



# EUROPEAN DEFENSE TRENDS: BRIEFING UPDATE

**Project Director:** David Berteau

**Lead Researchers:** T.J. Cipoletti and Greg Sanders

**Co-Researchers:** Meaghan Doherty and Abby Fanlo

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## Executive Summary

The European defense market, though impacted by lethargic economic growth and painful fiscal austerity measures, continues to be a driver in global defense. Five of the fifteen biggest military spenders worldwide in 2013 were European countries<sup>1</sup>, and Europe remains a major market for international arms production and sales. Surges in military spending by Russia, China, and various Middle Eastern countries in recent years has augmented the defense landscape, especially as European countries in aggregate continue to spend less on defense and the United States embarks on a series of deep-striking budget cuts. This report analyzes overall trends in defense spending, troop numbers, collaboration, and the European defense and security industrial base across 37 countries. To remain consistent with previous reports, this briefing utilizes functional NATO categories (Equipment, Personnel, Operations and Maintenance, Infrastructure, and Research and Development) and reports figures in constant 2013 euros unless otherwise noted.

Many of the trends identified within the 2012 CSIS *European Defense Trends* report continued into 2013, namely reductions in topline defense spending, further cuts to R&D spending, and steadily declining troop numbers. Though total European defense spending decreased from 2001-2013, with an accelerated decline between 2008 and 2010, select countries increased spending<sup>2</sup> between 2011 and 2013.<sup>3</sup> Collaboration among European countries has decreased in the R&D category; however, it has increased in the equipment category – indicating increased investment in collaborative procurement. Defense expenditure as a percentage of total government expenditure has decreased across Europe from 2001-2013 with the exceptions of Albania and Estonia.<sup>4</sup>

An updated CSIS European Security, Defense, and Space (ESDS) Index is included within this report and exhibits a shift in geographic revenue origin for leading European defense firms away from North America and Europe and towards other major markets between 2008 and 2013. Finally, a brief analysis of Russian defense spending is included in the final section of this report in order to comprehend more fully the size and scope of the European defense market within the global framework. In 2013, Russia replaced the United Kingdom as the third largest global defense spender, devoting 11.2 percent of total government expenditures to defense.<sup>5</sup>

This briefing report concludes with summarized observations concerning trends in European defense from 2001 to 2013. CSIS will continue to follow and evaluate themes in European defense, which will appear in subsequent briefings.

<sup>1</sup> SIPRI: France, United Kingdom, Germany, Italy, Turkey.

<sup>2</sup> Exhibited by positive compounded annual growth rates [CAGR] between 2011 and 2013.

<sup>3</sup> Germany, Denmark, Estonia, Latvia, Poland, Romania, and Norway.

<sup>4</sup> Exhibited by positive compounded annual growth rates [CAGR] between 2001 and 2013. Data unavailable for Croatia, Bosnia & Herzegovina, Montenegro, and Turkey due to incomplete time series.

<sup>5</sup> SIPRI.

## Budgetary Trends

- Total European defense spending declined from 273.2 billion euros in 2001 to 219.5 billion euros in 2013 (a compounded annual growth rate [CAGR] of -1.81 percent)
- Defense spending per-soldier rose from 79,400 euros in 2001 to 105,300 euros in 2013 (a compounded annual growth rate [CAGR] of 33 percent) while total active military personnel continued to decline from 3.4 million in 2001 to 2.1 million in 2013 (a compounded annual growth rate [CAGR] of -4.2 percent)
- 12-year CAGR indicates cross-category decline in spending, with the most significant decrease in R&D spending (a compounded annual growth rate [CAGR] of -13.3 percent)
- Aggregate defense spending as both a percentage of GDP and as a percentage of total government expenditure has declined across Europe between 2001 and 2013, with the exception of Albania and Estonia

Note: See Slide 5 for graph of aggregate defense spending per soldier between 2001 and 2013.

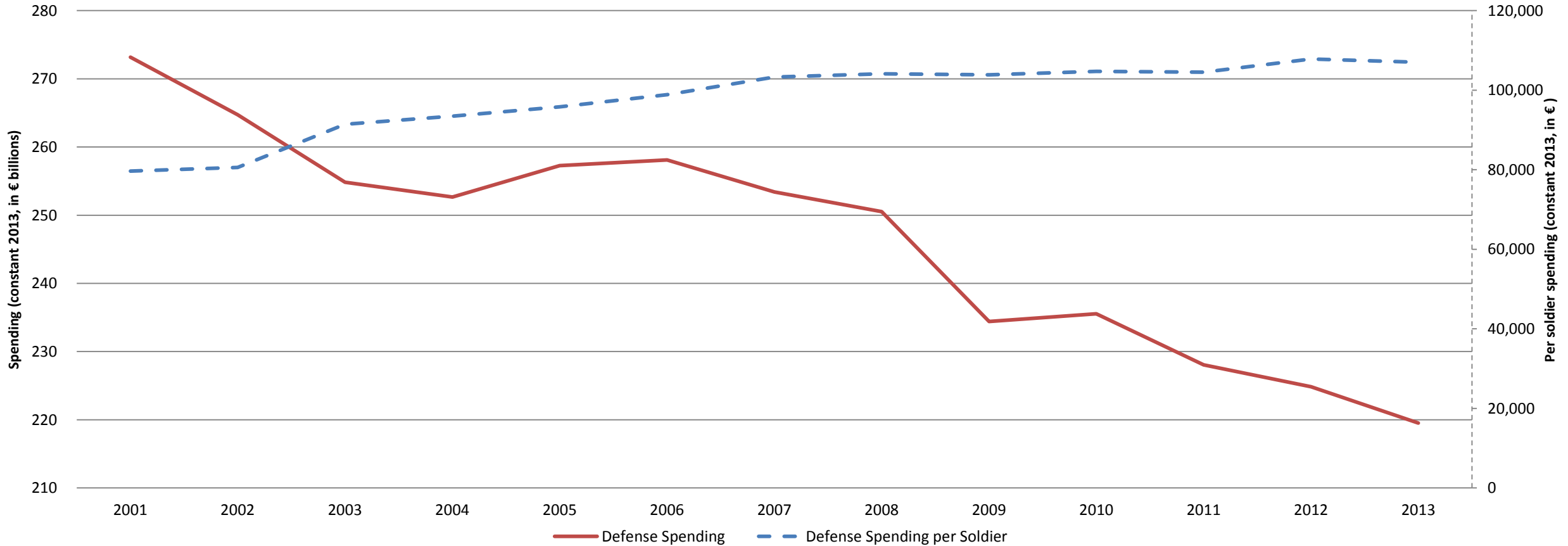
Note: All spending figures in constant 2013 euros unless otherwise noted. Bosnia & Herzegovina and Montenegro are not included in topline spending totals due to incomplete time series.

Source: NATO Financial and Economic Data.

## Key Budgetary Trends: 2011-2013

- Decrease in aggregate defense spending by all European nations (at a CAGR of -1.9 percent) and a slightly smaller decrease by European NATO countries (at a CAGR of -1.8 percent)
- Substantial decline in total R&D spending of 2.1 billion euros (at a CAGR of -26.7 percent) followed by steady decline in total personnel spending of 6.9 billion euros (at a CAGR of -3.2 percent)
- Increased aggregate defense spending by some eastern and northern European countries: Estonia, Latvia, Romania, Poland, and Norway

# European Defense Spending (Total and Per Soldier), 2001-2013



Note: Defense spending per soldier is determined by dividing a country's total defense expenditure (in 2013 euros) by active troop numbers.

Source: NATO Financial and Economic Data; Military Balance 2014. Montenegro and Bosnia & Herzegovina are excluded due to lack of complete time series data.

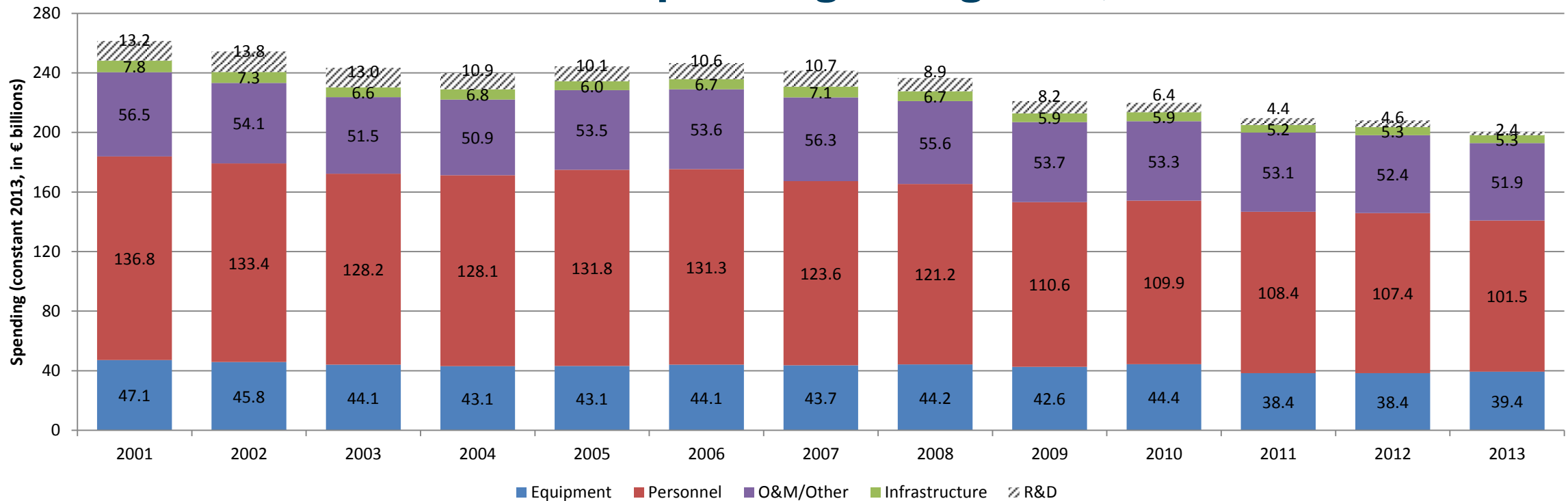
## Changes in Total European Defense Spending by Spending Category, 2001-2013

	Total Defense	2001-2013				
		Equipment	Personnel	Infrastructure	O&M/Other	R&D
<b>12-yr CAGR</b>	-1.8%	-1.5%	-2.5%	-3.2%	-0.7%	-13.3%
<b>Absolute change (in 2013 EUR millions)</b>	-53,900	-7,700	-35,300	-2,500	-4,600	-10,800
<b>Absolute change as % of 2001 Figure</b>	-19.7%	-16.3%	-25.8%	-32.0%	-8.1%	-81.6%

Source: NATO Financial and Economic Data 2014; analysis by CSIS NSPIR. Only countries with complete time series for each category were included in that category's analysis (35 for Total Defense, 16 for NATO Categories, and 15 for R&D). See slide 36 for details.

Note: 2013 data for defense spending categories unavailable for Spain. For 2013 breakdown, 2012 percentages were imported for Spain.

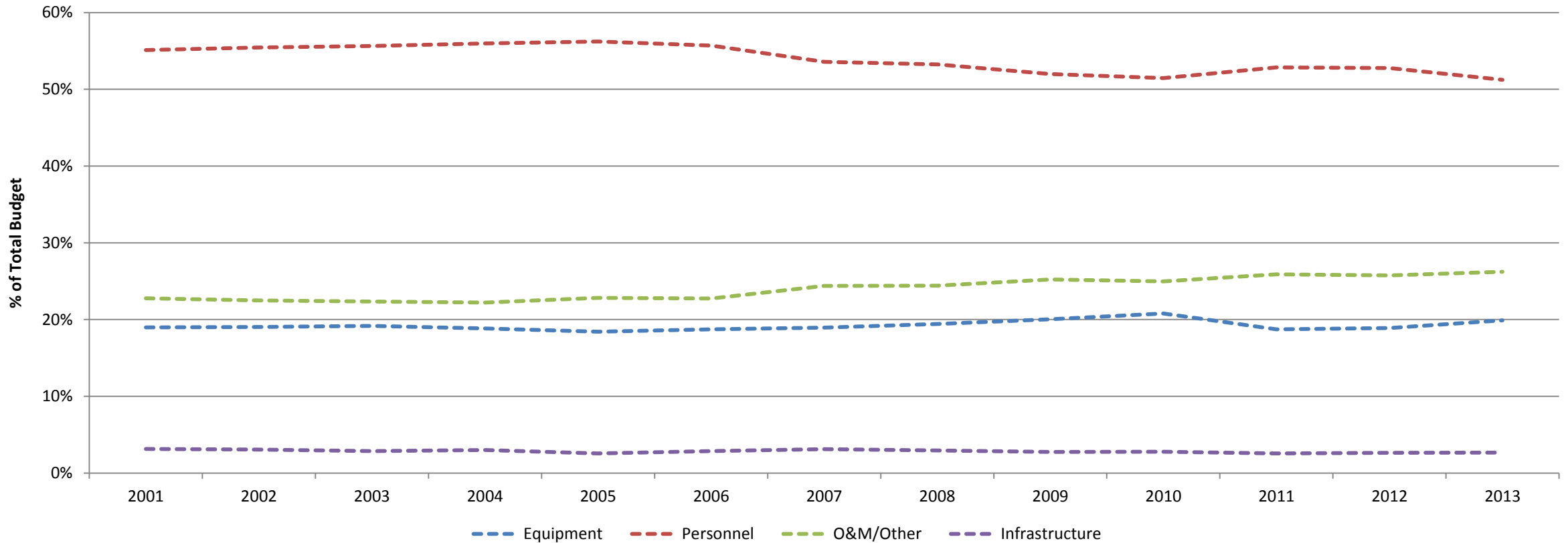
# Total European Defense Spending by NATO Defense Spending Categories, 2001-2013



Source: NATO Financial and Economic Data 2014. Only countries with complete time series for NATO Categories were included in totals (16 countries, or 44% of total countries in report) and only countries with complete time series for R&D (15 countries, or 41% of total countries in report) were included in R&D total. See slide 36 for details.

Note: 2013 data on defense spending categories unavailable for Spain. For 2013 breakdown, 2012 percentages were imported for Spain.

# Distribution of Total European Defense Spending by NATO Defense Spending Categories, 2001-2013

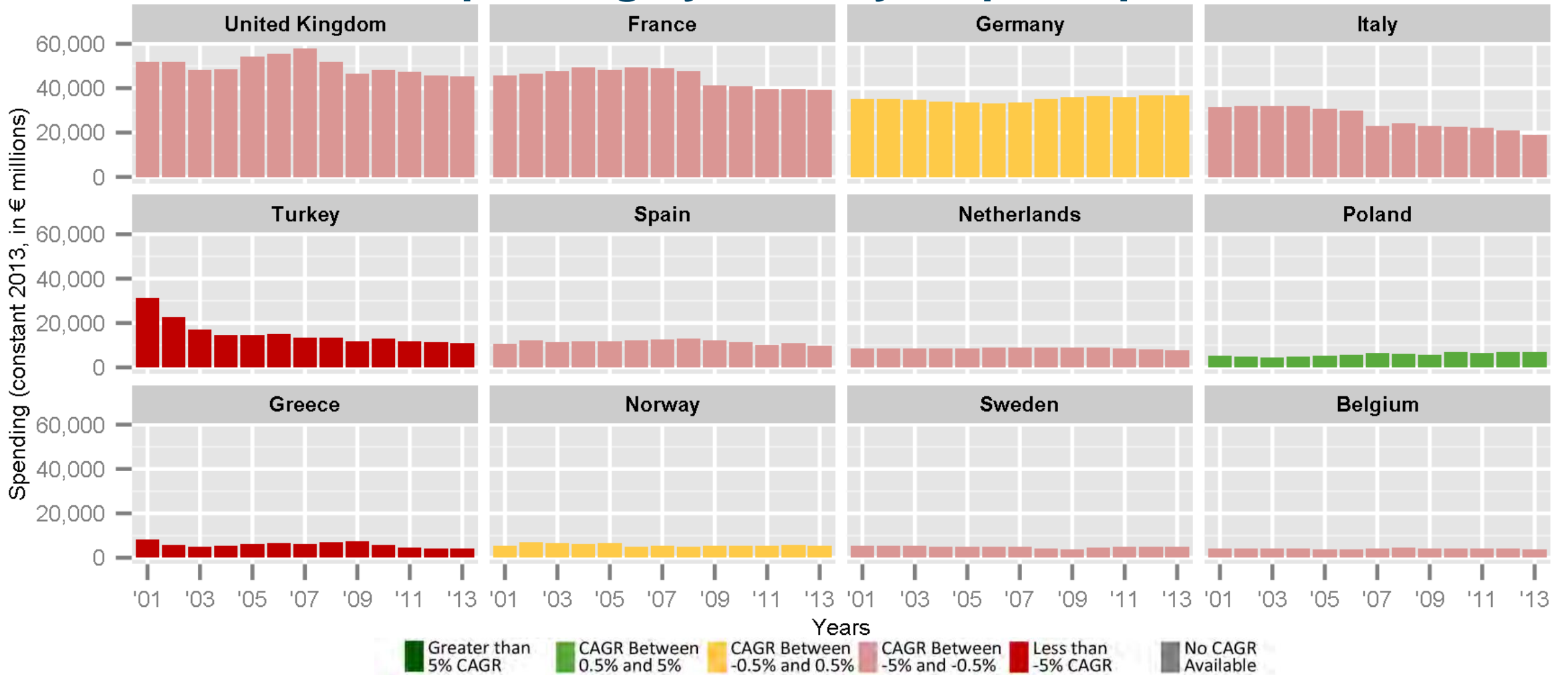


Source: NATO Financial and Economic Data 2014. Only countries with complete time series for NATO Categories were included (16 countries, or 44% of total countries in report). See slide 36 for details.

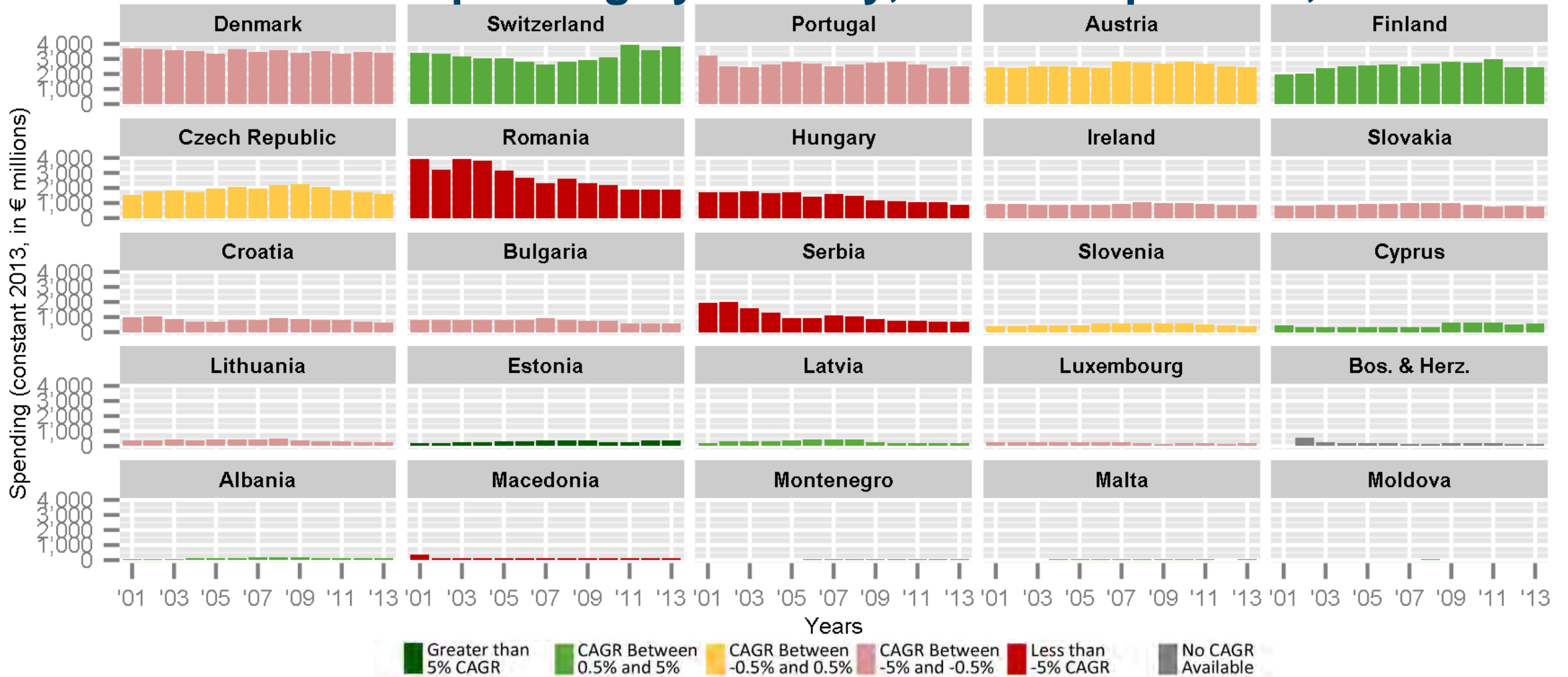
Note: 2013 data for defense spending categories unavailable for Spain. For 2013 breakdown, 2012 percentages were imported for Spain.



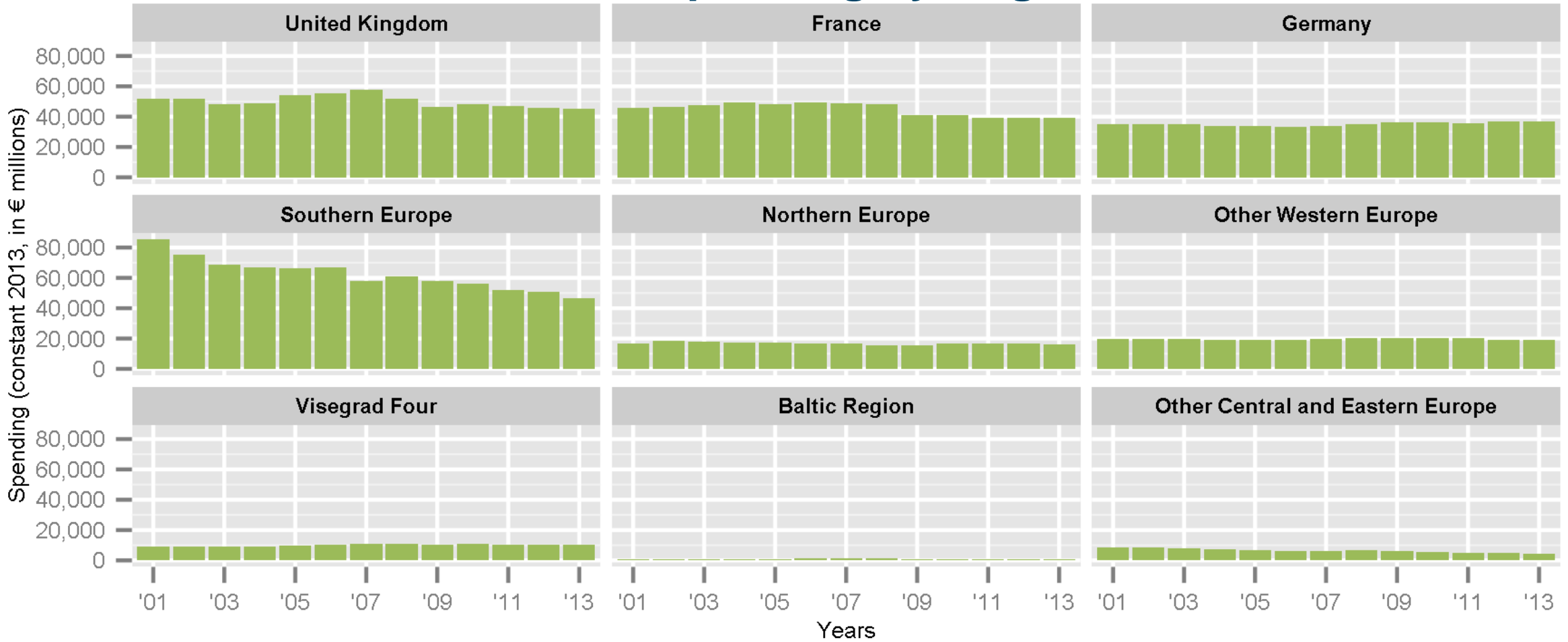
# Total Defense Spending by Country, Top 12 Spenders, 2001-2013



# Total Defense Spending by Country, Smaller Spenders, 2001-2013



# Total Defense Spending by Region, 2001-2013



Note: For a breakdown of countries per grouping, see Slide 36.

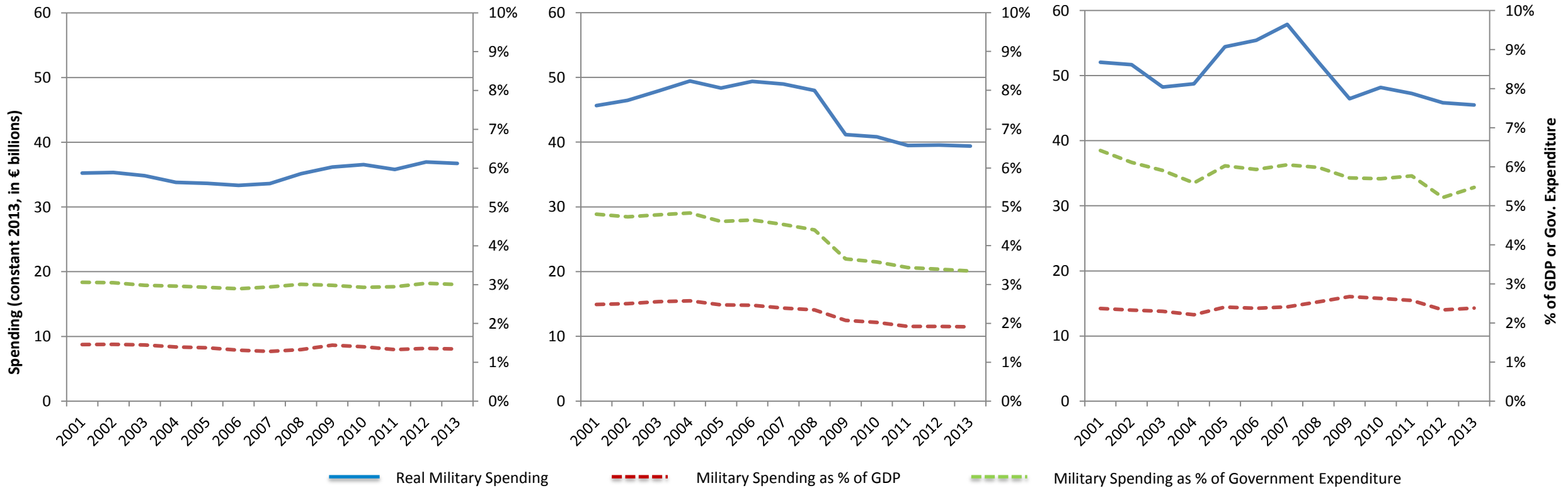
Note: The above analysis includes all 37 countries organized into nine groupings. No country was counted twice.

# Total Defense Spending and as % GDP and % Government Expenditure, 2001-2013

Germany

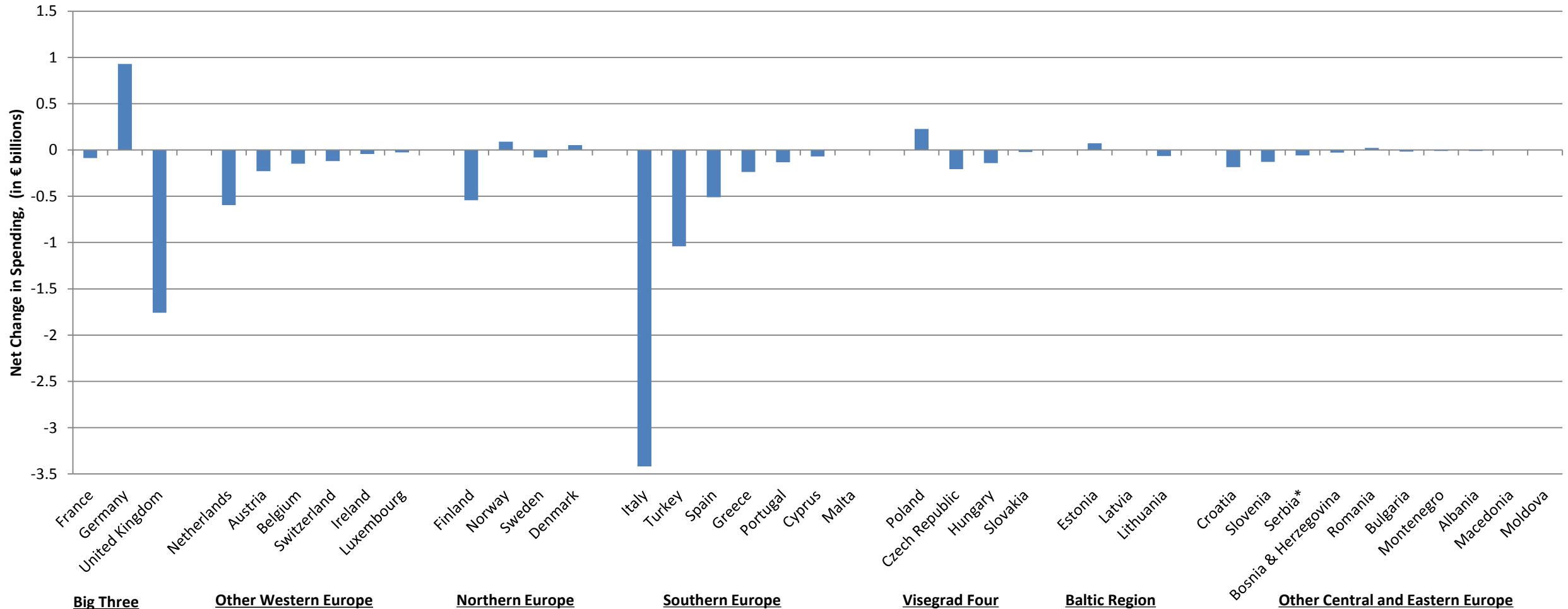
France

United Kingdom



Source: NATO Financial and Economic Data 2014; IMF Economic Outlook; analysis by CSIS NSPIR Group

# Changes in Total Defense Spending, 2011-2013

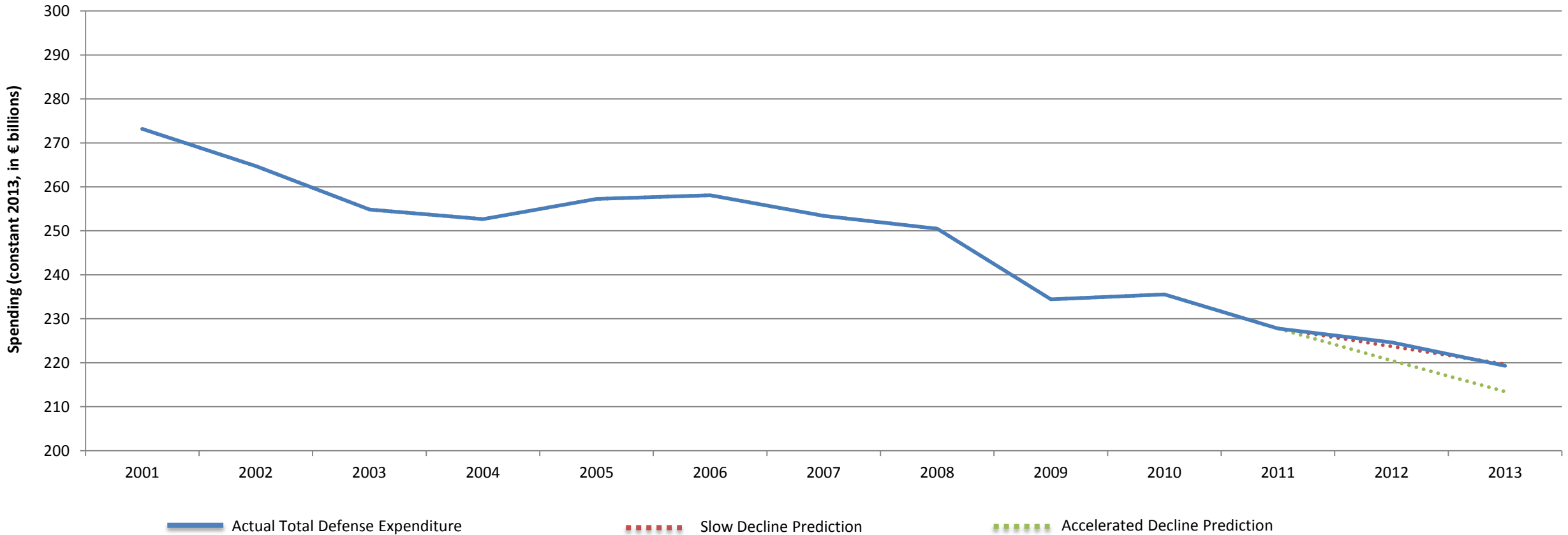


Source: NATO Financial and Economic Data 2014.

## 2012 CSIS Projections

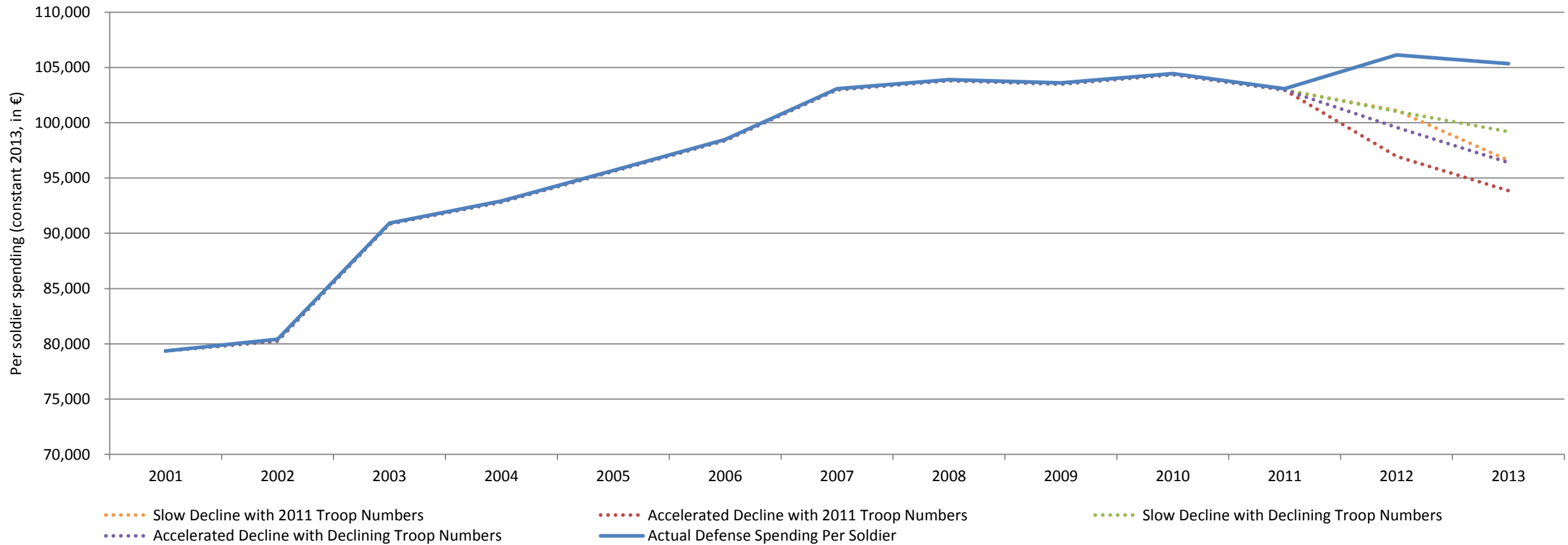
- Using CAGRs observed in total European defense spending from 2001 to 2011 and from 2008 to 2011, CSIS projected two potential trajectories for 2012-2020:
  - The 'Slow Decline' prediction "assumes a moderate annual decline in total European defense spending of -1.8 percent per year."
  - The 'Accelerated Decline' prediction "assumes that sharper cuts will be implemented in light of the continuing economic recession, reducing total European defense spending by -3.2 percent per year."
- To predict per-soldier spending from 2012-2020, CSIS applied the 'Slow Decline' and 'Accelerated Decline' projections to two different force structure scenarios:
  - The first force structure scenario assumes that troop numbers remain at 2011 levels.
  - The second force structure scenario assumes troop numbers "continue to decline at the same pace they did in the years 2008-2011."

# CSIS 2012 Total Defense Spending Predictions Compared to Actual Figures



Source: CSIS Report: European Defense Trends 2012; NATO Financial and Economic Data 2014. Montenegro and Bosnia & Herzegovina were excluded from Actual Defense Spending due to lack of complete time series data.

# CSIS 2012 Per Soldier Spending Predictions Compared to Actual Figures



Source: CSIS Report: European Defense Trends 2012; NATO Financial and Economic Data 2014. Montenegro and Bosnia & Herzegovina were excluded from Actual Defense Spending due to lack of complete time series data.



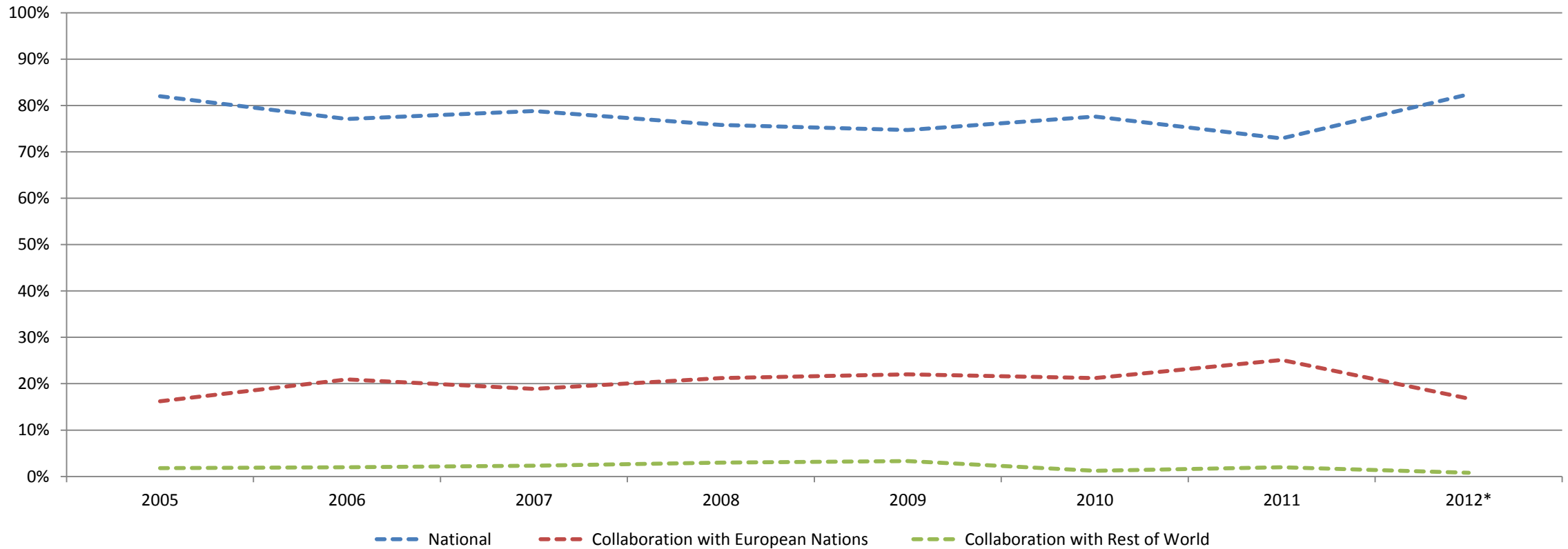
## Recent European Efforts to Address Capability Shortfalls

- Wales Summit Commitments
  - Approved Readiness Action Plan to enhance readiness and posture in light of new security challenges.
  - Reaffirmed pledge to spend 2 percent of GDP on defense and 20 percent of budgets on equipment and R&D.
    - Reversing trend of declining defense expenditures will continue to be politically and economically difficult.
  
- Collaborative defense initiatives and programs have emerged as a possible means of addressing some capability gaps.
  - EU: Pooling & Sharing Initiative
  - NATO: Smart Defence and Framework Nations Concept
  - Sub-regional groupings (NORDEFECO, Visegrad Group, etc.)

## European Defence Agency Collaboration Trends, 2005-2012

- Increased collaboration in defense equipment spending among EDA member states, at a CAGR of 4.5 percent.
  - Western Europe exhibited trend most prominently, specifically in France, Germany, Italy, Spain, and UK
- Decreased collaboration in defense research and technology (R&T) spending among EDA member states, at a CAGR of -5.6 percent.

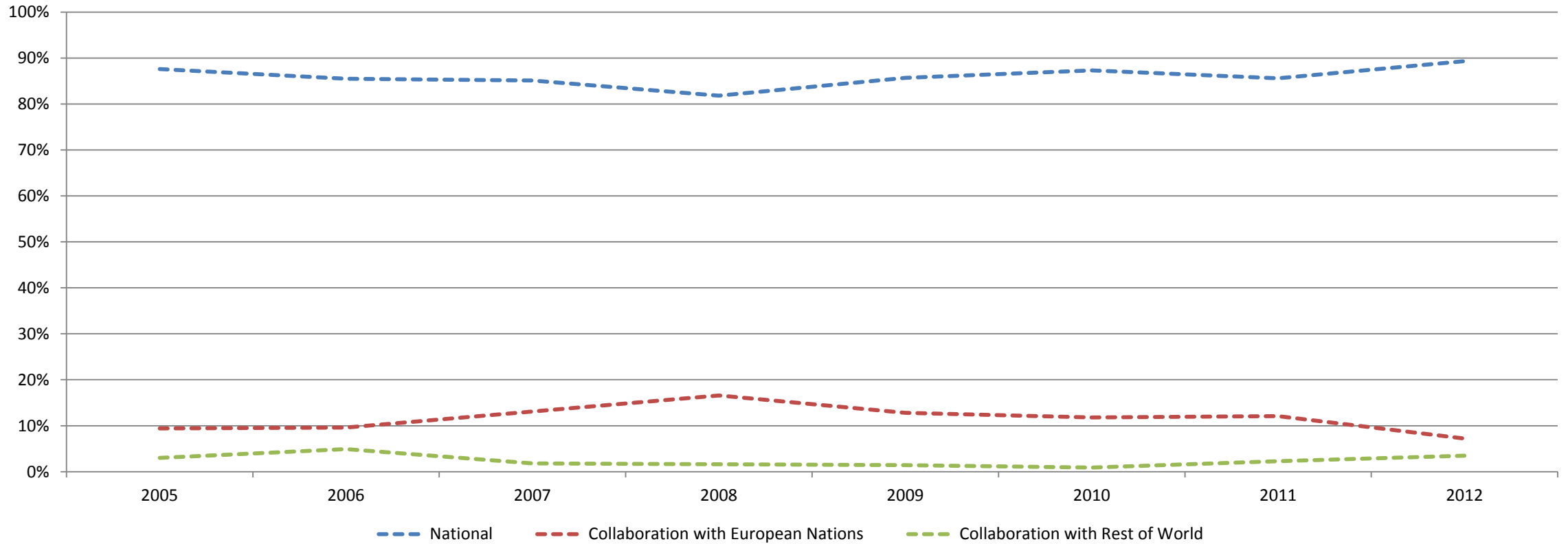
# Distribution of Defense Equipment Spending for EDA Member States, 2005-2012



Source: EDA Defence Data 2012.

Note: EDA states that one of their member countries could not report collaborative data for 2012, causing the European Collaborative percentage in 2012 to appear much smaller than it may actually be.

# Distribution of Defense R&T Spending for EDA Member States, 2005-2012



Source: EDA Defence Data 2012.

Note: EDA states that one of their member countries could not report collaborative data for 2012, causing the European Collaborative percentage in 2012 to appear much smaller than it may actually be.

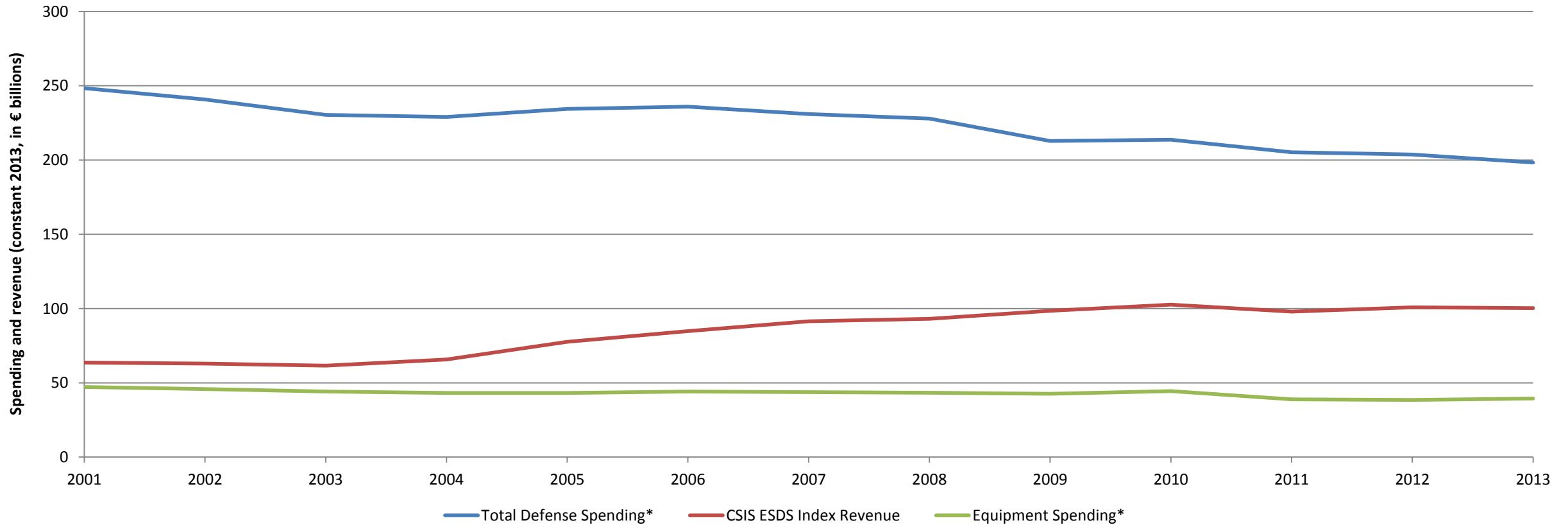
## Key CSIS ESDS Index Trends, 2011-2013

- European defense and security firms have been able to increase revenue despite continuing declines in overall defense spending by European governments, perhaps in part due to a slight increase in equipment spending.
  - Since 2011, total defense spending by European governments\* has declined by 7 billion euros (at a CAGR of -1.72 percent)
  - Equipment spending has increased by 588 million euros (at a CAGR of 0.76 percent)
  - CSIS ESDS Index revenue has increased by 2.4 billion euros (at a CAGR of 1.22 percent)
- The share of CSIS ESDS Index revenue coming from both Europe and North America has declined slightly, while the share from the rest of the world has increased.
- European defense and security firms continue to place a higher premium on emerging, dual-use, and next-generation technologies than their commercial counterparts, though both defense and commercial industrial companies have decreased R&D investment in the past two years.
  - Defense company R&D investment decreased from 7.3 percent of sales to 6.5 percent of sales (at a CAGR of -5.8 percent)
  - Commercial industrial companies R&D investment decreased from 3.12 percent of sales to 3.06 percent of sales (at a CAGR of -1.0 percent)

Note: For earlier trend analyses on the CSIS ESDS Index, please see the 2012 European Defense Trends report, available here: <http://csis.org/publication/european-defense-trends-2012>.

\*Only countries with complete time series data for Equipment spending are included in this total, in order to keep the figure comparable to the Equipment spending figure.

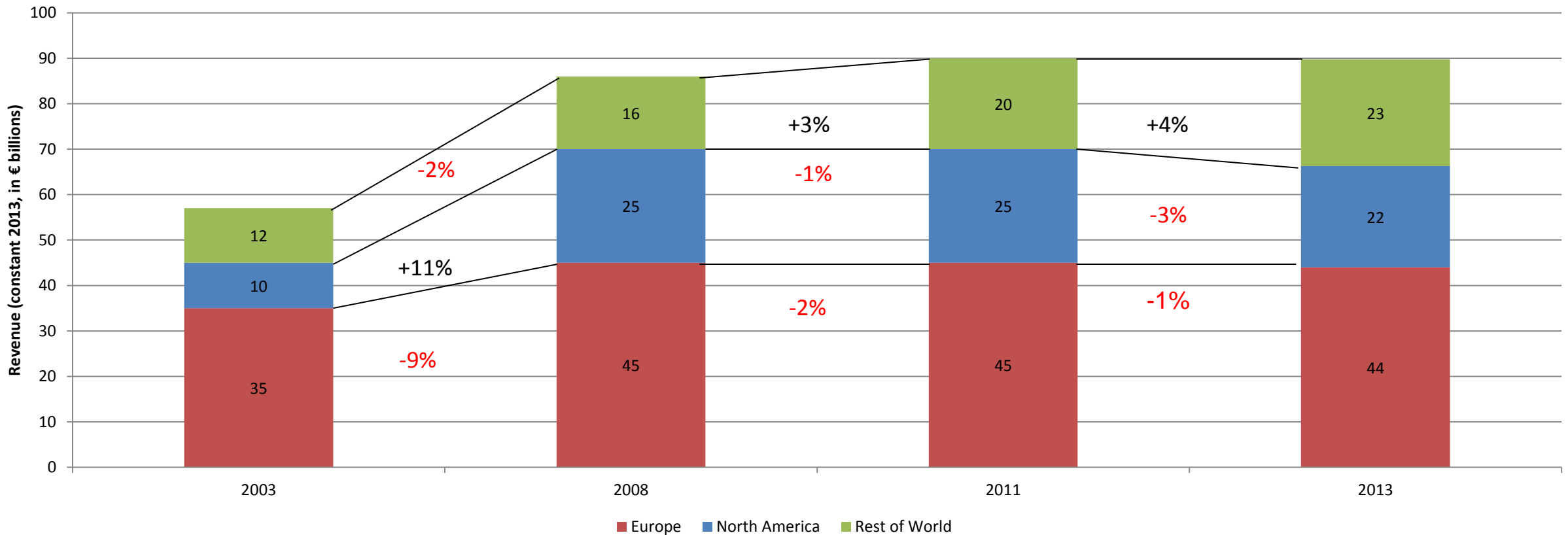
# CSIS ESDS Index Revenue, Total and Equipment Defense Spending (2001-2013)



Source: NATO Financial and Economic Data; Bloomberg, company financial reports; analysis by CSIS NSPIR Group.

\*Note: Only countries with a complete time series for Equipment Spending were included. See slide 37 for details on companies included in the index.

# CSIS ESDS Index: Revenue by Geographic Origin



Source: Bloomberg, company financial reports; analysis by CSIS NSPIR Group. See slide 37 for companies included in the index.

## Russian Defense Trends

- Total defense spending has risen from 1540.13 billion rubles (58.88 billion euros) in 2001 to 2796 billion rubles (66.12 billion euros) in 2013; however, defense spending as a percentage of GDP and as a percentage of total government expenditure has remained fairly constant.
- In 2013, Russian defense expenditure as a percentage of GDP (4.5 percent) exceeded that of the United States (4.4 percent) for the first time since 2003.
- In 2013, Russia replaced the United Kingdom as the third largest global defense spender behind the United States and China.

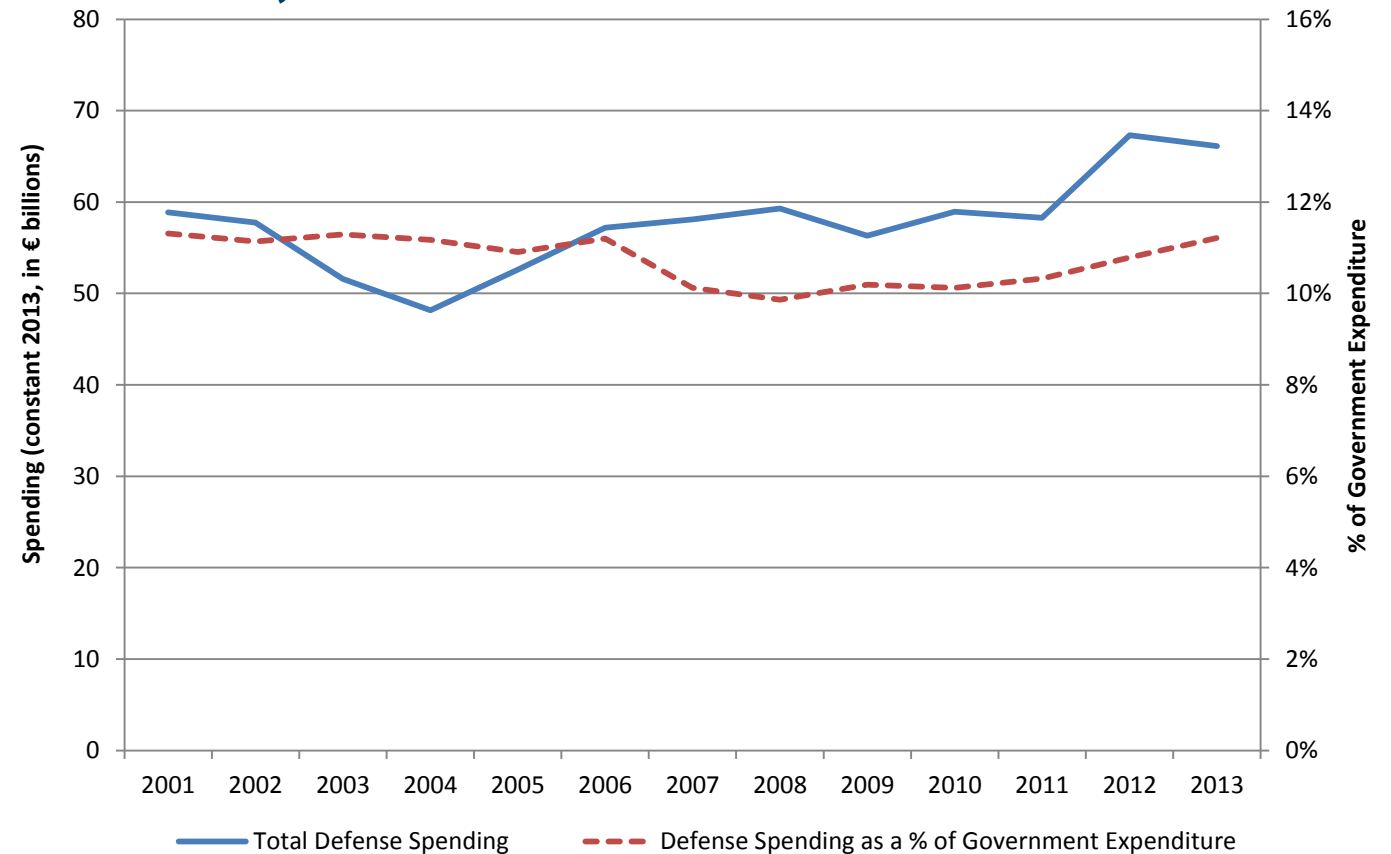
Note: Data on Russian defense expenditure has not been incorporated into European trend analysis (Slides 2-22).

Sources: SIPRI, NATO, World Bank for Russia

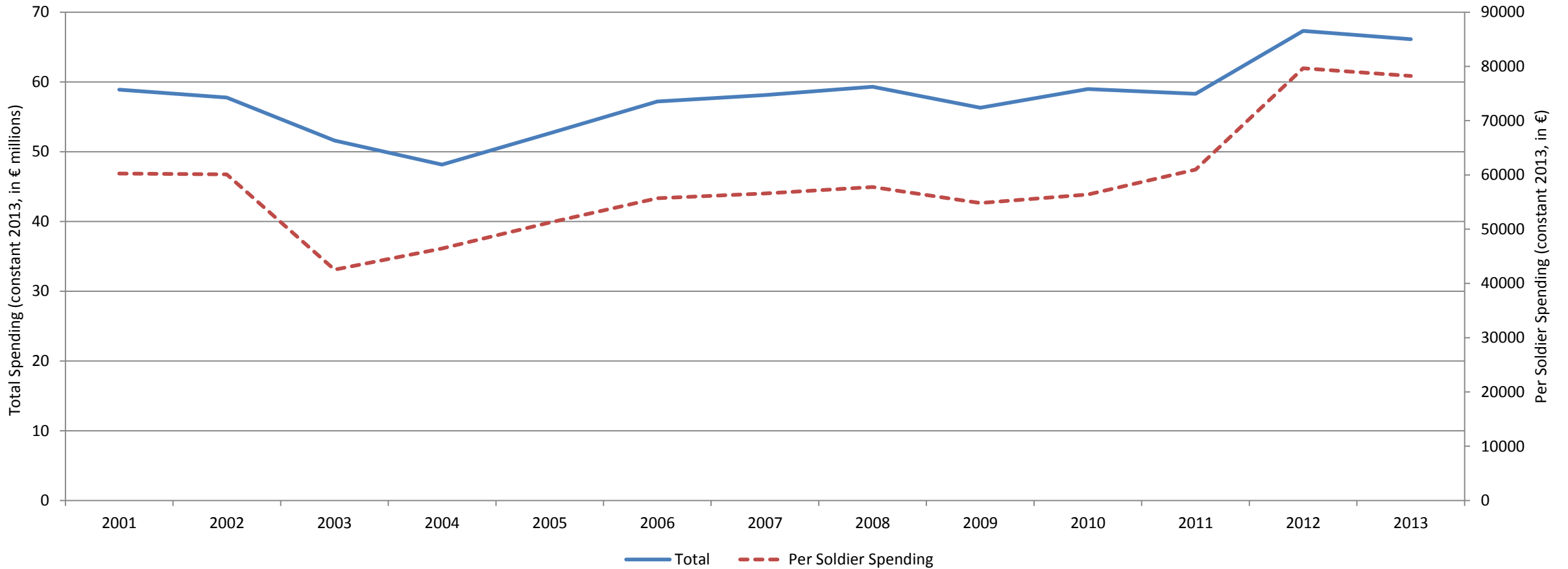


## Russia: Total Defense Spending and as a % of Government Expenditure, 2001-2013

- Despite modest levels of growth following 2009 economic recession, Russian GDP is expected to contract by 0.7 percent in 2015.
- Russia's military modernization program, which was announced in 2010, calls for the investment of 23 trillion rubles (\$723 billion) in order to achieve a 70 percent modernization rate by 2020.
- Falling oil prices, a steadily declining ruble, and Western sanctions may negatively impact Russia's planned defense spending in 2015 and 2016.



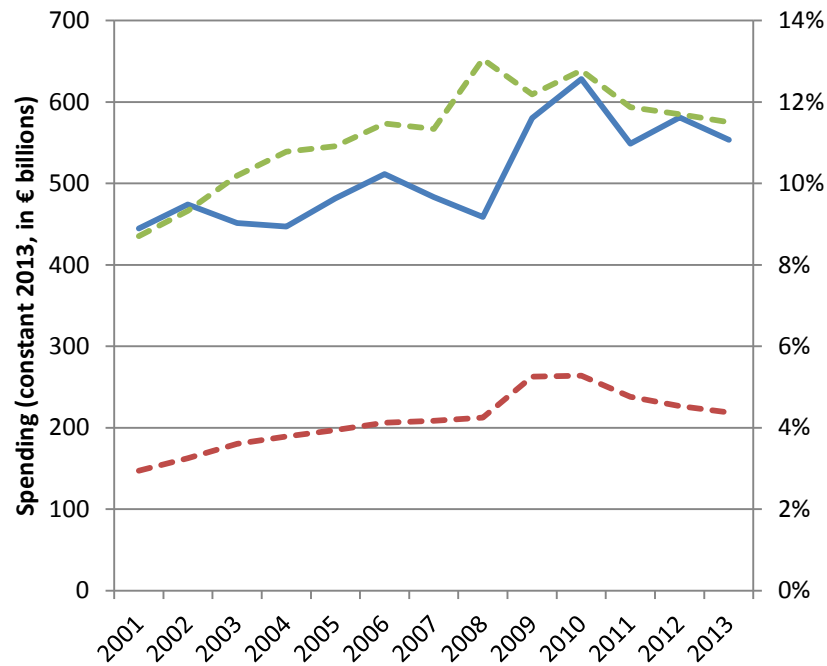
# Russia: Total Defense Spending and Per Soldier, 2001-2013



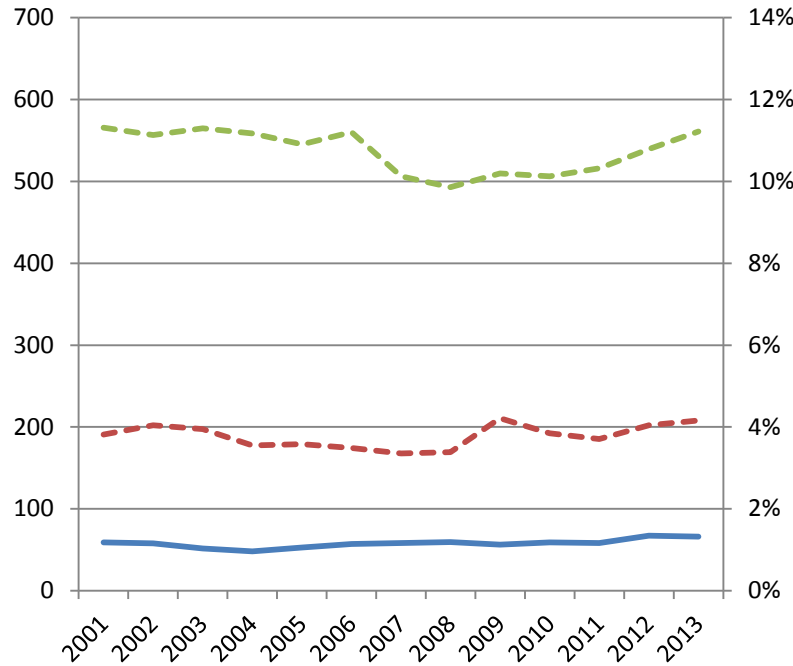
Source: SIPRI; Military Balance 2014; analysis by CSIS NSPIR Group.

# Total Defense Spending and as a % GDP and Government Expenditure, 2001-2013

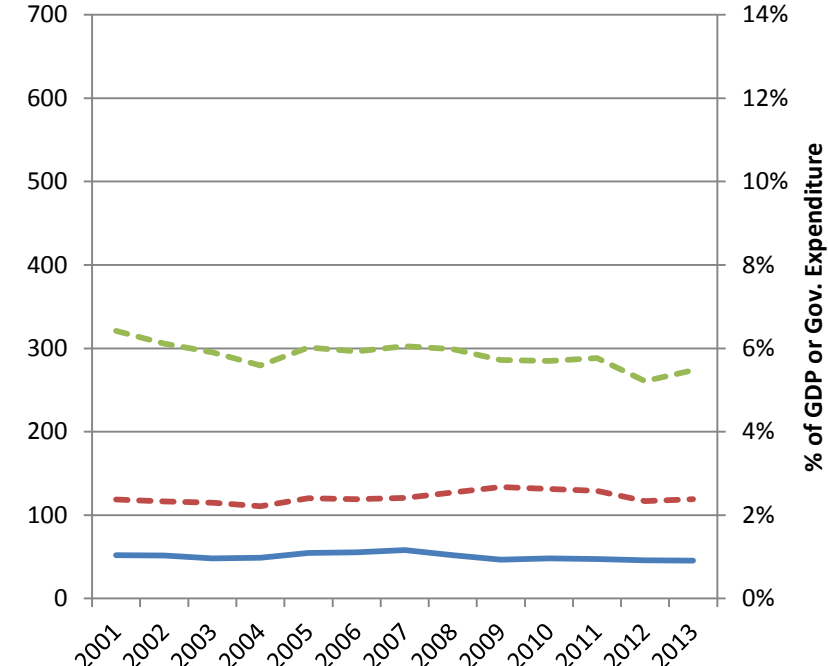
United States



Russia



United Kingdom



— Real Military Spending    - - - Military Spending as % of GDP    - - - Military Spending as % of Government Expenditure

Source: NATO Financial and Economic Data 2014; IMF Economic Outlook; SIPRI Military Expenditure Data; analysis by CSIS NSPIR Group.

## Key Findings

- Topline defense spending decreased in line with CSIS's 'Slow Decline' Prediction from 2011, not with 'Accelerated Decline' prediction
  - Per soldier spending did not decline as predicted, mostly due to further shrinking troop numbers
    - *Suggests countries may be retaining quality forces with lower overall force strength*
- Equipment spending up slightly; share is nearly restored to 2010 level after declines in 2011 and 2012
  - Participation in collaborative equipment procurement projects could explain part of this increase
  - European defense industrial base appears to remain relatively healthy, buoyed perhaps by the increase in Equipment spending and the increased revenue from other parts of world
- R&D spending by European governments continues to decline rapidly, as does R&D investment by defense industrial companies, though at a slower pace

## Appendices

- **List of Countries Analyzed**
- **List of CSIS ESDS Index Companies**
- **List of Total Complete Time Series Data**

## Countries Analyzed

<b>Big Three</b>	<b>Southern Europe</b>	<b>Visegrad Four</b>	<b>Other Central and Eastern Europe</b>
France	Cyprus	Czech Republic	Albania
Germany	Greece	Hungary	Bosnia & Herzegovina
United Kingdom	Italy	Poland	Bulgaria
	Malta	Slovakia	Croatia
	Portugal		Macedonia
<b>Other Western Europe</b>	<b>Spain</b>	<b>Baltic Region</b>	Moldova
Austria	Turkey	Estonia	Montenegro
Belgium		Latvia	Romania
Ireland	<b>Northern Europe</b>	Lithuania	Serbia
Luxembourg	Denmark		Slovenia
Netherlands	Finland		
Switzerland	Norway		
	Sweden		

## Countries with Complete Time Series Data

All countries except Montenegro and Bosnia & Herzegovina have complete time series data for Total Defense.

Country	Complete Time Series	Country	Complete Time Series
Austria	R&D Category	Netherlands	All Categories
Belgium	NATO Categories	Norway	All Categories
Czech Republic	All Categories	Poland	NATO Categories
Denmark	All Categories	Portugal	All Categories
Finland	R&D Category	Romania	R&D Category
France	All Categories	Slovakia	R&D Category
Germany	All Categories	Slovenia	R&D Category
Greece	All Categories	Spain*	All Categories
Hungary	NATO Categories	Sweden	R&D Category
Ireland	R&D Category	Turkey	NATO Categories
Italy	NATO Categories	United Kingdom	NATO Categories
Luxembourg	NATO Categories		

\* Spain was missing NATO defense spending category breakdowns for 2013, which were substituted by carrying over percentages from 2012.

## Companies in the CSIS ESDS Index

Company Name	Country	Company Name	Country
BAE Systems	United Kingdom	Qinetiq	United Kingdom
Finmeccanica	Italy	Safran	France
Thales	France	Babcock International Group	United Kingdom
Zodiac Aerospace	France	Ultra Electronics Holdings	United Kingdom
Cobham	United Kingdom	Chemring Group	United Kingdom
Rheinmetall	Germany	OHB	Germany
Indra Sistemas	Spain	Comrod Communication	Norway
Serco Group	United Kingdom	Dassault Aviation	France
SAAB	Sweden	Kongsberg Gruppen	Norway



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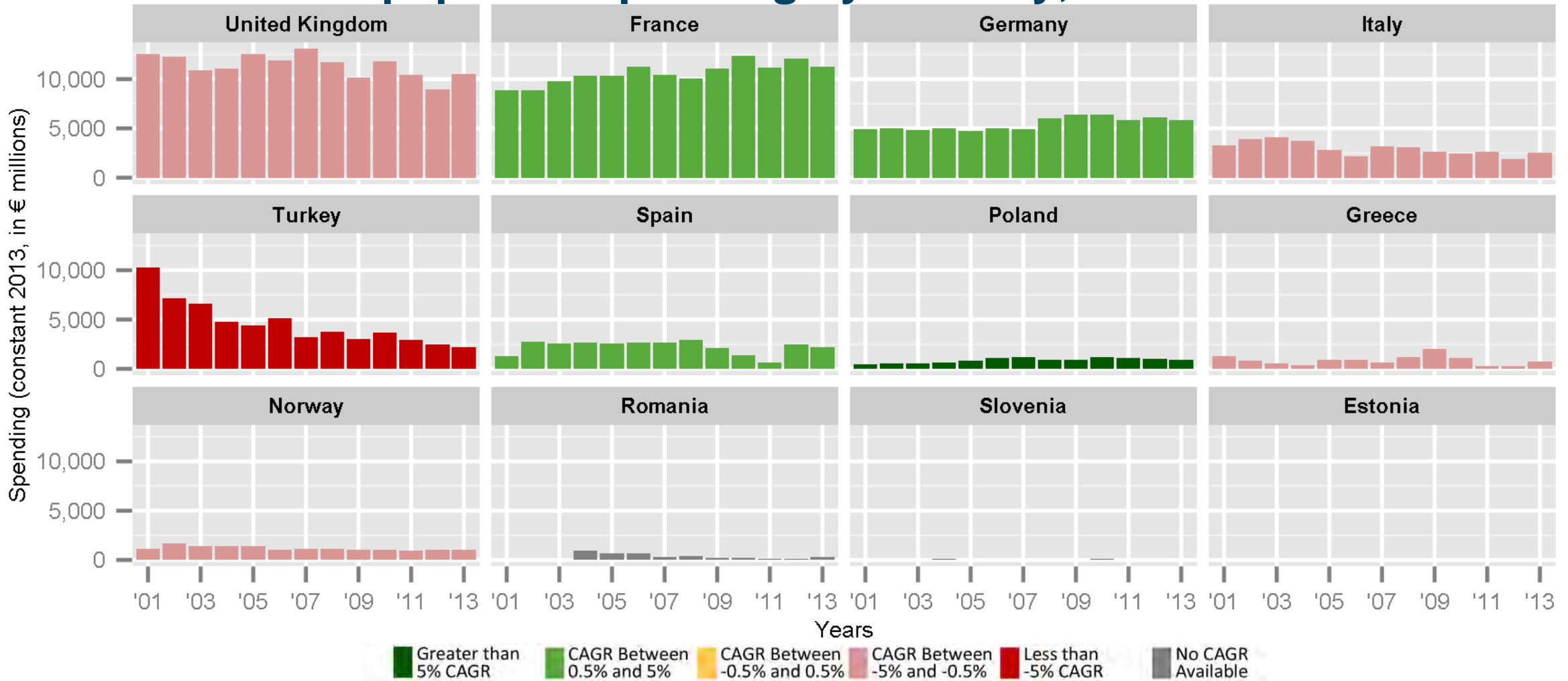
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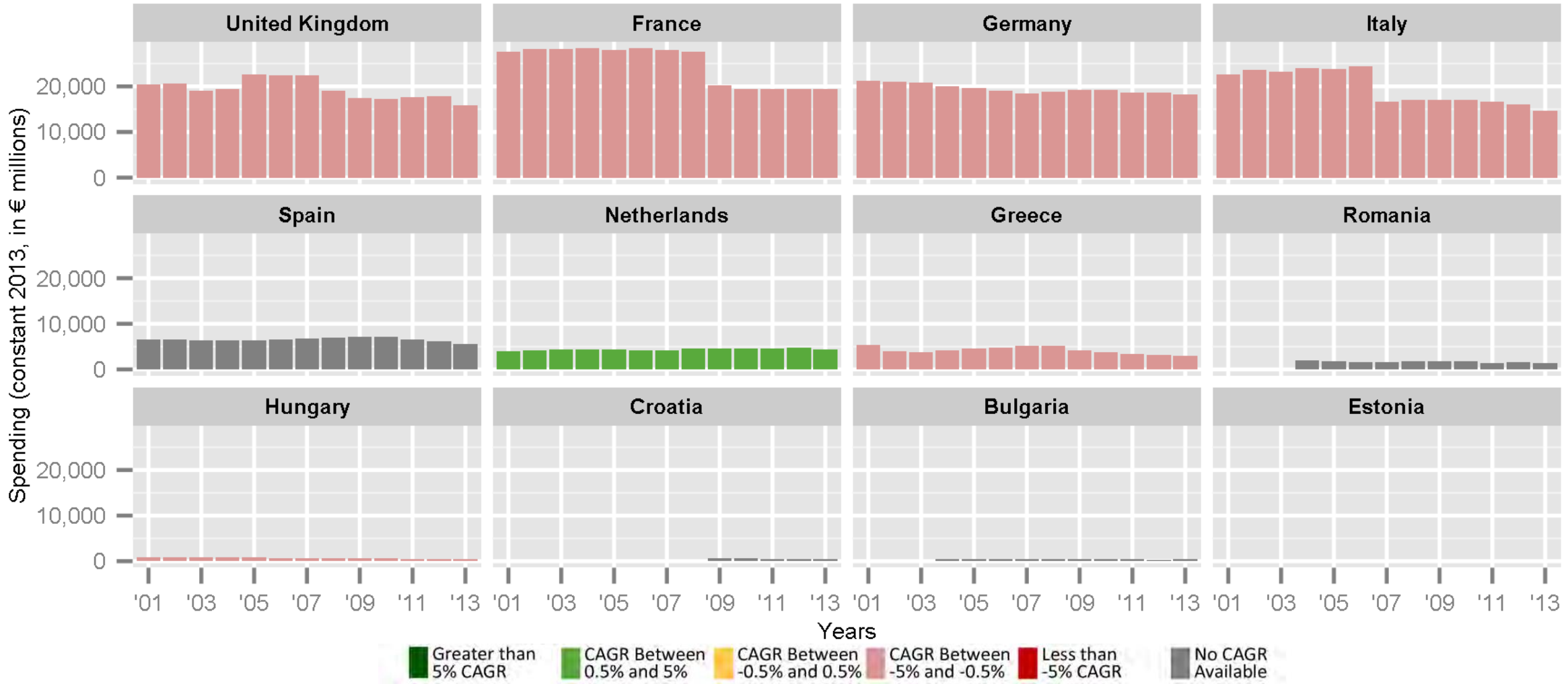
Former U.S. senator Sam Nunn has chaired the CSIS Board of Trustees since 1999. Former U.S. deputy secretary of defense John J. Hamre became the Center's president and chief executive officer in April 2000.

## SUPPLEMENTAL GRAPHS WITH COUNTRY DETAIL

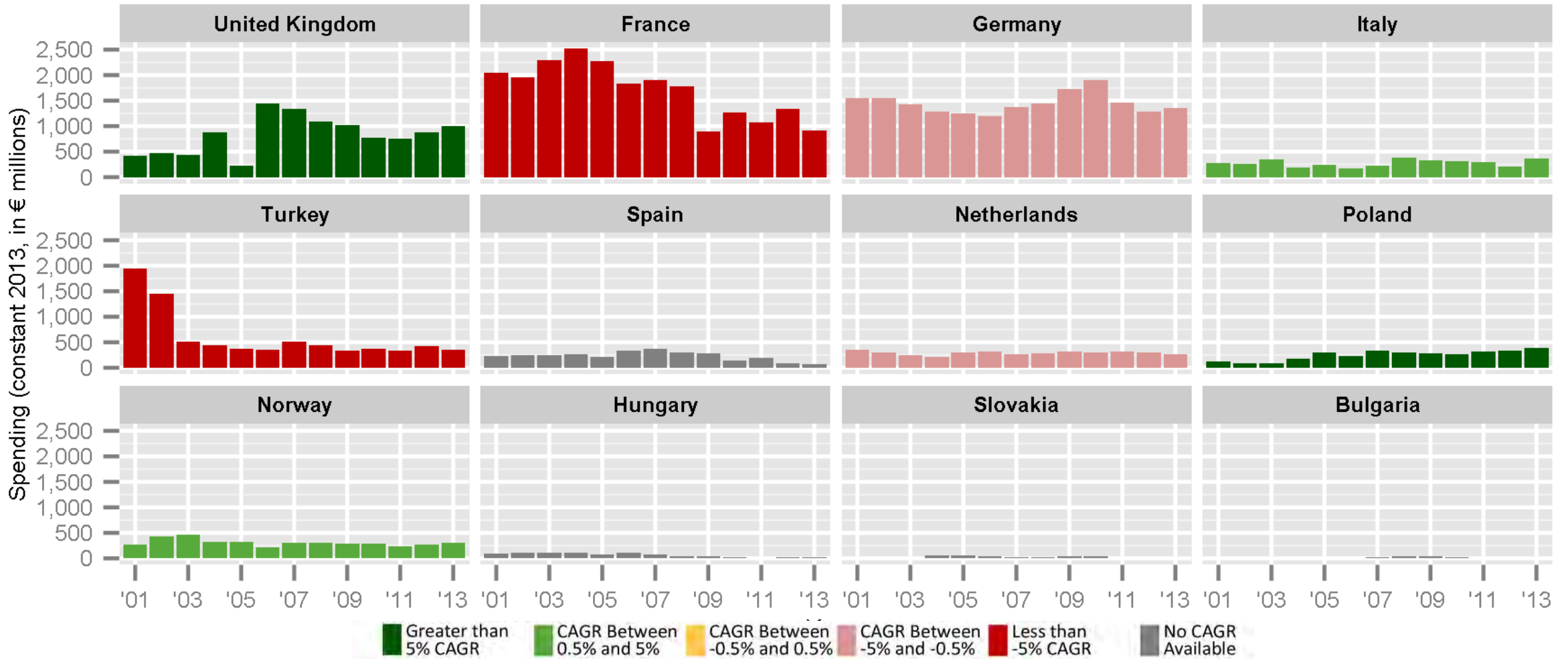
# Equipment Spending by Country, 2001-2013



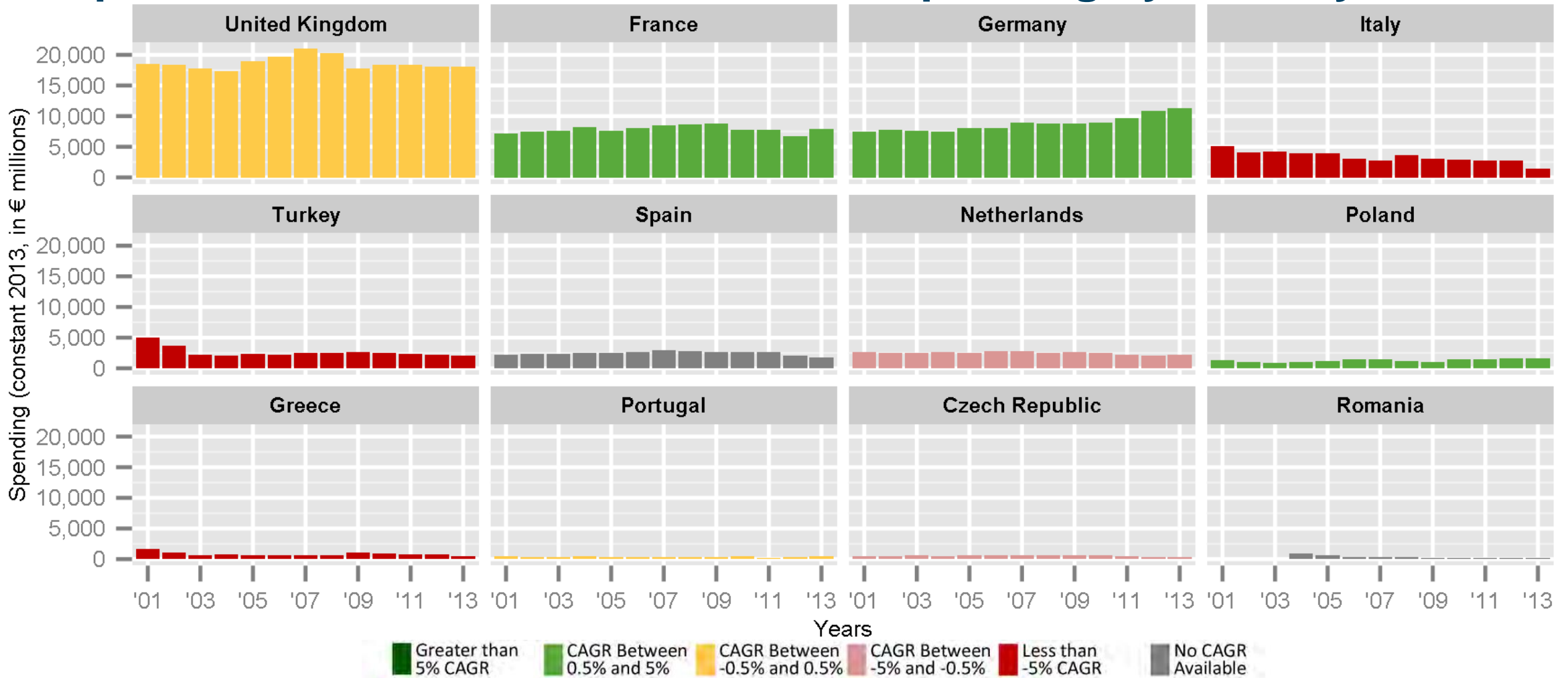
# Personnel Spending by Country, 2001-2013



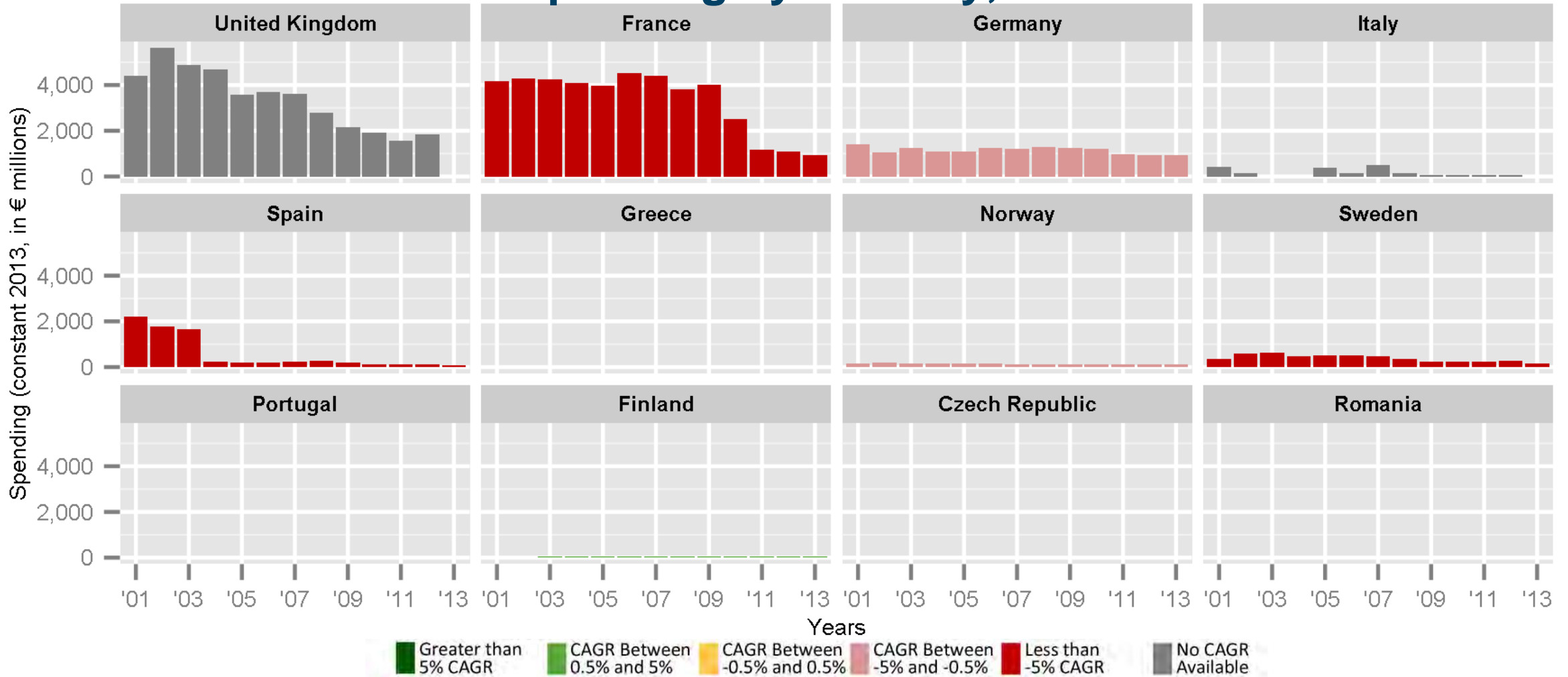
# Infrastructure Spending by Country, 2001-2013



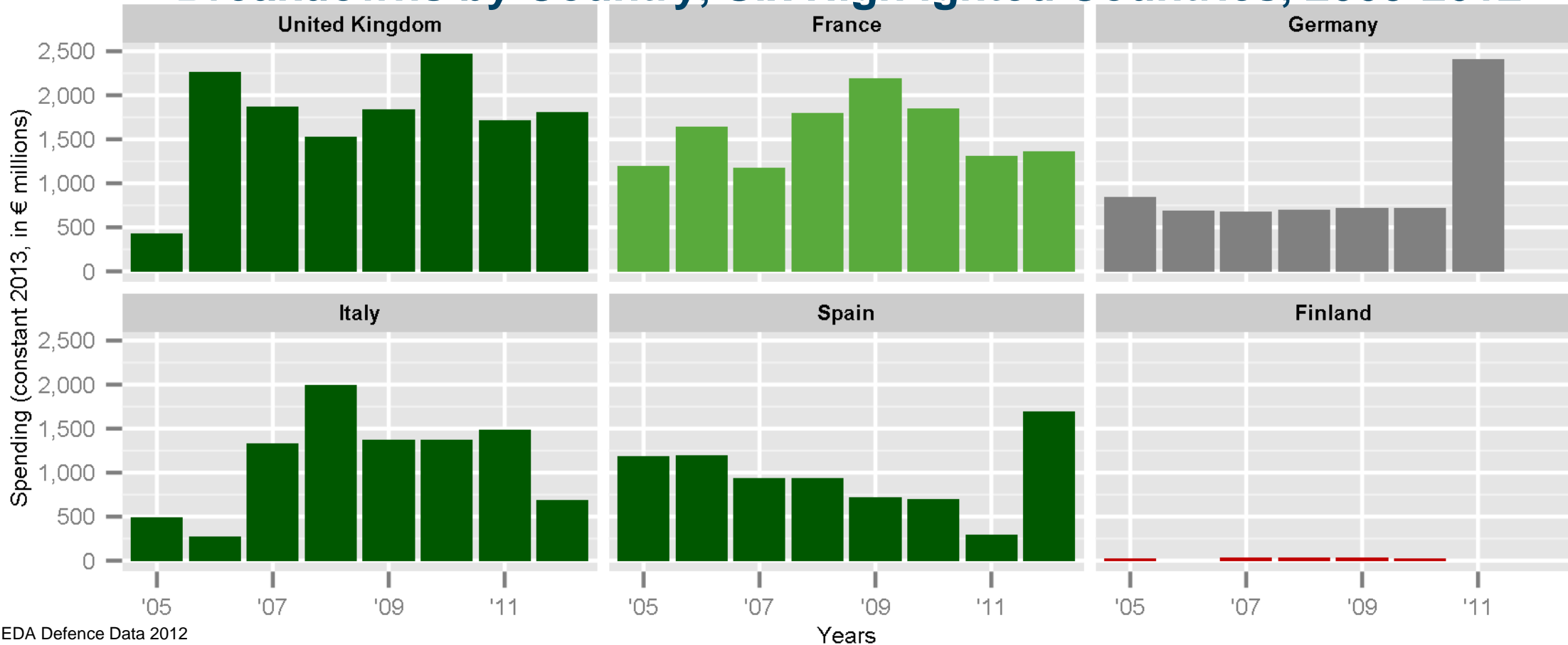
# Operations & Maintenance and Other Spending by Country, 2001-2013



# R&D Spending by Country, 2001-2013

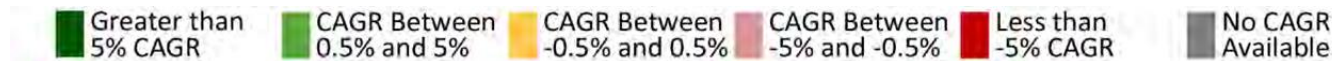


# Collaborative Defense Equipment Spending with European nations, Breakdowns by Country, Six Highlighted Countries, 2005-2012



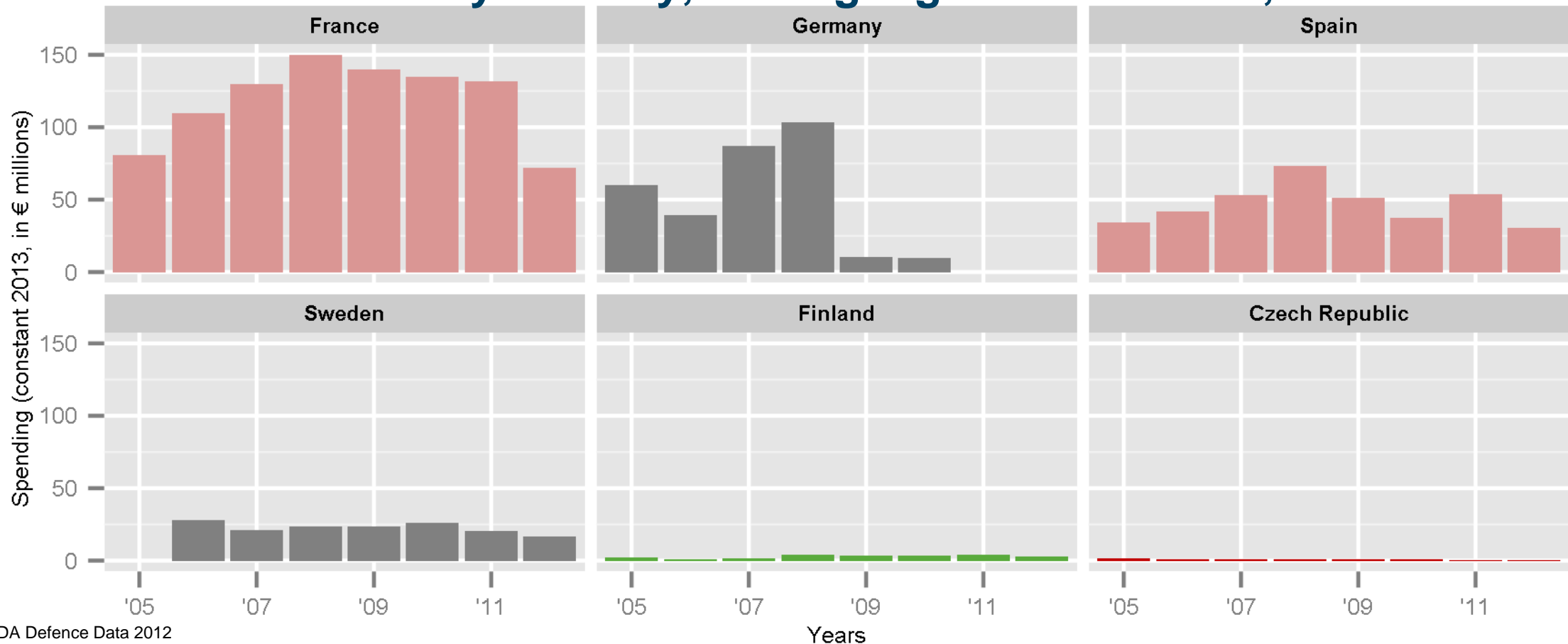
Source: EDA Defence Data 2012

Note: Highlighted countries were selected based on significant spending and data availability.





# Collaborative Defense R&T Spending with European nations, Breakdowns by Country, Six Highlighted Countries, 2005-2012



Source: EDA Defence Data 2012  
 Note: Highlighted countries were selected based on significant spending and data availability.

■ Greater than 5% CAGR   
 ■ CAGR Between 0.5% and 5%   
 ■ CAGR Between -0.5% and 0.5%   
 ■ CAGR Between -5% and -0.5%   
 ■ Less than -5% CAGR   
 ■ No CAGR Available