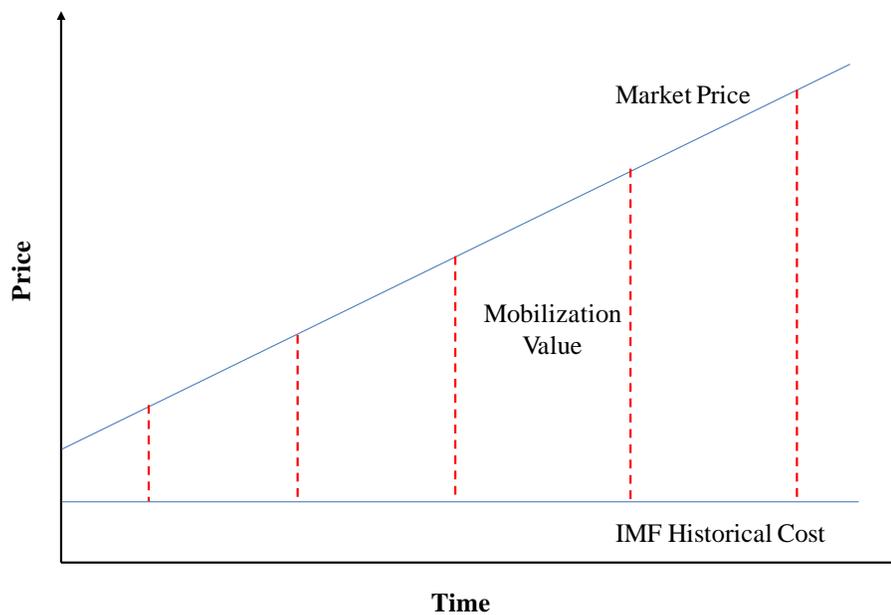
¹⁰² In the first phase, the IMF sold 212 metric tons through off-market transactions (although at market prices) to three central banks – of which, the Reserve Bank of India purchased 200 metric tons. In February 2010, the IMF announced that the sale of the remaining gold (roughly 191 tons) would begin shortly thereafter. Importantly, the new income model projections – and associated gold sale requirements – were based on a market price of \$850 per ounce. Currently, market prices are nearly 50 percent higher. This suggests the potential for excess proceeds and/or investment income.

¹⁰³ See IMF Press Release No. 09/268.

remain unallocated until the IMF Board of Directors decides how to use them.¹⁰⁴ We propose below that one possible usage would be to cover costs associated with increased financing of climate and other development pertinent GPGs.

(2) *Mobilizing Gold Holdings Approach*: Alternatively, IMF member countries could “mobilize” gold holdings. In simple terms, this approach serves to monetize the differential between prevailing gold market prices and the accounting valuation placed on the IMF’s holdings (see figure 7 below). At a gold spot price of about \$1,250 (compared to an accounting valuation of roughly \$50), IMF member countries could generate up to roughly \$110 billion for development-pertinent GPGs from the IMF’s remaining gold holdings.¹⁰⁵ Importantly, these transactions would not impact global gold prices since no IMF gold actually enters international markets, which could lead to a decline in global prices.

Figure 7 – IMF Gold Mobilization Approach



The IMF utilized this approach to provide funding for the Heavily Indebted Poor Countries (HIPC) Initiative in 1999. At that time, the IMF Executive Board authorized off-

¹⁰⁴ Under the status quo, the gold sale proceeds will remain tied to ensuring that the IMF’s income is sustainable and sufficient to cover core activities, such as surveillance. As a result, any excess financial resources would not be available to finance alternative activities unless explicitly approved by the IMF’s Board of Directors.

¹⁰⁵ Similar to the restitution example, this figure is calculated as follows: Value (\$113 billion) = Holdings (90.5 million ounces) * [Market Value (\$1,250 per ounce) – (SDR 35 / USD-SDR exchange rate (0.6690))].

market transactions with Brazil and Mexico totaling up to 14 million ounces. First, the IMF sold 12.9 million ounces to these countries at the prevailing market price. The resulting profits then were placed into a special HIPC Initiative account. Second, Brazil and Mexico provided the same amount of gold back to the IMF to settle their separate loan obligations with the IMF. As a result, the IMF's overall gold holdings remained unchanged. However, the IMF's holdings of currencies were reduced by the amount of the gold profit, which also reduced its lending capacity for non-concessional financing (such as to Mexico or Greece). By extension, this reduces its income as the IMF then has correspondingly larger interest paying liabilities (reserve positions) to member countries.¹⁰⁶ If all existing IMF gold holdings were "mobilized", then the IMF would assume a liability of up to \$110 billion on its balance sheet. Given its interest paying nature, this liability could produce significant financial and operating implications for the IMF.¹⁰⁷

Under this approach, IMF member countries would relinquish their claims to the pricing differential. Given the financial implications, this could entail budgetary implications for some IMF member countries depending on national budgetary regulations and scorekeeping rules.

(3) Capitalization Approach (Article of Agreement Amendment): Lastly, member countries could agree to amend the Articles of Agreement (i.e., Second Amendment) to explicitly permit the IMF to utilize pre-1978 gold holdings to capitalize a third-party entity.¹⁰⁸ As with the SDR capitalization approach, the respective third-party entity would utilize the IMF gold as reserves and raise operating capital by floating bonds on international markets.

This approach also could entail important budgetary implications. Ultimately, the respective treatment would depend on such factors as member countries' budgetary scorekeeping regulations and the risk profile associated with the third-party entity's activities.

¹⁰⁶ For example, the income loss from the off-market transactions with Brazil and Mexico was estimated at about SDR 90 million annually.

¹⁰⁷ By illustration, the IMF could face interest expense of \$3 billion annually if SDR interest rates reverted to their historical average of 3 percent. This would be roughly equal to three times the size of the IMF's current operating budget.

¹⁰⁸ Importantly, this approach would be limited by the IMF's restitution procedures for pre-1978 gold holdings.

Possible Resource Usage: In the context of gold sales or mobilization, there are no explicit restrictions on how proceeds may be used.¹⁰⁹ As with capitalization of SDRs, IMF member countries have wide latitude in determining how and where to channel any resulting resources – ranging from financing GPGs to targeted country or sector programs. IMF member countries would need to consider the opportunity costs of utilizing these resources for development-pertinent global public goods as opposed to other potential uses, such as additional debt relief for low-income countries.

U.S. Legislative Requirements: Under existing U.S. law, the executive branch can support the sale of IMF gold without congressional action only if the Secretary of the Treasury certifies to Congress that a sale is necessary either for the restitution of gold to IMF member countries; or to provide liquidity enabling the IMF to meet member countries' claims generally or threats to international financial stability.¹¹⁰ Otherwise congressional authorization is explicitly required.¹¹¹

Effect on Gold Market Prices: IMF gold sales need to be modest, gradual, and transparent to avoid a major decline in market prices. Even then, some risks of gold commodity market disruption would remain. However, we would expect that IMF member countries with important gold production or reserve holdings (i.e., Canada, Australia, Germany, Russia, South Africa, United States, etc.) would play an important role in shaping any sales and communication strategy, to minimize the potential market impact.

Approach Strengths: IMF gold-based financing approaches provide a number of strengths:

- (1) *Revenue Mobilization Potential*: IMF gold-based approaches could yield significant financial resources for development-pertinent GPGs – especially if the proceeds are used to capitalize a third-party entity. In terms of immediate revenue potential, outright sales could produce up to \$104 billion while mobilization could yield roughly \$100 billion.

¹⁰⁹ National legislation may create country-specific limitations to how gold proceeds are used.

¹¹⁰ Sanford and Weiss (2009)

¹¹¹ Source: FY 2000 Consolidated Appropriations Act, which amended Section 5 of the Bretton Woods Agreements Act.

- (2) *Use of An Existing Asset Base*: Given that the IMF (through member countries) already has significant gold holdings, new resource mobilization is not required (in contrast to financial transactions and aviation levies). Currently, IMF gold is an under-utilized asset that provides no operational benefit in terms of institutional lending capacity.
- (3) *A Source for Grant Funding (Though Only Once)*: Gold mobilization would generate resources that could be provided as grant financing (e.g. to low-income countries for climate adaptation). In contrast to capitalization, the resulting stock of resources could only be used once.

Approach Weaknesses: Gold sales or mobilization have weaknesses for our purposes. Some of these weaknesses apply to using gold to capitalize a fund as well. These include:

- (1) *Upfront Budgetary Cost*: As noted previously, some governments could incur significant upfront budgetary costs related to IMF gold sales, mobilization, or capitalization operations.
- (2) *Legislative Requirements*: For the U.S. government, congressional approval would be required – which may present a significant obstacle to concrete action.
- (3) *Potential Gold Market Impact*: Anything other than limited and gradual gold sales could cause a decline in gold market prices, reducing the value of member countries' official reserve holdings. Countries with large or relatively concentrated gold reserve holdings (i.e., France, Germany, Italy, and Netherlands) likely would oppose large sales, so the revenue potential of using IMF gold (other than as callable capital) is limited in practical terms.
- (4) *Impact on IMF Lending Capacity and Income*: The “mobilization” of gold by transferring accounting profits from the IMF's holdings of currencies provided by members' quota subscriptions would reduce its lending capacity by the same amount, which would have ongoing budgetary costs for the IMF.

III. A SPECIFIC PROPOSAL

By way of conclusion, in this section we consider how to approach these options in a particular case: that of climate change and the likely U.S. financial obligations.

The climate change case is apt because it requires a politically visible and specific commitment by the developed countries of \$10 billion annually for developing countries between 2010 and 2012; and a rapidly mounting commitment after that (although much less specific in terms of financing sources). These out-year commitments increase to \$100 billion annually by 2020. The United States is implicitly committed to provide about 25 percent of these amounts (some may argue that it should provide an even larger share).

Among the four options discussed above, which ones are technically practical and politically feasible? Particularly for the United States, whose participation is indispensable given its size and influence in the global economy?

Each approach has its merits and should be considered and debated by policy advocates and civil society groups. In the near term, additional consideration of the maritime fuel tax – with or without emissions trading – likely makes sense and potentially could mobilize up to \$5 billion to \$10 billion annually while also reducing carbon emissions. Nonetheless, to ensure a larger pool of resources for climate and other GPGs that matter for development, we believe it makes sense to tap existing global assets in a manner that has minimal direct budget costs for the advanced economies. We specifically emphasize the advantage of some combination of: (1) seeking an agreement among IMF members to more effectively harness limited amounts of existing SDRs to capitalize a Climate Mitigation Fund (using SDRs committed by any members wishing to participate but requiring some minimum number to trigger creation of the fund) for use in developing countries; and (2) utilizing a limited amount of excess resources from the agreed sale of IMF gold to help meet any future SDR-related interest expenses.

SDRs Plus Some Gold: We believe the most attractive option, for the United States and for the global community as well, is the utilization of a very modest portion of SDRs to capitalize a third-party entity. In turn, this entity would provide lending for climate-friendly and potentially commercially-viable projects (along the lines of Bredenkamp and Pattillo, 2010). We can imagine advanced country and emerging market members of the IMF designating 10 percent of their cumulative SDR allocations for this purpose (totaling roughly 10 billion SDRs or almost \$15 billion). Depending on the third-party

entity's ability to leverage those financial backstop resources (we think a leveraging ratio of 5:1 is reasonable given the experience of the World Bank Climate Investment Funds), the facility could mobilize as much as \$75 billion for climate mitigation projects and programs in developing countries.¹¹²

Conceptually the logic of using a limited amount of SDRs to finance an agreed global program (i.e., Cancún climate financing commitments) is straightforward. SDRs constitute a global asset designed to help stabilize the global economic and financial system in the event of various shocks. While financial stability traditionally has been paramount in the minds of the finance and central bank officials who influence decisions at the IMF, climate change poses a direct and indirect threat to financial and geopolitical stability – particularly given its unpredictable risk profile over time and across countries. Minimizing the resulting uncertainty and risks using SDRs would contribute to global stability. In today's international system, stability must be broadly defined to include the risks of food price and other commodity price shocks, of unpredictable and sudden large movements of people, of weather-related humanitarian crises and so on.

This proposed usage of SDRs would not require upfront agreement by all IMF member countries. Instead, a coalition of sponsoring governments could press forward initially. However, it would be difficult to imagine its success without the agreement or political backing of the United States – including the U.S. Congress.

Countries deploying some of their SDRs in this fashion could face variable interest charges if the third-party entity ever encountered significant loan losses. However, conservative financial management and loan review policies would minimize this likelihood. If participating countries did confront SDR interest charges, then they could be covered (or partially offset) by utilizing a modest portion of the excess IMF income generated by the "Crockett" endowment. To encourage emerging market participation, a tiered interest cost offset structure could be agreed – whereby, a greater percentage or even all of their interest costs could be financed using gold income proceeds.

Selling or mobilizing pre-1978 gold as discussed previously would be politically difficult in the United States and elsewhere. However, the sale of post-1978 gold has already

¹¹² The amount would range from \$45 to \$150 billion depending on the leverage ratio, with the lower-bound estimate based upon the UNAGF's more conservative leveraging ratio of 3:1, and the upper-bound estimate based upon Bredenkamp and Pattillo (2010). The World Bank's Climate Investment Funds could suggest a leveraging ratio somewhere in between these two estimates (5:1 or 6:1).

been approved by the IMF's members (the Crockett endowment) to finance IMF surveillance and other non-income generating IMF activities as well as to help subsidize the IMF's concessional lending to low-income countries. Since the approval of that sale, IMF income has risen due to recent global crisis lending responses, which has generated substantial income. Meanwhile the price of gold has remained higher than anticipated when the sale was approved. Both factors have combined to create a surplus of gold-related revenues for the IMF. While the specific amount is difficult to project, it is likely that resources could be made available to cover such interest costs assuming the requisite political will.¹¹³

In short, it would make sense to have the proposal include provisions to cover interest costs of all participating countries, perhaps in a form that permitted recourse to gold to finance the costs above some fixed interest rates, which could vary on a sliding scale as a function of participating members' per capita income.

At their core, pursuing some combination of SDRs and gold furthers the fundamental logic of utilizing existing global assets to finance programs that deal with global public goods and bads – of which, climate change is a particularly paradigmatic example.

* * * * *

In this paper, we have avoided discussion of specific institutional modalities. Agreement on any option for collective financing is unlikely, including in the case of the United States, without clarity on what new or existing institutions, under what governance and management arrangements, would deploy the resources. In the case of our proposed use of SDRs and gold, we should be clear that the IMF would not manage or control the third-party entity (nor has the IMF Managing Director or staff ever suggested they should), as that activity would take it far from its core mission. At the same time, we note that discussion of how to raise the revenue for global public goods, including climate mitigation (and adaptation) need not in principle await discussion of how to deploy those resources, and that the advantage of collective mechanisms of financing for global public goods is that it invites as well as being dependent on global cooperation on a global challenge.

¹¹³ Solely for illustration purposes, let us assume that the third party entity exercises 20 percent of the associated SDR capital. At 3 percent interest (the current rate on SDRs is less than 1 percent); the total annual interest cost on SDRs for all middle-income and developed countries would be (about) \$100 million a year. The cost to the United States would be less than \$25 million.

References

- Bredenkamp, Hugh and Catherine Pattillo, "IMF Staff Position Note 10/06: Financing the Response to Climate Change," March 25, 2010.
- Climate Action Network, *Fair, Ambitious, and Binding: Essentials for a Successful Climate Deal* 2010.
- Congressional Research Service, *The Exchange Stabilization Fund of the U.S. Treasury Department: Purpose, History, and Legislative Activity* 1999.
- Crocket Committee, *Committee to Study Sustainable Long-Term Financing of the IMF* 2007, available at <http://www.imf.org/external/np/oth/2007/013107.pdf>.
- Honohan, Patrick and Sean Yoder (2010), *Financial Transactions Tax: Panacea, Threat, or Damp Squib?* World Bank Policy Research Working Paper No. 5230.
- International Monetary Fund (2010), *A Fair and Substantial Contribution by the Financial Sector: Final Report for the G-20*.
- International Monetary Fund, *IMF Quotas Factsheet*, 2010.
- International Monetary Fund, *Special Drawing Rights Factsheet*, 2010.
- International Monetary Fund, *Gold in the IMF*, 2010.
- International Monetary Fund, *IMF Gold Sales: Questions and Answers*. 2010.
- International Monetary Fund, *Standing Borrowing Arrangements Factsheet*, 2009.
- International Monetary Fund, *Where Does the IMF Get Its Money Factsheet*, 2009.
- International Monetary Fund, *General and Special SDR Allocations*, 2009.
- International Monetary Fund (2009), *IMF Announces Unprecedented Increase in Financial Support to Low-Income Countries*, IMF Press Release No. 09/268.
- International Monetary Fund (2006), *Indirect Taxes on International Aviation*, IMF Working Paper 06/124.
- International Monetary Fund Survey Online, "Board Backs Plan to Adopt New Income Model for IMF," April 2, 2008.
- McCulloch, Neil and Grazia Pacillo, *Is a Financial Transactions Tax a Good Idea? A Review of the Evidence*," Institute of Development Studies, Issue 14.2, 2010.
- Nassiry, Darius and David Wheeler (2011), *A Green Venture Fund to Finance Clean Technology for Developing Countries*. Center for Global Development Working Paper No. 245.
- Nissanke, M. (2004) *Revenue potential of the currency transaction tax for development finance* in A. B. Atkinson (Ed.), *New Sources of Development Finance*, Chapter 4. Oxford University Press and Schmidt, R. *The Currency Transaction Tax: Rate and Revenue Estimates*, 2007, The North-South Institute.
- Nordhaus, William D. "Economic Aspects of Global Warming in a Post-Copenhagen

Environment." *Proceedings of the National Academy of Sciences* 107, no. 26 (2010): 11721-26.

Parliamentary Office of Science and Technology, Government of the United Kingdom, "The Environmental Costs of Aviation", Postnote Number 207, November 2003.

Sanford, John E. and Martin A. Weiss. "The Global Financial Crisis: Increasing IMF Resources and the Role of Congress," Congressional Research Service, June 5, 2009.

Schmidt, Rodney, "The Currency Transaction Tax – Rate and Revenue Estimates", North-South Institute, United Nations University Press 2008.

Schulmeister, S., Schratzenstaller, M., Picek, O. , *A General Financial Transaction Tax – Motives, Revenues, Feasibility and Effects*, Study of the Austrian Institute of Economic Research (WIFO), 2008.

Taskforce on International Financial Transactions for Development. *Globalising Solidarity: The Case for Financial Levies*. 2009.

Tobin, James. "A Proposal for International Monetary Reform" *Eastern Economic Journal*, 4(3-4), July/October 1978

UNITAID, *2009 Annual Report* (see <http://www.unitaid.eu/en/Annual-report.html>)

Current Donor Commitments, Select Global Public Good Examples

Annual Estimated Spending on Global Public Goods in 2009 by Country (millions of USD)												
Country	EITI ¹	CGIAR ²	UN Peacekeeping ³	3ie ⁴	GEF-4 Replenishment ⁵	UN Adaptation Fund Interim Operation ⁶	AMC ⁷	Montreal Protocol ⁸	IFFim ⁹	Climate Investment Funds ¹⁰	IMF Surveillance ¹¹	Total GPGs financing
Australia	0.2	13	147	0.4	7	0.19		2.5	9	86		329
Austria		2	76		5			1.3				84
Belgium	0.2	11	114		9			1.7				135
Canada	0.3	42	248	0.6	19		17	4.0		100		520
Denmark		6	64	0.4	7	0.54		1.2		65		144
Finland	0.4	5	47		6	0.16		0.9				59
France	0.3	5	654		27	0.12		8.5	87			783
Germany	0.2	24	719		43			11.4		3		848
Greece			54		1			0.7				56
Ireland		10	35		1			0.4				46
Italy		6	433		16		53	6.8	30			598
Japan		16	3,027		44	0.01		24.1				3,112
Korea		2	141		1							144
Luxembourg		1	9		1			0.1				11
Netherlands	0.3	15	155	0.4	16	0.14		2.6	14			203
New Zealand		2	21		1	0.20		0.4				24
Norway	0.2	16	66	0.2	5		5	1.0	5	45		289
Portugal		0	70		1			0.5				72
Spain	0.7	3	482		4			3.6	12	30		585
Sweden		15	90	0.2	16	0.25		1.6	3	300		726
Switzerland		20	97		10	0.18		1.9				129
United Kingdom	1.1	42	721	3.9	37	0.99	40	8.4	129	530		2,127
United States	3.0	79	1,495	0.1	46			27.8				1,652
Total	7	333	8,968	6	323	3	115	111	290	1,159	363	11,678

1: Amount contributed to date through March 2010, divided by number of years from joining till 2009.

2: CGIAR Funding by Member (Table A2.2) from the 2009 Financial Report.

3: Estimated annual contributions for 2009 based on actual contributions from Jan-July 2009, available at <http://www.un.org/en/ga/contributions/status.shtml>.

4: Apart from the Netherlands, these contributions are made by the bilateral aid agency for each country. Canada's agreement is still pending signature. Information obtained from 3ie's 2009 Annual Report available at http://www.3ieimpact.org/reports/3ie_annual_report.pdf.

5: Amount on encashment schedule for 2009 for each country. Obtained from the GEF-4 Summary of Negotiations, Attachment 1 and Attachment 3 available at http://www.thegef.org/gef/sites/thegef.org/files/documents/GEF.R.4.SummaryofNegotiations_Revised_October2006.pdf

6: Amounts contributed in the Dec. 2008-Sep. 2009 period to finance the administrative expenses of operating the Adaptation Fund (the AF) in an interim phase, until the monetization of the share of proceeds of certified emission reductions (CERs). Australia and the United Kingdom requested repayment of their loans. Figures from the Nov. 2009 Adaptation Fund Board Report, p. 53 available at <http://unfccc.int/resource/docs/2009/cmp5/eng/14.pdf>.

7: Assuming that all commitments are disbursed by 2020, we estimate annual payments by dividing the 2009-2020 period evenly (12 years). Commitments and schedule of payments from "Pilot Advance Market Commitment for Vaccines against Pneumococcal Diseases" from the Office of the Vice President and Secretary, World Bank for the Meeting of the Board on April 2, 2009.

8: Cash Payments in the 1991-2010 period divided evenly, as of March 5, 2010 available at <http://www.multilateralfund.org/files/60/6003.pdf>

9: Commitments divided by the years of the commitment to provide an annual payment estimate from information available at <http://www.gavialliance.org/about/donors/index.php>. The amount for Australia was reported in AUD and committed in 2006, so the 2006 average USD exchange rate was used.

10: Effective Contributions received by the Trustees of the Clean Technology Fund and/or the Strategic Climate Fund as of January 31, 2010, as reported on the Trustee Reports for the CTF and STF, available at http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/CTF%203%20Trustee%20Report%20on%20financial%20status%20of%20the%20CTF%20march%202010_0.pdf and <http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/SCF%204%20Trustee%20Report%20on%20financial%20status%20of%20the%20SCF%20march%202010.pdf>, respectively. Funding is disbursed to country projects through the multilateral banks.

11: In September 2009, the IMF board approved the sale of 12.96 million troy ounces of gold to create a kind of endowment which will finance surveillance and other non-income generating activities of the IMF that constitute a global public good. Since then, we estimate gold sales have yielded about \$7,184 million, based on prices at time of sale (http://www.kitco.com/scripts/hist_charts/monthly_graphs.plx). Our estimate of \$363 million is 39.6 percent of the 2009 IMF administrative spending (\$916 million), based on the Crockett Report estimate of the percentage of total administrative costs of the IMF that went to surveillance and related non-income generating activities in 2006. Note that the donor countries in this table make up about 62 percent of the quota share in the IMF.

Copenhagen Accord Signatories, Developed Countries

<p>The chapeau of the Copenhagen Accord lists the following 114 Parties agreeing to the Accord:</p>	<p>Albania, Algeria, Armenia, Australia, Austria, Bahamas, Bangladesh, Belarus, Belgium, Benin, Bhutan, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Cambodia, Canada, Central African Republic, Chile, China, Colombia, Congo, Costa Rica, Côte d'Ivoire, Croatia, Cyprus, Czech Republic, Democratic Republic of Congo, Denmark, Djibouti, Eritrea, Estonia, Ethiopia, European Union, Fiji, Finland, France, Gabon, Georgia, Germany, Ghana, Greece, Guatemala, Guinea, Guyana, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Kiribati, Lao People's Democratic Republic, Latvia, Lesotho, Liechtenstein, Lithuania, Luxemburg, Madagascar, Malawi, Maldives, Mali, Malta, Marshall Islands, Mauritania, Mexico, Monaco, Mongolia, Montenegro, Morocco, Namibia, Nepal, Netherlands, New Zealand, Norway, Palau, Panama, Papua New Guinea, Peru, Poland, Portugal, Republic of Korea, Republic of Moldova, Romania, Russian Federation, Rwanda, Samoa, San Marino, Senegal, Serbia, Sierra Leone, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Swaziland, Switzerland, The Former Yugoslav Republic of Macedonia, Tonga, Trinidad and Tobago, Tunisia, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, United States of America, Uruguay, Zambia</p>
<p>Since the issuance of the report of the COP on its fifteenth session, the secretariat has received communications from the following Parties expressing their intention to be listed as agreeing to the Accord (as a result, the total number of Parties that have expressed their intention to be listed as agreeing to the Accord is 139, as of 23 September 2010:</p>	<p>Afghanistan, Angola, Antigua and Barbuda, Barbados, Belize, Brunei Darussalam, Burundi, Cameroon, Cape Verde, Chad, Gambia, Guinea-Bissau, Honduras, Jamaica, Kenya, Liberia, Mauritius, Mozambique, Nigeria, Saint Lucia, Timor-Leste, Togo, Uganda, Ukraine, Viet Nam.</p>

Source: United Nation Framework Convention on Climate Change

U.S. Aviation Taxes and Fees, January 2010

Tax/Fee Type	Rate
I. Airport & Airway Trust Fund (FAA)	
Passenger Ticket Tax (domestic)	7.50%
Flight Segment Tax (domestic)	\$3.70
Frequent Flyer Tax	7.50%
International Departure Tax	\$16.10
International Arrival Tax	\$16.10
Cargo Waybill Tax (domestic)	6.25%
Commercial Jet Fuel Tax (domestic)	\$0.04
Noncommercial Jet Fuel Tax (domestic)	\$0.22
Noncommercial AvGas Tax (domestic)	\$0.19
II. Environmental Protection Agency	
LUST Fuel Tax (domestic)	\$0.01
III. Local Airport Projects	
Passenger Facility Charge	Up to \$4.50
IV. Department of Homeland Security	
September 11th Fee	\$2.50
Aviation Security Infrastructure Fee	Varies
APHIS Passenger Fee	\$5.00
APHIS Aircraft Fee	\$70.50
Customs User Fee	\$5.50
Immigration User Fee	\$7.00

Source: Air Transport Association

Bank Levy Approaches

Following the global economic crisis, several countries have established or proposed levies to either recoup costs related to government bailouts or to finance future crisis responses. For example, Germany, France, Italy, Sweden, the United Kingdom, the United States, European Commission, and others have targeted banking institutions and, in some cases, other financial services (i.e., insurance companies). We briefly examine two of these approaches in the context of potentially financing development-related GPGs.

Stability Fee (Sweden): In 2009, Sweden instituted a bank levy in order to “finance measures needed in order to counteract the risk of serious disturbance to the financial system.”¹¹⁴ Its underlying policy objective is to reduce bank leverage ratios. Currently, the Swedish government imposes a levy of 0.036 percent on certain components of bank’s balance sheet positions. Foreign banks pay the fee only on the basis of their Swedish subsidiaries’ balance sheet. The levy proceeds, which are estimated to total €250 million in 2010, are used to establish a fund to finance future bank interventions. The government has set a goal of continuing the stability fee until the fund reaches a value of 2.5 percent of GDP. If applied EU-wide, the European Commission roughly estimates that the Swedish stability fee could generate revenues between €11 billion and €13 billion annually.¹¹⁵

Financial Crisis Responsibility Fee (United States): In contrast to Sweden’s ex-ante approach, the United States considered a Financial Crisis Responsibility Fee designed to generate government revenue to offset financial sector bailout costs. As constructed, the fee would only impact financial institutions with consolidated assets in excess of \$50 billion. This would capture 33 commercial banks that account for nearly 80 percent of consolidated assets within the United States.¹¹⁶ Smaller banks would be excluded from the tax. As proposed, the U.S. government would apply an annual fee of 0.15 percent of covered liabilities (total consolidated assets worldwide minus tier 1 capital and deposits covered by FDIC guarantees). The U.S. government estimates that the Responsibility Fee would generate, on average, \$9 billion annually over the next 10 years (\$90 billion overall). Roughly 60 percent of this sum is expected to come from the ten largest financial institutions.

¹¹⁴ Source: Government of Sweden (see <http://www.sweden.gov.se/sb/d/11760/a/133218>).

¹¹⁵ European Commission (2010), *Commission Staff Working Document: Innovative Financing at a Global Level*.

¹¹⁶ These figures do not contain the consolidated balance sheets of non-US banks held outside the US which, according to the current proposal could also be covered by the fee.

Possible Resource Usage: The U.S. and Swedish proposals both explicitly earmark the resulting tax revenues for specific purposes, which are directly or indirectly related to the financial sector. It is highly unlikely that these revenues or those generated under other bank levy proposals would be allocated for GPGs or other development purposes in the near- to medium-term.

U.S. Legislative Requirements: As with any new tax measure, imposition of the Financial Crisis Responsibility Fee (or the Swedish version) would require new congressional legislation. The current political environment makes legislative action contentious and difficult to achieve. Moreover, the U.S. Congress already is engaging on tax-related debates, such as the expiration of the Bush tax cuts on income and capital gains next year.

Global Externalities: As proposed, bank levy proposals could help to produce positive global externalities through greater stability of the global financial system, which would be achieved through disincentives for leverage, excessive risk taking, or other potential systemic risks. However, it could have an unintended consequence of driving risky activity into other parts of the financial sector.

Approach Strengths: Bank levies offer several important resource and policy advantages:

- (1) *Significant Potential Revenue Source:* Bank levies present a significant source of revenue for GPGs or development programs. Even a modest portion of projected receipts would provide a significant boost to programmatic activities.
- (2) *Reduce Systemic Risk:* In general, bank levies could help to either reduce systemic financial sector risks (by discouraging large firm size, leverage, and excessive risk-taking) or providing capital for rapid crisis responses in the future.
- (3) *Limited Impact on Consumers:* Under the U.S. proposal, large banking institutions could be unable to shift the tax burden to their clients due to competition from smaller banks that are exempt from the tax. However, this would translate into a commensurate reduction either in large banking activity and/or profitability within the large institutions.

Approach Weaknesses: At the same time, sponsoring governments must consider several weaknesses or challenges related to utilizing bank levies to finance development programs.

- (1) *Non-Financial Sector Resource Utilization*: Utilizing transaction tax proceeds for non-financial uses violates a longstanding technical consensus in the tax policy literature that earmarked taxes are bad in the first place, and worse if the use of revenue raised is unrelated to the sector taxed.
- (2) *Potential Regulatory Arbitrage*: Uniform (or highly consistent) bank levies across developed countries and other leading financial centers are preferred to prevent tax and regulatory arbitrage. However, multilateral regulatory action presents significant collective action challenges.
- (3) *Uncertain Revenue Mobilization Estimates*: Revenue estimates should be viewed with caution due to the potential for banking institutions to shift business or balance sheet assets to entities outside the scope of the proposed levies. Moreover, European Commission estimates are purely notional due to the lack of reliable consolidated balance sheet data at the EU-level.

SDR Allocations versus Holdings, by Member Country (in alphabetical order)¹¹⁷

Members	SDRs		Surplus/Deficit	
	Holdings	Allocations	(in SDRs)	(% of Allocations)
Afghanistan	128,426,164	155,314,267	(26,888,103)	-17%
Albania	49,931,415	46,450,260	3,481,155	7%
Algeria	1,075,514,433	1,198,184,979	(122,670,546)	-10%
Angola	269,923,961	273,008,626	(3,084,665)	-1%
Antigua and Barbuda	12,406,651	12,499,524	(92,873)	-1%
Argentina	2,022,181,298	2,020,039,967	2,141,331	0%
Armenia	29,375,593	87,988,659	(58,613,066)	-67%
Australia	3,098,344,719	3,083,171,021	15,173,698	0%
Austria	1,750,897,677	1,736,313,856	14,583,821	1%
Azerbaijan	154,432,293	153,576,220	856,073	1%
Bahamas, The	114,175,020	124,413,351	(10,238,331)	-8%
Bahrain	127,685,234	124,350,296	3,334,938	3%
Bangladesh	438,301,814	510,404,987	(72,103,173)	-14%
Barbados	56,338,360	64,373,832	(8,035,472)	-12%
Belarus	368,741,510	368,643,579	97,931	0%
Belgium	4,406,665,071	4,323,343,606	83,321,465	2%
Belize	20,146,061	17,894,255	2,251,806	13%
Benin	49,683,994	59,167,129	(9,483,135)	-16%
Bhutan	6,419,832	5,989,462	430,370	7%
Bolivia	164,909,718	164,131,156	778,562	0%
Bosnia and Herzegovina	1,180,203	160,886,223	(159,706,020)	-99%
Botswana	92,912,697	57,432,096	35,480,601	62%
Brazil	2,887,974,952	2,887,077,827	897,125	0%
Brunei Darussalam	216,354,321	203,503,552	12,850,769	6%
Bulgaria	610,881,883	610,875,636	6,247	0%
Burkina Faso	48,071,475	57,584,429	(9,512,954)	-17%
Burundi	66,629,463	73,849,486	(7,220,023)	-10%
Cambodia	68,485,762	83,919,870	(15,434,108)	-18%
Cameroon	17,783,152	177,266,861	(159,483,709)	-90%
Canada	5,877,184,581	5,988,080,401	(110,895,820)	-2%
Cape Verde	7,477,329	9,168,679	(1,691,350)	-18%
Central African Republic	2,815,156	53,369,061	(50,553,905)	-95%
Chad	2,767,243	53,620,770	(50,853,527)	-95%
Chile	789,781,327	816,891,579	(27,110,252)	-3%
China	8,045,102,187	6,989,668,494	1,055,433,693	15%
Colombia	751,180,903	738,323,308	12,857,595	2%
Comoros	8,225,814	8,503,183	(277,369)	-3%
Congo, Democratic Republ	353,424,379	510,856,857	(157,432,478)	-31%
Congo, Republic of	70,057,629	79,688,651	(9,631,022)	-12%
Costa Rica	132,612,642	156,534,727	(23,922,085)	-15%
Cote d'Ivoire	272,627,454	310,904,156	(38,276,702)	-12%
Croatia	303,223,458	347,342,312	(44,118,854)	-13%
Cyprus	119,372,630	132,802,637	(13,430,007)	-10%

¹¹⁷ As of June 2010

Members	SDRs		Surplus/Deficit	
	Holdings	Allocations	(in SDRs)	(% of Allocations)
Czech Republic	794,593,781	780,201,010	14,392,771	2%
Denmark	1,520,879,645	1,531,473,364	(10,593,719)	-1%
Djibouti	11,688,316	15,158,142	(3,469,826)	-23%
Dominica	6,704,332	7,837,687	(1,133,355)	-14%
Dominican Republic	132,749,734	208,826,188	(76,076,454)	-36%
Ecuador	16,581,651	288,358,161	(271,776,510)	-94%
Egypt	818,223,711	898,452,369	(80,228,658)	-9%
El Salvador	163,805,560	163,807,000	(1,440)	0%
Equatorial Guinea	25,937,882	31,290,436	(5,352,554)	-17%
Eritrea	3,642,735	15,158,142	(11,515,407)	-76%
Estonia	62,026,628	61,965,241	61,387	0%
Ethiopia	57,423,198	127,930,540	(70,507,342)	-55%
Fiji	67,077,200	67,094,447	(17,247)	0%
Finland	1,201,967,990	1,189,510,793	12,457,197	1%
France	9,724,588,295	10,134,203,762	(409,615,467)	-4%
Gabon	132,807,229	146,719,417	(13,912,188)	-9%
Gambia, The	24,604,045	29,768,051	(5,164,006)	-17%
Georgia	145,946,538	143,959,389	1,987,149	1%
Germany	12,186,999,514	12,059,166,873	127,832,641	1%
Ghana	291,402,764	353,868,577	(62,465,813)	-18%
Greece	632,909,149	782,357,540	(149,448,391)	-19%
Grenada	10,645,027	11,165,167	(520,140)	-5%
Guatemala	173,682,033	200,911,003	(27,228,970)	-14%
Guinea	77,536,590	102,465,806	(24,929,216)	-24%
Guinea-Bissau	12,394,568	13,604,757	(1,210,189)	-9%
Guyana	2,381,286	87,085,271	(84,703,985)	-97%
Haiti	68,895,983	78,507,957	(9,611,974)	-12%
Honduras	104,754,367	123,849,618	(19,095,251)	-15%
Hungary	845,566,809	991,051,670	(145,484,861)	-15%
Iceland	84,861,230	112,184,400	(27,323,170)	-24%
India	3,296,533,523	3,978,258,337	(681,724,814)	-17%
Indonesia	1,762,400,407	1,980,438,720	(218,038,313)	-11%
Iran	1,535,649,725	1,426,059,814	109,589,911	8%
Iraq	1,155,725,941	1,134,495,508	21,230,433	2%
Ireland	752,322,447	775,422,027	(23,099,580)	-3%
Israel	859,135,052	883,385,541	(24,250,489)	-3%
Italy	6,037,397,672	6,576,111,210	(538,713,538)	-8%
Jamaica	217,306,719	261,643,650	(44,336,931)	-17%
Japan	13,381,660,556	12,284,969,838	1,096,690,718	9%
Jordan	146,653,379	162,070,636	(15,417,257)	-10%
Kazakhstan	344,555,528	343,653,571	901,957	0%
Kenya	212,724,550	259,647,163	(46,922,613)	-18%
Kiribati	5,335,298	5,323,967	11,331	0%
Korea	2,297,857,891	2,404,445,224	(106,587,333)	-4%
Kosovo	55,280,342	55,368,413	(88,071)	0%
Kuwait	1,442,851,966	1,315,573,695	127,278,271	10%
Kyrgyz Republic	93,659,920	84,736,994	8,922,926	11%
Laos	51,071,478	50,677,761	393,717	1%

Members	SDRs		Surplus/Deficit	
	Holdings	Allocations	(in SDRs)	(% of Allocations)
Latvia	127,332,673	120,822,030	6,510,643	5%
Lebanon	209,372,676	193,286,941	16,085,735	8%
Lesotho	36,256,794	32,878,186	3,378,608	10%
Liberia	132,931,867	123,979,015	8,952,852	7%
Libya	1,604,632,680	1,072,695,711	531,936,969	50%
Lithuania	137,309,942	137,238,714	71,228	0%
Luxembourg	243,276,480	246,622,459	(3,345,979)	-1%
Macedonia, former Yugosl	58,075,052	65,616,876	(7,541,824)	-11%
Madagascar	97,663,532	117,089,531	(19,425,999)	-17%
Malawi	1,150,015	66,368,637	(65,218,622)	-98%
Malaysia	1,355,274,331	1,346,143,721	9,130,610	1%
Maldives	7,728,106	7,691,108	36,998	0%
Mali	73,362,869	89,362,782	(15,999,913)	-18%
Malta	95,819,122	95,401,757	417,365	0%
Marshall Islands	3,327,452	3,327,479	(27)	0%
Mauritania	45,503	61,665,351	(61,619,848)	-100%
Mauritius	99,782,487	96,805,549	2,976,938	3%
Mexico	2,807,503,700	2,851,195,262	(43,691,562)	-2%
Micronesia	6,202,368	4,806,733	1,395,635	29%
Moldova	1,156,312	117,713,577	(116,557,265)	-99%
Mongolia	48,035,862	48,757,089	(721,227)	-1%
Montenegro	26,153,308	25,822,346	330,962	1%
Morocco	484,551,412	561,422,053	(76,870,641)	-14%
Mozambique	108,644,094	108,838,056	(193,962)	0%
Myanmar	2,044,108	245,759,346	(243,715,238)	-99%
Namibia	130,406,402	130,387,314	19,088	0%
Nepal	62,276,767	68,099,599	(5,822,832)	-9%
Netherlands	4,887,308,482	4,836,632,109	50,676,373	1%
New Zealand	854,745,468	853,757,690	987,778	0%
Nicaragua	104,885,053	124,542,747	(19,657,694)	-16%
Niger	54,286,116	62,937,711	(8,651,595)	-14%
Nigeria	1,675,266,702	1,675,375,490	(108,788)	0%
Norway	1,599,672,167	1,563,069,795	36,602,372	2%
Oman	185,548,713	178,817,153	6,731,560	4%
Pakistan	854,072,406	988,564,251	(134,491,845)	-14%
Palau	2,957,642	2,957,665	(23)	0%
Panama	171,036,407	197,011,025	(25,974,618)	-13%
Papua New Guinea	10,202,849	125,494,317	(115,291,468)	-92%
Paraguay	110,391,693	95,193,533	15,198,160	16%
Peru	524,155,930	609,893,068	(85,737,138)	-14%
Philippines	727,852,393	837,964,699	(110,112,306)	-13%
Poland	1,302,579,135	1,304,639,688	(2,060,553)	0%
Portugal	833,481,490	806,476,958	27,004,532	3%
Qatar	268,229,684	251,404,103	16,825,581	7%
Romania	806,867,959	984,767,719	(177,899,760)	-18%
Russian Federation	5,676,315,625	5,671,802,571	4,513,054	0%
Rwanda	83,518,416	76,821,809	6,696,607	9%
Samoa	12,599,180	11,091,036	1,508,144	14%

Members	SDRs		Surplus/Deficit	
	Holdings	Allocations	(in SDRs)	(% of Allocations)
San Marino, Republic of	16,691,695	15,533,846	1,157,849	7%
Sao Tome & Principe	6,478,692	7,098,061	(619,369)	-9%
Saudi Arabia	6,963,070,156	6,682,495,468	280,574,688	4%
Senegal	130,346,377	154,800,399	(24,454,022)	-16%
Serbia	6,521,554	445,035,749	(438,514,195)	-99%
Seychelles	7,755,702	8,282,473	(526,771)	-6%
Sierra Leone	120,959,341	99,505,615	21,453,726	22%
Singapore	980,845,749	744,212,963	236,632,786	32%
Slovak Republic	341,682,871	340,477,093	1,205,778	0%
Slovenia, Republic of	198,150,889	215,881,743	(17,730,854)	-8%
Solomon Islands	9,259,955	9,908,306	(648,351)	-7%
Somalia	18,553,575	46,462,893	(27,909,318)	-60%
South Africa	1,788,148,476	1,785,415,141	2,733,335	0%
Spain	2,925,646,356	2,827,557,226	98,089,130	3%
Sri Lanka	4,519,030	395,460,206	(390,941,176)	-99%
St. Kitts and Nevis	8,500,203	8,503,183	(2,980)	0%
St. Lucia	15,428,919	14,566,777	862,142	6%
St. Vincent and the Grenad	753,653	7,911,818	(7,158,165)	-90%
Sudan	125,700,141	177,992,273	(52,292,132)	-29%
Suriname	80,658,137	88,092,106	(7,433,969)	-8%
Swaziland	44,408,293	48,284,670	(3,876,377)	-8%
Sweden	2,287,765,235	2,248,964,456	38,800,779	2%
Switzerland	3,378,121,600	3,288,037,190	90,084,410	3%
Syrian Arab Republic	279,184,575	279,182,398	2,177	0%
Tajikistan	69,836,845	82,083,426	(12,246,581)	-15%
Tanzania	158,656,897	190,511,413	(31,854,516)	-17%
Thailand	971,708,644	970,266,384	1,442,260	0%
Timor-Leste	7,727,845	7,727,908	(63)	0%
Togo	59,227,934	70,330,612	(11,102,678)	-16%
Tonga	7,074,008	6,580,827	493,181	7%
Trinidad and Tobago	275,505,189	321,134,936	(45,629,747)	-14%
Tunisia	241,782,949	272,775,783	(30,992,834)	-11%
Turkey	969,752,083	1,071,329,729	(101,577,646)	-9%
Turkmenistan	69,817,506	69,818,076	(570)	0%
Tuvalu	1,688,713	1,688,713	0	0%
Uganda	143,617,938	173,060,260	(29,442,322)	-17%
Ukraine	46,369,329	1,309,443,407	(1,263,074,078)	-96%
United Arab Emirates	541,124,362	568,406,413	(27,282,051)	-5%
United Kingdom	9,149,914,836	10,134,203,762	(984,288,926)	-10%
United States	36,886,469,991	35,315,680,813	1,570,789,178	4%
Uruguay	245,610,474	293,259,926	(47,649,452)	-16%
Uzbekistan	263,250,539	262,789,980	460,559	0%
Vanuatu	1,568,777	16,266,741	(14,697,964)	-90%
Venezuela	2,239,696,466	2,543,255,876	(303,559,410)	-12%
Vietnam	267,863,946	314,792,001	(46,928,055)	-15%
Yemen	191,108,030	232,251,303	(41,143,273)	-18%
Zambia	406,622,838	469,137,515	(62,514,677)	-13%
Zimbabwe	165,074,724	272,178,883	(107,104,159)	-39%

SDR Monetization Approach

This approach would entail IMF member countries either granting outright or restricted usage of their SDR allocations for development financing purposes. This could take a broad array of institutional, programmatic, and financing forms. Institutionally, the sponsoring countries could channel their SDR-based resources: (1) individually and directly; (2) through a member country consortium; (3) through existing multilateral bodies (e.g., IMF, World Bank, or African Development Bank); or (4) by establishing a new multilateral body. In programmatic terms, the resources could support project-, country-, or sector-level programs as well as GPGs. Financing term options could include: grants, concessional loans, or non-concessional loans denominated in SDRs or another freely usable currency (following currency conversions).

Currently, developed countries' holdings total over SDR 129 billion (\$195 billion).¹¹⁸ Theoretically, this entire amount could be mobilized directly for GPGs or other development programs assuming a complete liquidation of developed countries' SDR holdings. However, this presupposes that there would be sufficient demand from other IMF member countries to purchase the respective SDRs. In reality, developed countries' would be able to sell only a modest portion of their SDR holdings. Given this, developed countries could commit to use a set percentage of their SDR allocations for development purposes (see below).

Additional analysis – including consultations with prospective developing country purchasers – would be required to calculate projected SDR purchases and resource mobilization for development programs. For indicative purposes, figures 3 and 4 outline those developing countries with the largest surplus SDR holdings as well as the largest foreign reserves. In practical terms, the latter group may be the most attractive purchasers for developed countries' SDRs for purposes of foreign reserve diversification.

¹¹⁸ This is based on the IMF's "advanced economy" classification. This includes: Australia, Austria, Belgium, Canada, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hong Kong (non-IMF member), Iceland, Ireland, Israel, Italy, Japan, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, San Marino, Singapore, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Taiwan (non-IMF member), United Kingdom, and United States.

SDR Holding Surpluses, Top 15 Developing Countries¹¹⁹

Members	SDRs		Surplus/Deficit	
	Holdings	Allocations	(in SDRs)	(% of Allocations)
China	8,045,102,187	6,989,668,494	1,055,433,693	15%
Libya	1,604,632,680	1,072,695,711	531,936,969	50%
Saudi Arabia	6,963,070,156	6,682,495,468	280,574,688	4%
Kuwait	1,442,851,966	1,315,573,695	127,278,271	10%
Iran	1,535,649,725	1,426,059,814	109,589,911	8%
Botswana	92,912,697	57,432,096	35,480,601	62%
Sierra Leone	120,959,341	99,505,615	21,453,726	22%
Iraq	1,155,725,941	1,134,495,508	21,230,433	2%
Qatar	268,229,684	251,404,103	16,825,581	7%
Lebanon	209,372,676	193,286,941	16,085,735	8%
Paraguay	110,391,693	95,193,533	15,198,160	16%
Colombia	751,180,903	738,323,308	12,857,595	2%
Brunei Darussalam	216,354,321	203,503,552	12,850,769	6%
Malaysia	1,355,274,331	1,346,143,721	9,130,610	1%
Liberia	132,931,867	123,979,015	8,952,852	7%

Source: IMF, author calculations

Largest Foreign Currency Reserve Holdings, Select Developing Countries (USD Millions)¹²⁰

Country	Foreign Currency Reserves	SDRs
China*	1,530,370	7,980
Russia	417,835	8,398
Saudi Arabia*	253,078	6,971
India	248,201	4,861
Thailand	141,135	1,437
Mexico	100,295	4,154
Algeria*	93,910	1,076
Malaysia	84,920	1,993
Poland	73,764	1,978
Indonesia	70,401	2,600
Turkey	69,427	1,431
Libya*	61,183	1,604
Argentina	44,166	2,992
Iraq*	28,175	1,160
Nigeria*	27,035	1,518

Source: IMF

¹¹⁹ As of June 2010.

¹²⁰ As of June 2010. Source: IMF, *Data Template on International Reserves and Foreign Currency Liquidity*. Asterisk indicates that the IMF Data Template does not include reporting from the country. For those countries, figures are from the IMF *International Financial Statistics 2010*.

Official Reserve Holdings, Advanced Economies (USD Millions)¹²¹

Country	Official Reserve Assets	Foreign Currency Reserves	IMF Reserve Position	Gold	SDRs			Import Cover	
					Holdings	% of Official Reserve Assets	Relative to Foreign Currency Reserves	With SDRs	No SDRs
Australia	37,277	28,108	1,028	3,194	4,570	12%	16%	2.70	2.37
Austria	19,371	5,550	641	10,520	2,659	14%	48%	1.71	1.47
Belgium	25,623	7,989	1,874	9,074	6,513	25%	82%	0.87	0.65
Canada	55,393	44,045	2,520	136	8,692	16%	20%	2.01	1.70
Cyprus	1,166	392	42	554	177	15%	45%	1.78	1.51
Czech Republic	39,316	37,280	269	474	1,286	3%	3%	4.50	4.35
Denmark	79,106	65,801	611	2,654	2,248	3%	3%	11.60	11.27
Finland	9,958	5,720	515	1,956	1,777	18%	31%	1.97	1.62
France	142,834	26,785	4,441	97,221	14,388	10%	54%	3.09	2.78
Germany	189,736	37,854	5,605	127,771	18,506	10%	49%	2.42	2.19
Greece	6,029	69	259	4,732	969	16%	1404%	1.22	1.02
Iceland	4,788	4,556	28	75	129	3%	3%	15.97	15.54
Ireland	2,052	390	311	240	1,112	54%	285%	0.39	0.18
Israel	64,282	62,168	280	-	1,305	2%	2%	15.65	15.34
Italy	144,288	34,942	2,361	98,063	8,922	6%	26%	4.20	3.94
Japan	1,063,513	1,009,761	4,241	28,761	20,321	2%	2%	23.18	22.74
Luxembourg	772	245	77	90	360	47%	147%	0.38	0.20
Malta	356	217	41	4	142	40%	65%	1.13	0.68
Netherlands	41,974	8,599	2,182	24,427	7,228	17%	84%	1.31	1.08
New Zealand	18,010	15,858	254	-	1,250	7%	8%	8.45	7.86
Norway	51,461	37,804	786	-	2,444	5%	6%	9.01	8.59
Portugal	18,316	2,014	364	15,256	1,232	7%	61%	3.07	2.87
Singapore	199,960	202,390	248	212	1,451	1%	1%	9.76	9.69
Slovak Republic	1,907	49	99	1,228	530	28%	1077%	0.42	0.30
Slovenia	1,069	573	64	119	301	28%	53%	0.54	0.39
South Korea	274,219	270,478	927	79	3,390	1%	1%	10.19	10.07
Spain	29,883	13,066	1,339	11,251	4,341	15%	33%	1.23	1.05
Sweden	52,925	43,553	957	5,030	3,385	6%	8%	5.29	4.95
Switzerland	255,522	207,969	1,053	41,614	4,999	2%	2%	20.78	20.37
United Kingdom	99,256	46,860	4,186	11,661	13,894	14%	30%	2.46	2.12
United States	131,216	46,069	12,416	11,041	56,804	43%	123%	0.98	0.56
TOTAL	3,061,578	2,267,152	50,019	507,435	195,324	6%	9%	5.43	5.14

Source: IMF, author calculations

¹²¹ As of fall 2010. Import cover figures are based upon total 2009 imports. Therefore, they may not reflect current import coverage and should be considered as illustrative.