

# General Government Net Indebtedness – Is There A Role for the Asset Side?

*“A national debt, if it is not excessive, will be to us a national blessing.”*

Alexander Hamilton, letter to Robert Morris, Apr. 30, 1781

*“It shows nobility to be willing to increase your debt to a man to whom you already owe much.”*

Marcus Tullius Cicero

**Jacob Funk Kirkegaard**  
**Peterson Institute For International Economics**

## I Introduction

Government debt levels in United States and Europe has since the beginning of the Great Recession in 2008 risen to unprecedented peacetime levels approaching 100 percent of GDP. The focus of political and debt market concerns have generally been rising general government gross debt levels. This paper will take a broader approach to government debt, and in addition consider the scope of contingent liabilities from public interventions to support financial institutions and financial markets since 2007<sup>1</sup>, as well as especially the asset side of governments' balance sheets. This paper will ask the question if “forgotten government assets” hold the answer to today's high general government gross debt levels? The paper will attempt to estimate government financial and non-financial assets and consider the political and economic possibilities of disposals of recently acquired distressed assets by governments on both sides of the Atlantic, as well as the wider-ranging prospects for renewed privatization drives to reduce government debt levels.

## II The New Debt Reality in Europe and the United States

The Great Recession, which in both the United States and Western Europe caused the largest decline in economic activity in 50 years<sup>2</sup>, has through resulting declines in government revenues and necessary

---

<sup>1</sup> Includes only the direct actions by national governments. Financial market interventions carried out by the European Central Bank and U.S. Federal Reserve in support of financial stability and economic growth will not be considered, as central banks are not considered part of the general government for statistical and accounting purposes. Government support measures for non-financial institutions and general economic stimulus support are also not included.

<sup>2</sup> See IMF (2009).

counter-cyclical stimulus spending generated the highest transatlantic peacetime general gross government<sup>33</sup> debt levels in modern history. This trend is summarized in table 1.

**Table 1: General Government Gross Debt Levels 1980-2012p, Percent of GDP**

Country	1980	1990	2000	2007	2008	2009	2010	2011p	2012p
United States	42.3	63.9	54.8	62.3	71.6	85.2	94.4	100.0	105.0
EU-27	N/A	N/A	62.4	59.5	63.9	74.3	79.8	82.3	83.7
Euro Area 17	N/A	54.1	69.1	66.4	70.1	79.7	85.8	88.6	90.0
Germany	N/A	N/A	59.7	65.0	66.4	74.1	84.0	82.6	81.9
France	20.7	35.2	57.3	64.2	68.2	79.0	82.3	86.8	89.4
Netherlands	N/A	N/A	53.8	45.3	58.2	60.8	63.7	65.5	66.5
Belgium	74.1	125.8	107.9	84.2	89.6	96.2	96.7	94.6	94.3
Austria	N/A	56.1	66.5	60.7	63.8	69.6	72.2	72.3	73.9
Finland	10.8	13.9	43.8	35.2	33.9	43.3	48.4	50.2	50.3
Slovak Republic	N/A	N/A	50.3	29.6	27.8	35.4	41.8	44.9	46.9
Slovenia	N/A	N/A	26.8	23.4	22.5	35.5	37.3	43.6	47.2
Luxembourg	N/A	N/A	6.2	6.7	13.6	14.6	18.4	19.7	21.5
Estonia	N/A	N/A	5.1	3.7	4.6	7.2	6.6	6.0	5.6
Cyprus	N/A	N/A	48.7	58.3	48.3	58.0	60.8	64.0	66.4
Malta	N/A	N/A	55.9	61.8	61.3	67.3	67.1	66.3	66.1
<b>Countries Supported By the ECB</b>									
Italy	N/A	94.7	109.2	103.6	106.3	116.1	119.0	121.1	121.4
Spain	16.6	42.5	59.3	36.1	39.8	53.3	60.1	67.4	70.2
<b>IMF Program Countries</b>									
Greece	22.6	73.3	103.4	105.4	110.7	127.1	142.8	165.6	189.1
Portugal	N/A	57.3	48.5	68.3	71.6	83.0	92.9	106.0	111.8
Ireland	65.2	93.5	37.8	24.9	44.4	65.2	94.9	109.3	115.4
<b>Non-Euro "Old EU Members"</b>									
United Kingdom	46.1	32.6	40.9	43.9	52.0	68.3	75.5	80.8	84.8
Denmark	N/A	N/A	60.4	34.1	42.2	41.8	43.7	44.3	45.8
Sweden	N/A	N/A	53.2	40.2	38.8	42.8	39.7	36.0	32.6
<b>Other OECD Countries</b>									
Australia	N/A	16.2	19.3	9.6	11.7	16.9	20.5	22.8	23.8
Canada	N/A	75.2	82.1	66.5	71.1	83.3	84.0	84.1	84.2
Japan	51.4	68.0	142.1	187.7	195.0	216.3	220.0	233.1	238.4
Korea	N/A	12.8	16.7	30.7	30.1	33.8	33.4	32.0	30.0
Switzerland	N/A	38.2	61.1	57.2	54.8	54.8	54.5	52.4	51.2

Source: IMF World Economic Outlook Database September 2011;

Table 1 shows how in recent years general government gross debt levels in the United States have for the first time surpassed levels in the EU-27 and euro area, as well as all individual EU-15 and euro area members, except Greece, Italy, Belgium and Ireland. Meanwhile, going back further in time, it is evident how general government debt in all countries (except the U.K. under Margaret Thatcher) rose rapidly from relatively low levels during the 1980s, before beginning to decline from a combination of rapid economic growth and spending restraints in the United States, Belgium and Ireland during the 1990s. After 2000, this transatlantic trend, however, reversed itself, as U.S. general government debt levels began rising, while those of the EU-27 and euro area declined slightly. In Europe therefore did the

<sup>33</sup> Comparing debt levels at the general government level, i.e. including all sub-national governmental levels at state, regional and local levels, allows for more accurate comparisons between different countries irrespective of whether they have a unitary or federal governmental structure. Regrettably, for most countries debt data at the general government levels is only available for recent decades.

dramatic increase in general government indebtedness after 2007 mark a reversal of longer-term trends, while in the United States the Great Recession merely accelerated what was already rising indebtedness.

Table 1 further illustrates how low government debt levels going into the Great Recession provided no ex ante guarantee for countries to escape its effects. Most explosively in Ireland, where a debilitating construction and real estate collapse and an ensuing banking crisis has caused general gross government debt levels to explode from just 25 percent of GDP in 2007 to an estimated 109 percent in 2011, pushing the country into the arms of the IMF. But also Spain, which in August 2011 had to be supported by the ECB secondary market bond purchases to shore up confidence<sup>4</sup>, as late as 2008 had less than 40 percent of debt to GDP. This issue will be further explored in section III below.

### **III The Transfer of Private “Distressed Assets” to the Public Sector During the Crisis**

The scale of the drop in economic output during the Great Recession (reducing the denominator) and the associated drops in government revenues and scaled up stimulus spending (increasing the numerator) is responsible for the majority of the deterioration in general government debt levels.

As can be seen in table 1, countries like Ireland, Spain and the UK, which as late as 2007-08 had general government debt levels below or close to 40 percent of GDP by 2011 had far higher levels, which in the case of Ireland surpassed 100 percent of GDP and had forced the country to seek conditional financial assistance from the IMF and the EU. In all three countries, the Great Recession exposed the relative procyclicality of government revenues – buoyed pre-crisis by strong revenues related to booms in the construction, real estate or financial services industries<sup>5</sup> – and showed how even their very low pre-crisis general government debt levels was no reliable indicator of their ultimate debt sustainability. Low gross debt levels pre-crisis is no panacea, and general government revenue sources reliable through the business cycle and robust to especially real estate and construction decelerations are an important additional source of long-term fiscal stability.

However, the public policy response to the global financial crisis, which has since 2007 required U.S. and EU government interventions into the private financial sector of an unparalleled magnitude, has played a critical role in the debt build-up, too.

Substantial amounts of impaired<sup>6</sup> or illiquid<sup>7</sup> privately owned financial assets and liabilities have in the absence of operating and sufficiently deep distressed assets/debt markets<sup>8</sup> during the course of the

---

<sup>4</sup> See ECB Press Release August 7<sup>th</sup>, 2011 at <http://www.ecb.int/press/pr/date/2011/html/pr110807.en.html>.

<sup>5</sup> See OECD (2009, 2011a and 2011b) for discussions of the high government revenue volatility in the UK, Ireland and Spain and the need for less cyclically sensitive revenue sources.

<sup>6</sup> Impaired assets refer to assets in a balance sheet valued in excess of their long-term/fair value and consequently expected to incur future losses. Eurostat (2011a).

<sup>7</sup> Illiquid assets refer to assets that cannot be disposed of in the short term due to the lack of a properly functioning market. Eurostat (2011a).

crisis been transferred to the general government to support individual institutions and the financial system as a whole<sup>9</sup>. Notable examples of entire institutions taken over by governments are Anglo-Irish Bank, the Irish National Building Society and Allied Irish Bank (AIB) in Ireland, Bradford and Bingley (B&B) and Northern Rock in the UK, Hypo Real Estate (HRE) and IKB Deutsche Industriebank in Germany, Caja Castilla La Mancha (CCM) and CajaSur in Spain, or AIG, Fannie Mae and Freddie Mac in the United States. Asset transfers from private financial institutions to the general government have also taken the form of partial guarantees of high risk assets in some institutions<sup>10</sup> or the transfer of only part of the risky asset of an institution to the general government sector<sup>11</sup>.

The complexity of many government financial rescues and associated uncertainty about how such operations are recorded in governments' accounts raises questions about the ultimate effect on the same governments' reported indebtedness of such measures to stabilize the financial system. Two principal issues cloud the outlook;

First, there is the question of the correct sector classification – inside or outside the general government sector – of the entities created during the crisis (See also box 1). In the EU, where the rules concerning the Stability and Growth Pact's Excessive Deficit Procedure creates an obvious incentive for national governments to seek to place any financial defeasance entity created during the crisis outside the general government sector to eliminate any potential adverse effect on annual deficit levels, this is a particular concern and has prompted a series of Eurostat statistical decisions to clarify the issue<sup>12</sup>.

---

<sup>8</sup> Distressed assets or debt typically refers to assets or debt that is put on sale, usually at a highly attractive price, because its owner is compelled to sell it at short notice. Multiple reasons for such sales can be envisioned, including seller bankruptcy, excessive debts or prudential and regulatory constraints.

<sup>9</sup> Activities of central banks are outside the scope of this paper. However, while central banks for reasons of risk control in normal times would probably never engage in transactions involving distressed assets and lend only against high quality collateral, the global financial crisis has led to numerous examples of such transactions. The ECB in May 3<sup>rd</sup> 2010 suspended its application of the minimum credit rating threshold in the collateral eligibility requirements in open market operations for Greek government and guaranteed collateral, a suspension subsequently extended to also to Ireland and Portugal. The ECB has further since May 2010 been engaged in purchases of euro area government bonds through its Securities Market Program (today €152.5bn) and the ECB covered bond purchase program (today €59.4bn)). See ECB website at <http://www.ecb.int/mopo/implementation/omo/html/index.en.html>. The U.S. Federal Reserve for instance in June 2008 extended credit to Maiden Lane I LLC to acquire certain assets from Bear Stearns, did so again in November and December 2008 in Maiden Lane II LLC and III LLC to purchase assets from AIG, and also during the operation of the Term Asset-Backed Securities Loan Facility (TALF), see <http://www.federalreserve.gov/releases/h41/current/h41.htm#h41tab4>.

<sup>10</sup> This was the case in for instance the loss-sharing agreement between Citigroup, the U.S. Treasury, Federal Reserve and FDIC of \$301bn in Citigroup assets under the U.S. Treasury TARP-funded Asset Guarantee Program. The guarantee was in place from January to December 2009, but did not result in any losses to the U.S. government. See U.S. Treasury (2010:30f) for details.

<sup>11</sup> This was the case with for instance the transfer of €77.5bn of WestLB assets to the government controlled Erste Abwicklungsanstalt (EAA) in 2009. See EEA (2011) for details.

<sup>12</sup> See Eurostat (2009, 2011a and 2001b) and related publications at [http://epp.eurostat.ec.europa.eu/portal/page/portal/government\\_finance\\_statistics/excessive\\_deficit/supplementary\\_tables\\_financial\\_turmoil](http://epp.eurostat.ec.europa.eu/portal/page/portal/government_finance_statistics/excessive_deficit/supplementary_tables_financial_turmoil).

However, in the United States, too – likely prompted by the desire to avoid the full consolidation of Government Sponsored Entities (GSEs)<sup>13</sup> taken into conservatorship in 2008 onto the federal government’s books – has this issue emerged during the crisis. Today, while the U.S. executive branch continues to treat Fannie Mae and Freddie Mac as outside the U.S. federal government for budgetary purposes, the Congressional Budget Office considers that the two GSEs should be treated in the federal budget as government entities. Neither the Executive branch nor the CBO, though, incorporates debt securities or mortgage-backed securities issued by Fannie Mae and Freddie Mac in estimates of federal debt held by the public<sup>14</sup>.

Secondly, there is the broader matter of accounting for the gross and net debt effects of transfers to the general government sector of impaired or illiquid assets during the crisis. Public interventions to support private financial institutions during the crisis which resulted in the government taking majority or full ownership of the rescued entity (e.g. nationalization) invariably resulted in the transfer of both assets and liabilities to the general government sector. Often, the value of liabilities assumed by the general government is most easily established (assuming that for purposes of instilling financial stability the general government does not pursue default on such assumed obligations) and can be added to the existing gross debt levels of the general government.

However, as described in box 1, the concept and extent of general government assets and their valuation is generally surrounded by considerable uncertainty. An asset value uncertainty that is often acute, when dealing impaired or illiquid asset taken over in a crisis, whose long-term value is by definition uncertain. Correspondingly, the net debt effects of financial rescues are unclear, but invariably (as the recovery value of assumed assets will almost always be above zero) considerably smaller than the gross debt effects for the general government.

### **Box 1: Accounting Treatment of the Public Sector**

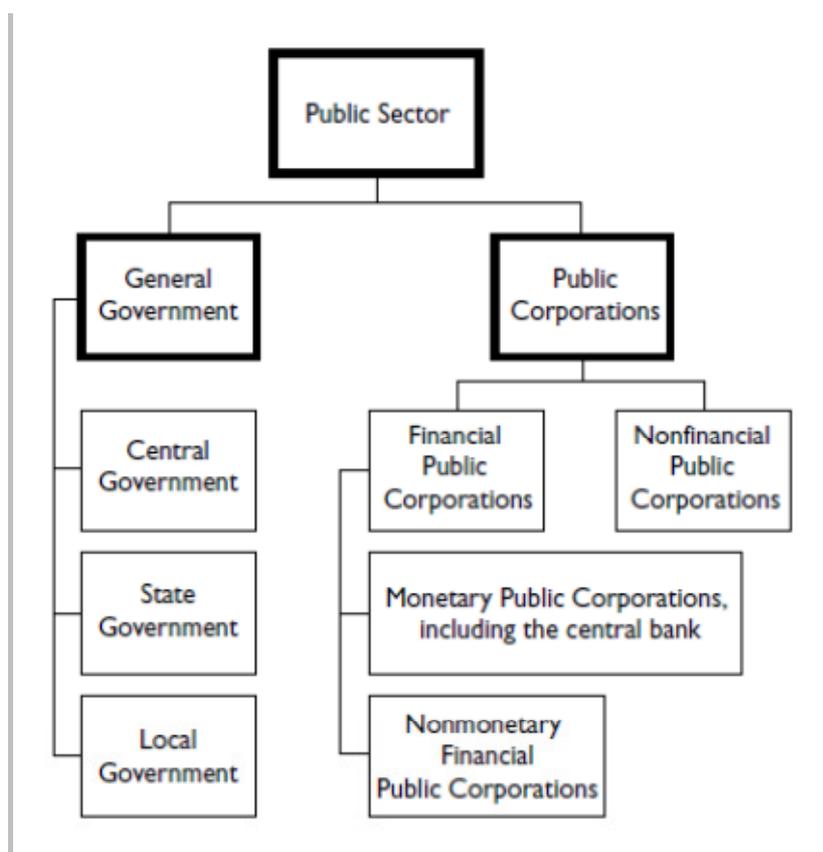
Comprehensively accounting for the economic activities of governments is a complex affair, as the public sector makes up for a sizable chunk of modern economies. The IMF’s Government Finance Statistics Manual (GFSM)<sup>15</sup> breaks the public sector into several constituent parts, as depicted in figure 1;

**Figure 1: The Public Sector Broken Down**

<sup>13</sup> Government-sponsored enterprises (GSEs) are federally chartered but established to be privately owned and operated financial institutions authorized to make loans or loan guarantees for limited purposes. GAO (2009) lists three GSE – Fannie Mae, Freddie Mac and the Federal Agricultural Mortgage Corporation (Farmer Mac), while the U.S. Office of Management and Budget typically include also the Farm Credit System and the Federal Home Loan Bank System among GSE-type entities.

<sup>14</sup> See CBO (2010).

<sup>15</sup> This box builds extensively on IMF’s Statistics Department GFSM, 2<sup>nd</sup> Edition (IMF 2001) available at <http://www.imf.org/external/pubs/ft/gfs/manual/>.



Source: IMF (2001).

The “General Government” consists of all legal and administrative levels in a country, which is typically (though not exhaustively) comprised by the central, state and local government subsectors. Important, though, is what is not included in the “general government sector”, namely public corporations and quasi-corporations owned by the general government. Such corporations may carry out governmental operations and specific transactions on behalf of their general government owners in a variety of forms with fiscal policy implications, including; lending to special parties at preferential interest rates, selling power to select customers at reduces rates, employing more staff than required, purchasing additional inputs at above-market prices, or selling output at less than market determined prices. Changes in the value of public corporations will moreover affect the value of the equity-type assets held by the general government.

In figure 1, the GFSM list two separate analytical sub-groupings for public corporations; 1) Non-financial public corporations, including all resident non-financial corporations controlled by general government units; and 2) Financial public corporations, divided into a) Monetary public corporations, including the central bank<sup>16</sup> and all resident depository corporations controlled by the general government; and b)

<sup>16</sup> The central bank includes the central bank itself, currency boards or other independent authorities that issue national currency backed by foreign exchange reserves, and any other entity that primarily perform central bank activities.

Non-monetary financial public corporations. For the purposes of this paper, the classification of the central bank outside the general government is of particular importance.

Like private corporations, the public sector and its constituent parts also have a balance sheet, or stock compilation, as a statement of the value of the assets owned at a specific time and the financial claims, or liabilities, held by other entities against it. As with private entities, assets included on the public sector balance sheet must be economic assets over which ownership rights are enforced and from which economic benefits are derived from use over a period of time.

However, due to the sovereign character of governments, their balance sheets will invariably incorporate a wider range of assets than do private organizations. Such assets contain “infrastructure assets”, i.e. immovable non-financial assets with no alternative use and whose benefits accrue to the public in general, including such items as streets, highways, bridges, communication networks, military assets, canals or dikes. Governments also own “heritage assets”, generally intended to be preserved indefinitely due to historic, cultural or educational significance. Lastly, governments by exercising their sovereign powers can create new assets for itself by asserting ownership over naturally occurring assets that would otherwise not be subject to ownership. Such “non-produced assets” include electromagnetic spectrum, subsoil natural resources, fresh water and hydro-resources or fishing resources in exclusive economic zones.

Box table 1 presents a simplified version of a public sector entity balance sheet.

**Box Table 1: The Public Sector Balance Sheet Items**

Assets	Liabilities
<p><b><u>Financial Assets</u></b></p> <p><b>Domestic</b></p> <ul style="list-style-type: none"> <li>Currency and Deposits</li> <li>Securities Other Than Shares</li> <li>Loans</li> <li>Shares and Other Equity</li> <li>Insurance Technical Reserves</li> <li>Financial Derivatives</li> <li>Other Accounts Receivable</li> </ul> <p><b>Foreign</b></p> <ul style="list-style-type: none"> <li>Currency and Deposits</li> <li>Securities Other Than Shares</li> <li>Loans</li> <li>Shares and Other Equity</li> <li>Insurance Technical Reserves</li> <li>Financial Derivatives</li> <li>Other Accounts Receivable</li> </ul> <p><b>Monetary Gold and SDRs</b></p> <p><b><u>Non-Financial Assets</u></b></p> <p><b>Fixed Assets</b></p> <ul style="list-style-type: none"> <li>Buildings and Structures</li> <li>Machinery and Equipment</li> <li>Other Fixed Assets</li> </ul> <p><b>Inventories</b></p> <p><b>Non-Produced Assets</b></p> <ul style="list-style-type: none"> <li>Land</li> <li>Subsoil Assets</li> <li>Other Naturally Occurring Assets</li> </ul>	<p><b>Domestic</b></p> <ul style="list-style-type: none"> <li>Currency and Deposits</li> <li>Securities Other Than Shares</li> <li>Loans</li> <li>Shares and Other Equity (Public Corporations Only)</li> <li>Insurance Technical Reserves</li> <li>Financial Derivatives</li> <li>Other Accounts Payable</li> </ul> <p><b>Foreign</b></p> <ul style="list-style-type: none"> <li>Currency and Deposits</li> <li>Shares and Other Equity (Public Corporations Only)</li> <li>Loans</li> <li>Shares and Other Equity</li> <li>Insurance Technical Reserves</li> <li>Financial Derivatives</li> <li>Other Accounts Payable</li> </ul>

Source: IMF (2001)

In principle, the GFSM demands that the valuation of all government assets at any given time is their current market value. However, given the character of many especially non-financial government assets, in reality no functioning market for price discovery exists for most items on the public sector's balance sheet asset side. Correspondingly, the statistical reporting of general government balance sheet values is extremely limited and invariably not consistent across even industrialized countries<sup>17</sup>.

In reality, due to these data deficiencies, probably no truly comparable data exists today for for instance trans-Atlantic net general government debt levels, due to differences in the collection methodologies of

<sup>17</sup> This is illustrated by the fact that no country in the IMF membership reports data values for non-financial governmental assets to the IMF Government Finance Statistics.

government financial asset data<sup>18,19</sup>. At the same time, it is evident from the composition of governments' non-financial assets that their value can never be an objective or exact number, but will always be "political number". Or in other words, net general government debt levels are invariably wholly dependent on the political willingness of a sovereign government to make its financial and especially non-financial assets available for purchase by private investors and the conditions of the process at a given point in time.

Dramatic political reorientations of government policy concerning the scope of the general government emerging from an urgent sovereign debt crisis (like in Greece currently) or political revolutions (1989 and after in the former communist countries) can consequently have a direct and material impact on governments' net debt levels. The launch of privatization drives from similar shifts in governments' political orientation can have the same effects.

Due to the – at least in industrialized nations with solid governmental institutions – large stock of government non-financial assets which could potentially be sold to private entities, sovereign debt crises in the OECD inevitably therefore revolves around a sovereign's "willingness to pay" at least as much as its objective "capacity to pay".

#### End Box;

In the EU, Eurostat has for the purposes of ensuring evenhanded enforcement of the SGP's EDP collected a series of data covering the statistical recording of general government interventions to support financial institutions and markets during the crisis<sup>20</sup>. Based on statistical decisions for each reported instance of intervention, the Eurostat data classifies the resulting transactions as inside or outside the general government sector and their effects on general government net revenues/costs and

---

<sup>18</sup> See notes to OECD Economic Outlook Annex Table 33 "General Government Net Financial Liabilities" (defined by the OECD here as the general government gross liabilities subtracted general government financial assets) for a discussion of the large differences in data collection methodologies for OECD countries' general government financial asset data. See

[http://www.oecd.org/document/25/0,3746,en\\_2649\\_34109\\_33702745\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/25/0,3746,en_2649_34109_33702745_1_1_1_1,00.html).

<sup>19</sup> The general government net debt data presented in the IMF's WEO are calculated in a simplified manner as gross debt minus financial assets corresponding to debt instruments. The included financial assets are: monetary gold and SDRs, currency and deposits, debt securities, loans, insurance, pension, and standardized guarantee schemes, and other accounts receivable. IMF net general government debt data does not take non-financial government assets into account. See

<http://www.imf.org/external/pubs/ft/weo/2011/01/weodata/weoselser.aspx?c=193%2c158%2c122%2c542%2c124%2c137%2c156%2c181%2c423%2c138%2c935%2c196%2c128%2c142%2c939%2c182%2c172%2c576%2c132%2c936%2c134%2c961%2c174%2c184%2c532%2c144%2c176%2c146%2c178%2c528%2c436%2c112%2c136%2c111&t=34>

<sup>20</sup> Eurostat data covers seven types of transactions particularly relevant with respect to 'public interventions to support financial institutions and financial markets during the financial crisis. These include general government led recapitalization operations, lending, guarantee issuance, purchase of assets and defeasance, exchange of assets, new bodies created during the crisis and transactions carried out by public corporations. See Eurostat (2009 and 2011a).

general government assets, liabilities<sup>21</sup> and contingent liabilities. Contingent liabilities concern liabilities, which may contribute to general government liabilities in the future, even if they are not presently recorded as government debt. In the EU, such contingent liabilities have come predominantly in the form of government guarantees granted to private financial institutions' assets and liabilities, securities issued by the general government under liquidity schemes for banks, and the operations of special purpose vehicles.

In the United States, no comparable comprehensive official collection of data covering the impact of financial interventions on the U.S. general government books have been found by this author. However, COP (2011) and U.S Treasury (2010) provides data material sufficient for at least a partial reproduction of U.S. data comparable to those of Eurostat. U.S. data for incurred contingent liabilities, however, are not available. Figure 1 brings together Eurostat and compiled U.S. data.

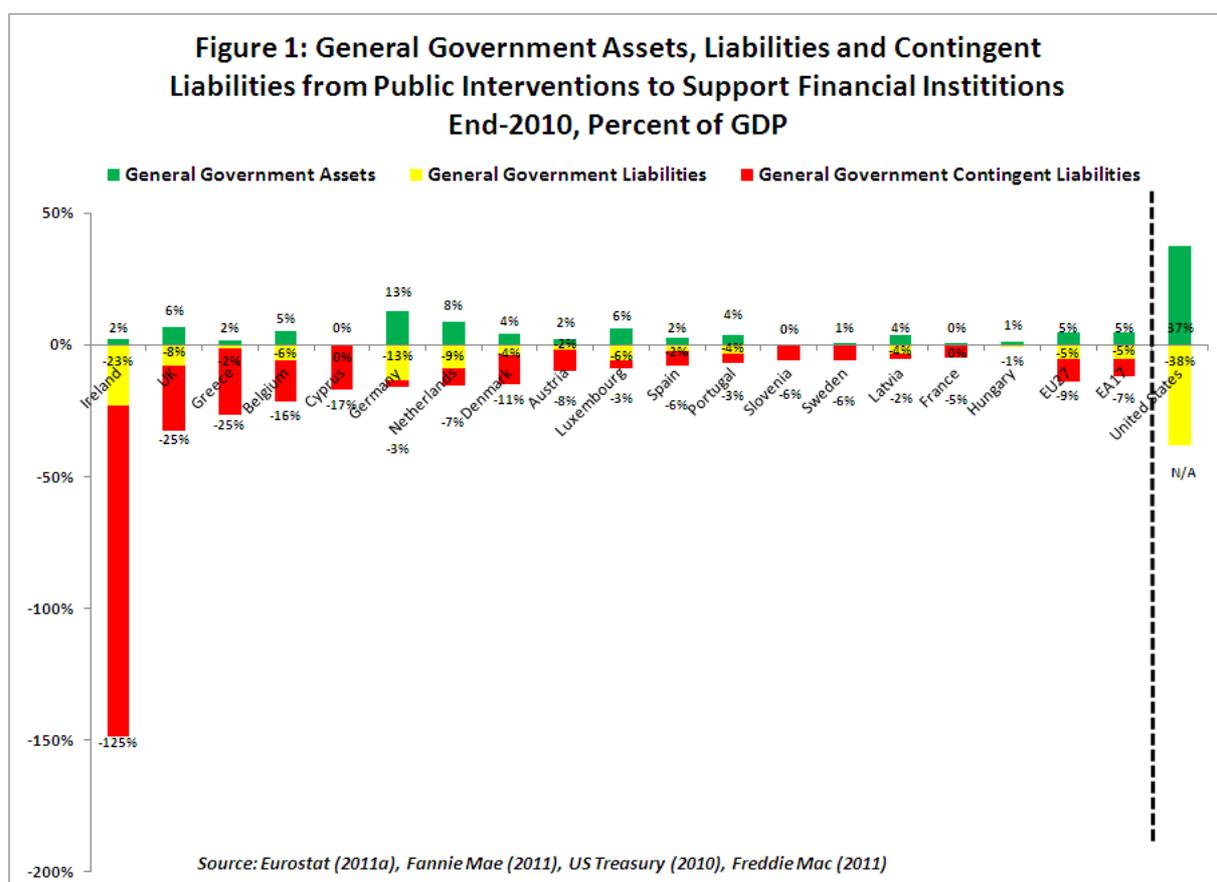


Figure 1 show the impact on general government assets and liabilities of interventions in the 17 EU members where such interventions were recorded by Eurostat and the United States<sup>22</sup>. It is noteworthy

<sup>21</sup> General government liabilities here refer to liabilities incurred by the general government to finance their interventions. Such liabilities come in the form of new government bond issuance or direct loans taken out. Eurostat (2011a: 8f)

<sup>22</sup> The ten EU members with no reported crisis intervention that resulted in changes to general government assets, liabilities and contingent liabilities were Bulgaria, the Czech Republic, Finland, Estonia, Italy, Lithuania, Malta,

how in almost all countries, the relative magnitude of assets and liabilities transferred to the general government sector roughly corresponds. As such, the impact on trans-Atlantic general government net debt levels of financial market interventions since 2007 could be relatively limited.

Only in Ireland, where very large capital injections into the country's banking sector has been financed with new general government liabilities and relatively few assets has been transferred directly to it in return, has public crisis interventions led to sizable increases in net debt levels. The Irish government's National Asset Management Agency (NAMA) is not part of the Irish general government and thus excluded from these data<sup>23</sup>. Yet, as NAMA purchased €71.2 billion in loan assets from five financial institutions involving 850 debtors with more than 11,000 individual loans collateralized by 16,000 individual properties, it paid only €30.2bn for them, implying an average 58 percent haircut on transferred private assets. Consequently, the just over €30bn in bonds (19 percent GDP) issued by NAMA is offset by assets acquired at a very substantial discount. Consolidating NAMA into the general government of Ireland will therefore in all likelihood have a relatively limited general government net debt impact, and depending on the ultimate value of the asset acquired may even serve to reduce Ireland's net debt.

Ireland's outlier status in Europe is furthermore illustrated by the magnitude of the Irish government's contingent liabilities, which even after already incurred losses remain at 125 percent of GDP<sup>24</sup>, or five times the level of contingent liabilities in second and third placed Britain and Greece and far in excess of the EU and euro area average of 7-9 percent of GDP.

The largest EU private asset (and liability) transfer directly to the general government at 13 percent of GDP has occurred in Germany, followed by the Netherlands at 8 percent and the UK and Luxembourg at 6 percent of national GDP. This illustrates the scale of the private financial sector crisis in Germany, where the collapse of several financial institutions has seen €318bn in distressed German bank assets transferred to the German general government<sup>25</sup>, accounting for nearly 75 percent of all asset transfers in the Euro area<sup>26</sup> and almost three times the level of distressed assets transferred from UK banks to the British government<sup>27</sup>.

In "distressed assets" terms therefore Germany has by a substantial margin had the second-worse banking crisis in Europe. As an instructive comparison, it should be noted that even if the Spanish government uses up all the available €99bn in its "bank rescuing fund FROB"<sup>28</sup> to comprehensively recapitalize its Cajas sector, Madrid will likely still end up spending less to clean up its failed banks than

---

Poland, Romania and Slovakia. In three of these (Finland, Italy and Lithuania) interventions affected general government deficits, but not directly the assets, liabilities and contingent liabilities of the general government.

<sup>23</sup> The decision to exclude NAMA from the Irish general government was taken by Eurostat. See NTMA (2011) and NAMA (2011).- [http://www.ntma.ie/Publications/2011/GG\\_debt\\_NTMA\\_info\\_note.pdf](http://www.ntma.ie/Publications/2011/GG_debt_NTMA_info_note.pdf)

<sup>24</sup> Ireland's contingent liabilities were 196 percent of GDP at the end of 2008 and 176 percent at the end of 2009.

<sup>25</sup> The majority of transferred distressed assets in Germany origins with the Hypo Real Estate group, in relation to which in late 2010 €175bn of assets was transferred to the federal German government's FMS Wertmanagement "wind-up company". See FMS (2011). Meanwhile, at the German state level, Erste Abwicklungsanstalt controlled by the state government of Nord-Rhein Westphalia, in 2010 saw the transfer €77.5bn of assets from the troubled WestLB Landesbank. See (EAA 2011).

<sup>26</sup> Euro area total at end-2010 was €440bn.

<sup>27</sup> At the end of 2010, €109bn of distressed assets had been transferred to the UK government.

the German government. Obviously, the German banking crisis has not occurred on the back of a domestic housing slump and hence is not accompanied by the same macro-economic downturn as seen in Ireland or Spain – but as a stand-alone banking crisis, Germany’s is proving very expensive indeed.

As the two principal German “wind up companies” – the federal German government’s FMS Wertmanagement (FMS) and the state of Nordrhein Westphalia’s Erste Abwicklungsanstalt (EAA) – has by Eurostat been reclassified into the general government<sup>29</sup>, these transfers has led to an increase in reported German gross general government debt of 9.5 percentage points of GDP from 2009-10, accounting for the vast majority of the total 2010 German debt increase to 82.3 percent of German GDP. The troubled German banking sector therefore makes up for essentially all the deterioration in 2010 of recorded gross general government debt in Germany. Without transfers of impaired assets and liabilities, Germany’s 2010 real growth rate of 3.5 percent and general government deficit of 3.3 percent would otherwise have meant an essentially stable debt-to-GDP ratio. With FMS and EAA already consolidated into the German general government sector, in the event that the companies are successful in their goal of liquidating transferred portfolios while limiting the costs to the German taxpayer, a future downward revision of reported German general government gross debt is plausible<sup>30</sup>.

Figure 1 finally illustrates the scale of assets and liabilities transferred from the private sector to the general government sector in the United States are considerably larger than in Europe. The U.S. data included in figure 1 refer to the outstanding balance of TARP funds, and the transfer of government sponsored entities (GSEs) Fannie Mae and Freddie Mac to conservatorship in the U.S. Treasury<sup>31</sup>. While as mentioned above, the U.S. executive branch does not consider the two GSEs as part of the federal (and thereby general) U.S. government for budgetary or debt recognition purposes, the logic and outcome of their financial rescue by the U.S. Treasury in 2008 should demand such treatment and with certainty amounts to an intervention-type similar to those recorded by Eurostat in the EU<sup>32</sup>.

Figure 1 shows how the consolidation of roughly comparable private assets and liabilities transferred to the U.S. government during the crisis would add little to the net U.S. general government debt position by end-2010<sup>33</sup>. On the other hand, such a consolidation of transferred assets and liabilities would have added materially to the reported gross U.S. general government debt levels reported above in table 1.

---

<sup>29</sup> See Eurostat (2011a). The estimate of U.K. transferred assets does not include the value of now majority-owned Royal Bank of Scotland.

<sup>30</sup> The recent discovery of a €55.5bn “accounting error” in FMS Wertmanagement, leading to a likely 2.6 percent downward revision in German government debt is illustrative of this potential. See Financial Times *Germany €55bn Richer After Error at Hypo “Bad Bank”*, October 29 2011.

<sup>31</sup> All asset and liability data are end-2010 values, except TARP balances from GAO (2011), which refers to the outstanding balance from March 9<sup>th</sup> 2011. Fannie Mae data from Fannie Mae (2011) and data from Freddie Mac from Freddie Mac (2011).

<sup>32</sup> The notion that Fannie Mae and Freddie Mac, when financially guaranteed and managerially completely controlled by the U.S. federal government, should not be considered a part of the general government sector, when Ginnie Mae (the Government National Mortgage Association), which performs the same tasks from within the Department of Housing and Urban Development, is, defies economic logic and common sense. See <http://www.ginniemae.gov/about/about.asp?Section=About>.

<sup>33</sup> As the U.S. Treasury has since 2008 guaranteed to maintain the two companies’ positive cash position, deteriorations of the asset quality in Fannie Mae and Freddie Mac will lead to an ongoing increase in the U.S. federal government debt. The U.S. Treasury has already provided the two GSEs with over \$100bn in new capital in this way. See Fannie Mae (2011b) and Freddie Mac (2011b). The CBO currently includes estimates of such future losses in its baseline budget projections for the U.S. federal government.

U.S. gross general government debts would rise to 129 percent of GDP in 2010, below only Japan (220 percent) and Greece (142 percent), but significantly above Italy (119 percent) and more than 50 percent higher than the euro area average<sup>34</sup>.

Unlike in the case of Germany (and several other EU countries), where the effects of financial rescues have largely been consolidated onto the government balance sheet and are already reflected in reported gross government debt numbers, the lack of such recognition in reported U.S. general government gross debt levels means that no future improvement in reported U.S. government gross debt levels arising from the successful unwinding by the U.S. government of its rescued GSEs is possible.

#### IV Future General Government Consolidation Requirements

Today's exceptional general government gross debt levels will require equally exceptional longer-term fiscal adjustment on both sides of the Atlantic restore debt ratios to what can be considered sustainable levels. Generally a ratio of 60 percent of gross government debt to GDP is considered reasonable, as it provides governments the fiscal space to launch a forceful counter-cyclical fiscal stimulus program in the event of a sudden deep economic downturn without the risk of triggering immediate solvency concerns<sup>35</sup>. In the EU, the 60 percent long-term debt target is of course also enshrined in the European Treaty<sup>36</sup>, where it has following recent euro area decisions taken on a new degree of policy relevance. After having been de facto ignored by the euro area to facilitate the founding euro member status of Italy and Belgium<sup>37</sup>, the March 2011 decision by euro area leaders to introduce an annual numerical benchmark of 1/20 reduction in debt in excess of the reference value 60 percent<sup>38</sup> reintroduces the 60 percent gross debt level as a key long-term policy target in the euro area.

Figure 2 shows first the scope of required fiscal consolidation in the United States and Europe in terms of improvements to the general government cyclically adjusted primary balance (CAPB) to from today's debt levels achieve a 60 percent gross government debt level by 2030. And secondly, the total fiscal

---

<sup>34</sup> Gross debt data for Greece, Italy and the Euro area includes the effects of financial rescue operations conducted here up to end-2010.

<sup>35</sup> As will be discussed further below, very rapid increases in public liabilities related to banking crises and an economic downturn has the potential to make a pre-crisis level of gross government debt of 60 percent of GDP insufficient. See also IMF (2011b) for a discussion of the appropriateness of a long-term gross government debt target of 60 percent of GDP.

<sup>36</sup> Protocol #12 on the Excessive Deficit Procedure, annexed to the Treaty of the European Union. See <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:12008M/PRO/12:EN:HTML>.

<sup>37</sup> The original 60 percent gross debt reference value in the Maastricht Treaty was circumvented from the beginning of EMU through the addition to Article 126 (ex Article 104) in the European Treaty of the clause that debt values above 60 percent of GDP would be excessive "unless the ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace". What would constitute an "insufficiently diminishing ratio at an unsatisfactory pace" has never been established by European leaders.

<sup>38</sup> See Conclusions of the Heads of State and Government of the Euro Area of March 11 2011 at [http://consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/ec/119809.pdf](http://consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/119809.pdf)

consolidation required when taking into consideration also projected ageing related increases in healthcare and pension spending between 2010 and 2030 (requiring offsetting fiscal measures)<sup>39</sup>.

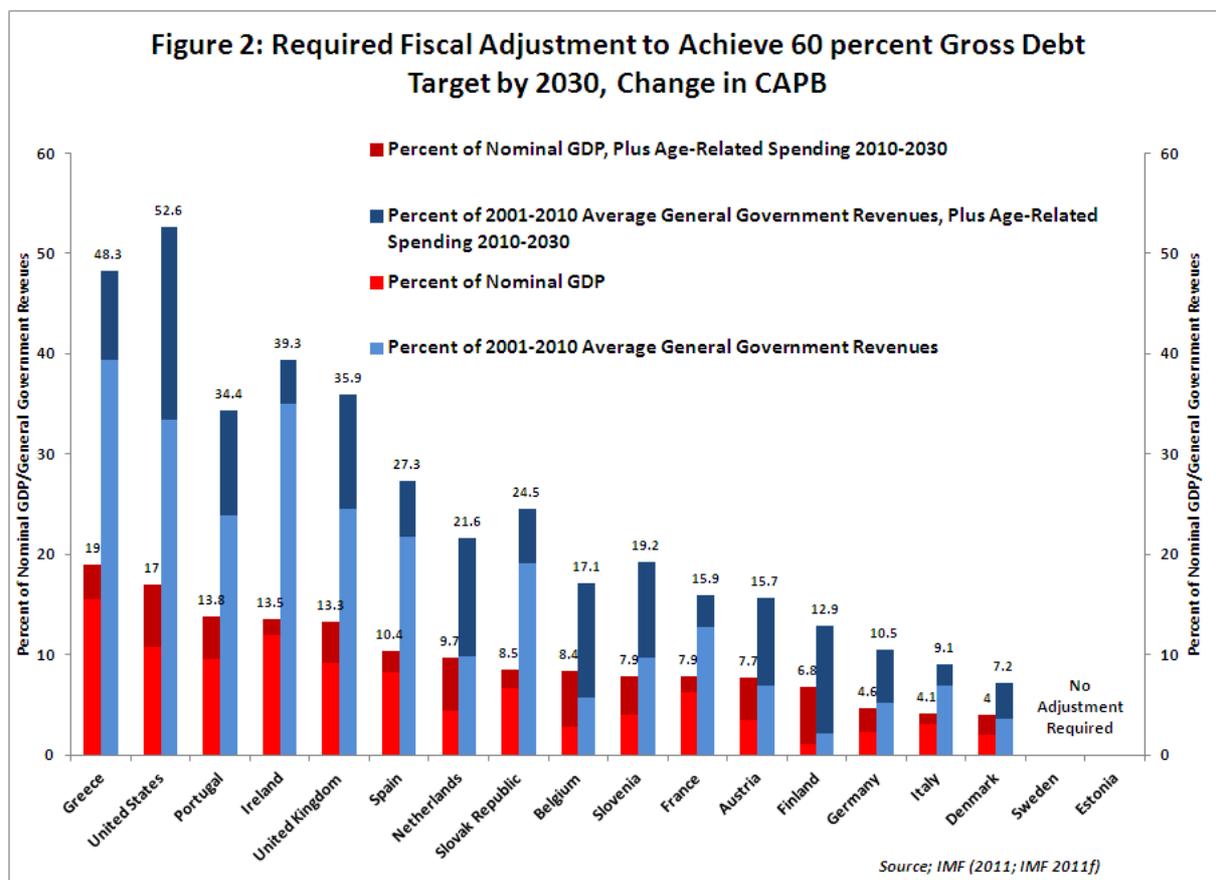


Figure 2 (red bars) shows how the largest required improvement in the general government CAPB to reach a 60 percent gross debt level by 2030, when including also projected rising general government healthcare and pension costs, at 19 percent of nominal GDP is in Greece, surpassing the 17 percent required improvement in the United States and 13-14 percent in Portugal, Ireland and the UK. Required consolidation in Greece and the United States is significantly above required levels in Spain, too, and more than twice the scale of France with a necessary 7.9 percent of nominal GDP improvement in the CAPB. Meanwhile, low required adjustment of noticeably Italy at just over four percent illustrates Rome's existing positive CAPB, and relatively modest projected increases in pension and healthcare expenses<sup>40</sup>. Germany and the Scandinavian countries similarly face relatively modest additional future fiscal consolidation and Swede and Estonia none at all to secure the 60 percent debt target by 2030.

<sup>39</sup> Data from IMF (2011b) relies on a modeled fiscal adjustment strategy, which assumes CAPBs improve in line with April 2011 Fiscal Monitor projections from 2011-12 and gradually from 2013 until 2020, after which it is maintained constant until 2030. Projected healthcare and pension spending increases to be offset is from IMF (2011b) statistical table 9 and appendix 1.

<sup>40</sup> See also IMF (2011c) for a discussion of Italy's relatively benign long-term debt sustainability projections.

With fiscal consolidation on both sides of the Atlantic requiring historic improvements in countries' CAPB and consequently presenting governments with sizable political implementation challenges, it becomes relevant to consider the scope of required future fiscal measures relatively to the existing weight of the government in the economy. The same amount of improvement in the CAPB in terms of GDP may be politically easier to achieve in countries with a relatively larger existing general governmental sector, as it will indicate a relatively smaller required change in the status quo. This is so, even as countries with a small existing general government share of the economy (like the United States) can be said to possess substantial "hypothetical fiscal space"<sup>41</sup> from potential future revenue increases to move the CAPB towards sustainability. However, judging from the ongoing debate in the United States, it is evident that the political obstacles of accessing "hypothetical fiscal space" from legislating future revenue increases can be at least as high (if not higher) as the political obstacles associated with very substantial cuts in government spending in European countries with a large existing general government sector. Ongoing coordinated fiscal austerity in Europe thus suggests – perhaps as a result of the more urgent and severe debt crisis here – that cutting spending in crises to restore fiscal sustainability in "big government countries" is today politically easier than raising revenues in "small government countries" like the United States to achieve the same goal.

To capture the magnitudes of required fiscal consolidation relative to the current size of countries' general government sectors, figure 2 therefore also shows the CAPB consolidation efforts as a share of average general government revenue during the decade from 2001-2010.

Measured as a share of the average 10y general government revenues, the United States at 52.6 percent stands out as having the biggest future political challenge of fiscal consolidation relative to the status quo, due to the relatively smaller government sector here (an average 32 percent of GDP from 2001-2010, compared to for instance 39 percent in Greece or 45 percent in Italy<sup>42</sup>). Greece at 48 percent is almost at U.S. levels, while Ireland, Portugal and United Kingdom face fiscal consolidation efforts above 1/3 of the long-term average size of the general government. Meanwhile, by this metric, the (Western) continental European countries with relatively larger general government sectors face a smaller future fiscal consolidation effort.

## V General Government Assets and Potential Privatization Proceeds

These future consolidation requirements to reduce gross debt levels to sustainable levels are of a truly herculean magnitude and justifiable concerns will arise about the trans-Atlantic political willingness to ultimately restore general government fiscal stability through traditional means of revenue increases and spending cuts. Other government policy initiatives will have to be considered to help restore the health of government finances.

---

<sup>41</sup> Actual "fiscal space" is defined in Heller (2005) as "room in a government's budget that allows it to provide resources for a desired purpose without jeopardizing the sustainability of its financial position or the stability of the economy".

<sup>42</sup> Data from IMF (2011).

As described in Reinhardt and Rogoff (2010) and Kirkegaard, Reinhardt and Sbanica (2011), several other avenues to restoring fiscal sustainability apart from austerity are open to governments. These include sovereign defaults, bursts of unexpected inflation combined with financial repression and rapid growth. Each though has such large drawbacks that their efficacy must be questioned. Attempting to restore fiscal sustainability through a sovereign default is patently mad, as the cure kills the patient, while creating abrupt spikes in inflation and financially repress the private sector will also be both difficult and costly for individual governments in a relatively open and financially integrated global economy. Lastly, the long-term demographic outlook for both the United States and especially Europe will in all probability make rapid economic growth an impossible road to a sizable reduction in the trans-Atlantic debt burden.

Yet, as indicated in section II, there is a large difference between the gross and net debt implications of financial rescue operations in all countries analyzed in this paper, due to the simultaneous transfer of sizable assets to the general government sector. This same difference in overall gross and net debt positions exist for the entire general government sector, as recorded government assets are sizable in several countries. Complete recording and utilizing government assets therefore offers an additional road towards fiscal sustainability, beyond the ongoing (generally) positive revenue return from governments' asset holdings.

As discussed in box 1, significant data concerns surrounds the recording of comprehensive and correctly valued general government assets. Fiscal sustainability analyses on a general government net debt basis are therefore complicated to carry out. Two principal data sources exist for general government net debt information for the United States and Europe; the IMF WEO database<sup>43</sup> and the OECD Economic Outlook Annex Tables<sup>44</sup>. These two sources though are not methodologically similar, as the general government net debt data presented in the IMF's WEO are calculated in a simplified manner as gross debt minus financial assets corresponding to debt instruments. The included financial assets are: monetary gold and SDRs, currency and deposits, debt securities, loans, insurance, pension, and standardized guarantee schemes, and other accounts receivable. IMF net general government debt data does not take non-debt instrument government assets into account<sup>45</sup>, and therefore avoids any uncertainty concerning for instance the estimation of future projected earnings from equity holdings<sup>46</sup>.

OECD "net government debt" data, or more precisely general government net financial liabilities, meanwhile includes data for a wider range of government financial assets, including also general government non-debt assets such as equity participation in private sector companies and holdings in public corporations<sup>47</sup>. OECD net financial liabilities data are estimated as simply general government financial assets minus (all recorded) financial liabilities, making it akin to the general government's "net financial worth". The status and treatment of government prefunded assets and pension liabilities in public employee pension plans are a further very significant source of divergence across countries. The

---

<sup>43</sup> Available at <http://www.imf.org/external/ns/cs.aspx?id=28>.

<sup>44</sup> Available at [http://www.oecd.org/document/61/0,3746,en\\_2649\\_34109\\_2483901\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/61/0,3746,en_2649_34109_2483901_1_1_1_1,00.html).

<sup>45</sup> See See

<http://www.imf.org/external/pubs/ft/weo/2011/01/weodata/weoselser.aspx?c=193%2c158%2c122%2c542%2c124%2c137%2c156%2c181%2c423%2c138%2c935%2c196%2c128%2c142%2c939%2c182%2c172%2c576%2c132%2c936%2c134%2c961%2c174%2c184%2c532%2c144%2c176%2c146%2c178%2c528%2c436%2c112%2c136%2c111&t=34>

<sup>46</sup> This simplification, however, clearly understates the assets of country governments with large listed and non-listed equity holdings outside the general government sector. See also IMF (2011f: Appendix 3).

<sup>47</sup> See [http://www.oecd.org/document/25/0,3746,en\\_2649\\_34109\\_33702745\\_1\\_1\\_1\\_1,00.html#t\\_32](http://www.oecd.org/document/25/0,3746,en_2649_34109_33702745_1_1_1_1,00.html#t_32).

distinction in the 1993 System of National Accounts (SNA) between “autonomous” (outside the general government sector) and “non-autonomous” (inside the general government sector with the funded component reflected in the books) means that some EU countries (like Finland) has its pre-funded pension plans reported as part of the general government and contributing to general government assets, while most countries don’t. This makes cross-country comparability of net government debts problematic.

Figure 3 shows available U.S. and European gross and net debts, as well as debt assets from the IMF WEO database and “other financial assets” from the OECD Outlook Annex tables.

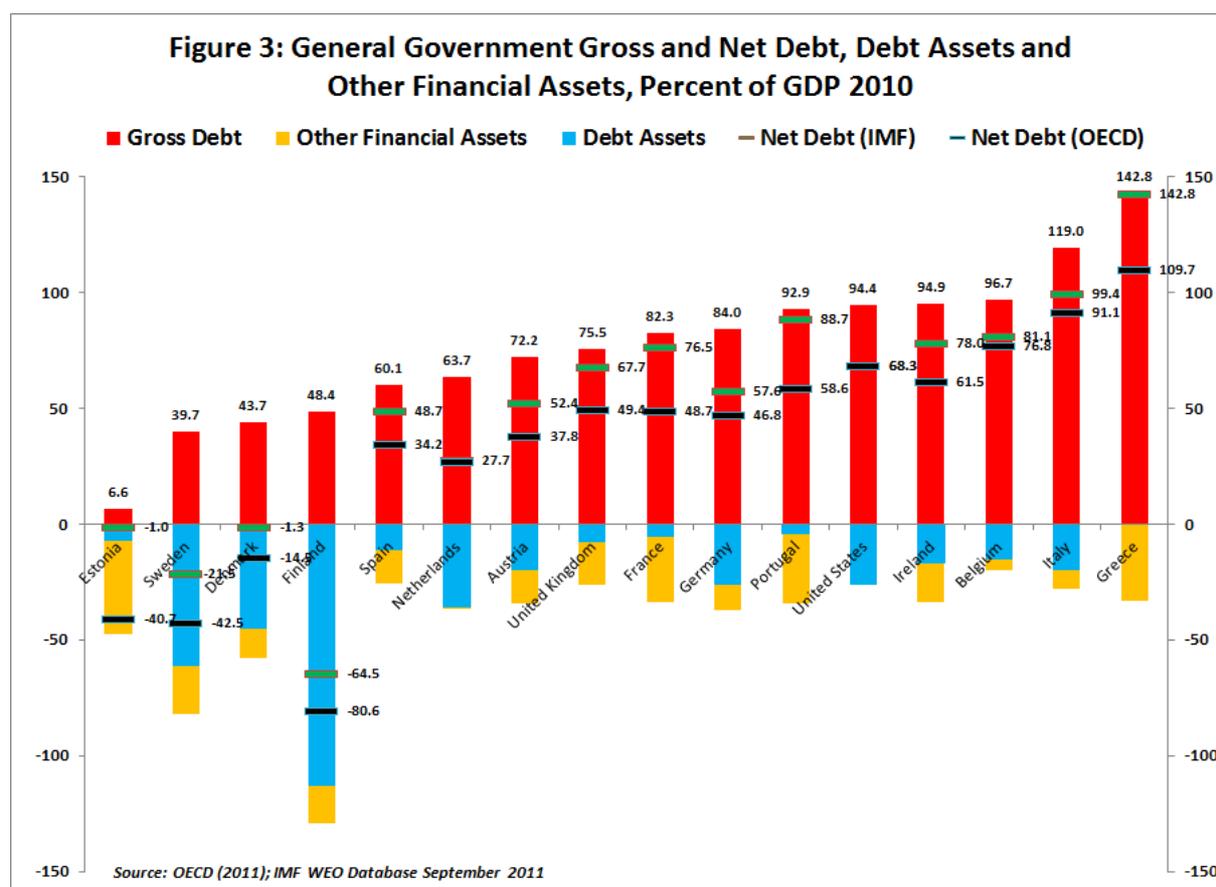


Figure 3 underlines the precarious state of Greece, where in 2010 gross and net debts as recorded by the IMF were similar, with as the only country no debt assets (blue bars) recorded for the Greek general government. OECD data meanwhile suggested that the Greek general government possess about 33 percent of GDP in other types of financial assets<sup>48</sup>.

<sup>48</sup> The lack of Greek general government debt assets is partly an outcome of the country’ pension system, which historically has been a wholly public PAYGO system with no pre-funded or private components. OECD global pension statistics shows no assets in either autonomous nr non-autonomous Greek pension systems. See [www.oecd.org/daf/pensions/gps](http://www.oecd.org/daf/pensions/gps).

At the same time, if one believes the OECD data, Greece actual net general government debt in 2010 was only around 109 percent of GDP. Combined with the fact that parts of the most recent Greek bailout package from July 21<sup>st</sup> 2011 will add further to general government assets, this suggests that the gross debt to GDP ratio projections for Greece overstate the country's solvency problem<sup>49</sup>. Part of the envisioned future gross debt increase for Greece is scheduled to be set aside for zero-coupon AAA-rated assets as collateral for the private sector involvement (PSI)<sup>50</sup>. Up to 10 percent of GDP is furthermore scheduled to be used to recapitalize the Greek banking system, a set of transactions through which assuming the government takes ownership shares in return government assets will also be accumulated.

Figure 3 also shows how general government net debt levels, when estimated with the more inclusive OECD data, are generally lower in Europe than in the United States. Only Greece, Italy and Belgium had net government debts higher than the United States in 2010. Meanwhile, in the Scandinavian countries (incl. Estonia), large general government financial assets surpassed outstanding government gross debts in 2010.

## **Box 2: U.S. Federal Government Debt – Different Holders, Different Impact?**

In June 2011, the total federal government outstanding was \$14.3tr, amounting to 95.8percent of nominal Q2 2011 GDP<sup>51</sup>. As such, the vast majority of general U.S. government debt is evidently issued by the central federal government, while U.S. state and local governments due to their balanced state budget clauses have historically not accumulated much independent debt.

Several important conceptual sub-categories of U.S. federal debt exist<sup>52</sup>:

Debt Held By the Public: Federal debt held by all investors outside of the federal government, including individuals, corporations, state or local governments, the Federal Reserve, and foreign governments.

Debt Held by Government Accounts (Intra-governmental Debt): Federal debt owed to government accounts, primarily to federal trust funds such as Social Security and Medicare. The cumulative surpluses, including interest earnings, of these trust funds and other government accounts have been invested in Treasury securities, almost always nonmarketable. Whenever a government account needs to spend more than it takes in from the public, the Treasury must provide cash to redeem debt held by the government account.

Marketable Treasury Securities: Marketable securities, which consist of Treasury bills, notes, bonds, and TIPS, can be resold by whoever owns them.

<sup>49</sup> See Cline (2011) for an in-depth discussion.

<sup>50</sup> See IIF (2011).

<sup>51</sup> All debt data in this box is from U.S. Treasury (2011). GDP data from BEA at <http://www.bea.gov/national/xls/gdplev.xls>.

<sup>52</sup> Definitions from GAO (2011) at <http://www.gao.gov/special.pubs/longterm/debt/glossary.html>

Nonmarketable Treasury Securities: These are nontransferable securities issued by the government and registered to the owner. While the securities cannot be sold in the financial market, they can be redeemed at any time after they have been held for one year.

Almost all U.S federal debt is issued in marketable securities with only \$427bn (less than 3 percent) outstanding in non-marketable securities at the end of June 2011. The distinction between total outstanding debt, debt held by the public and debt held by government accounts, however, is far larger. Ultimo June 2011, \$9.7tr (65 percent) of total federal debt was held by the public, while \$4.6tr (35 percent) was held by government accounts.

From the definition of debt held by government accounts, it can be seen that this debt would under the IMF/OECD definitions of net government debt would count as “debt assets” for the general government and thus be subtracted from general government gross debt in the estimation of general government net debt. Consequently, debt held by the public is quite close to the definition of general government net debt.

Box table 1 shows the different government account holders of outstanding federal debt end-June 2011. Social Security, federal employees and healthcare insurance funds account for over 80 percent of this category. It is important to note that most of these “government accounts” were trivial in size or did not exist the last time the U.S. federal government had debt levels approaching today’s levels right after World War 2. Consequently at that point in time, there was very little difference between total debt and “debt held by the public”. Once the Social Security and Hospital Insurance Trust Funds cash flows turn negative (Given the labor market crisis in the U.S. since 2008 and temporary payroll tax breaks, this turning point has already been reached) and more federal employees begin retiring, today’s difference will again begin to narrow rapidly.

**Box Table 1: Government Account Holders Of Federal Debt, June 2011,  
\$USbn**

Federal Old-Age and Survivors Insurance Trust Fund (Social Security)	2,498.2	54%
Federal Employees Retirement Funds	696.6	15%
Federal Hospital Insurance Trust Fund (Medicare/Aid)	267.2	6%
Federal Disability Insurance Trust Fund	171.0	4%
Federal Supplementary Medical Insurance Trust Fund	80.4	2%
Employees Life Insurance Fund	39.1	1%
Deposit Insurance Fund	37.2	1%
Exchange Stabilization Fund	22.8	0%
Highway trust Fund	22.1	0%
Unemployment Trust Fund	21.1	0%
National Service Life Insurance Fund	7.8	0%
Airport and Airway Trust Fund	7.6	0%
Federal Savings and Loan Corporation, Resolution Fund	3.4	0%
Federal Housing Administration	2.2	0%
Postal Service Fund	0.6	0%
Railroad Retirement Account	0.5	0%
Treasury Deposit Funds	-	0%
Other	742.7	16%
<b>Total</b>	<b>4,620.4</b>	<b>100%</b>

*Source: US Treasury (2011)*

Which of the different U.S. sub-categories of debt is most relevant from a debt sustainability analysis perspective is a hotly contested issue. On the one hand, it is clear that since U.S. debt held by government accounts is overwhelmingly held by entities created to finance the U.S. social safety net, this debt reflect a future burden on the U.S. economy and the U.S. Treasury. On the other hand, it can be argued that while debt holders outside the government sector enjoy strong legal protections against unilateral actions by the U.S. federal government, this is not true for government account debt holders. Or put in another way, the federal government could legally (though not of course politically) much easier in an emergency default against intra-government entities than against the public.

“Defaults” against intra-governmental holders of debt can come in multiple forms through future changes in laws governing such entities. Ultimately, this indicates the difference between “political promises for the future” and legally protected “government debt commitments”. A cut in retirement benefits for instance amount to a “default” against the “political promises for the future” to retirees, against which they will have no recourse except to try to vote in another government<sup>53</sup>.

<sup>53</sup> Obviously in liberal democracies, interest groups may also try street protests and other non-violent demonstrations to try to put pressure on their government. They strictly need not wait for the next election to push their case.

Yet, the U.S. social safety net and its associated pension and healthcare trust funds is already severely underfunded, when measured against the actual costs of the “political promises for the future” made by U.S. politicians concerning the social services to be provided. Far reaching reforms of especially Medicare/Aid will therefore be required merely to reduce the current scope of future underfunding. What this means is that unless the United States government decides to essentially eliminate the provision of any future social services, it will not be able to avoid the costs of servicing the debt held by government accounts already today, as it is earmarked for this purpose.

Cuts in social “entitlements” of such magnitude are politically implausible, and the costs of the debt held by government accounts thus amounts to a lasting future economic burden for the U.S. Treasury. Since the U.S federal government according to both the IMF and OECD at the same time owns very few other “financial assets” to offset its gross liabilities, valid debt sustainability analyses for the United States should consequently be carried out using the total outstanding debt levels and not merely the data levels for debt held by the public.

Taking any comfort in today’s large, but temporary, difference between total U.S. outstanding debt and debt held by the public is misguided. Government debt held by government accounts, accelerated by recent U.S. payroll tax cuts, will soon largely disappear and almost all U.S. debt will be held by the public again.

#### End Box.

Another source of information about government assets is the value of any equity holdings in listed companies<sup>54</sup>. Selling such holdings to private buyers could immediately raise funds for the general government to potentially reduce gross debt. Table 2 contains a non-exhaustive list of EU government equity holdings in listed companies in 2011.

France	Value €bn	Italy	Value €bn	Germany	Value €bn	Finland	Value €bn	Greece	Value €bn
EDF	66.0	ENEL	17.0	Commerzbank (1)	2.7	Fortum OJ	13.7	Pireaus Bank	0.02
GDF/Suez	32.0	ENI	30.0	Deutsche Telecom	18.8	Sampo	2.6	Hellenic Telecom	1.1
France Telecom	16.0	Finmeccanica	2.2	Deutsche Post	6.9	Nokia	0.1	Public Power Corp.	1.9
ADP	4.0	Terna	3.7			Kone	0.1	Opap	2.3
Safran SA	4.0					Stora-Enso	1.2	Hellenic Petroleum	1.1
Renault SA	3.0					Metso	0.1	Athens Water & Sewage	0.4
THALES	2.0					Neste Oil	2.3	Pireaus Port Authority	0.3
Air France-KLM	0.9					Outokompo	1.1	Thessaloniki Water and Sewage	
Dexia SA (1)	0.5					Rautaruukki	1.3		
Dexia Belgium (1)	1.9					Sponda	0.2		
CNP Assurances	0.1					Finair	N/A		
AREVA-CI	0.1					TeliaSonera	N/A		
EADS	0.01					Others	0.5	Others	0.5
<b>TOTAL</b>	<b>130.4</b>	<b>TOTAL</b>	<b>52.9</b>	<b>TOTAL</b>	<b>28.4</b>	<b>TOTAL</b>	<b>23.2</b>	<b>TOTAL</b>	<b>7.62</b>
Percent of 2010 GDP	6.7%		3.3%		1.1%		12.9%		3.3%
Belgium	Value €bn	Austria	Value €bn	Portugal	Value €bn	Ireland	Value €bn	Addendum: US (TARP)	% of Shares
Dexia Belgium (1)	0.5	Verbund AG	3.9	Energias de Portugal	3.6	Bank of Ireland (1)	1.0	GM	33.3
Belgacom	6.8	OMV	N/A	Galp Energia	1.2	Aer Lingus	0.2	Chrysler	9.2
		Telekom Austria	1.8					Ally Financial	73.8
		Oesteriche Post	1.1					AIG	92.2
<b>TOTAL</b>	<b>7.3</b>	<b>TOTAL</b>	<b>6.8</b>	<b>TOTAL</b>	<b>4.8</b>	<b>TOTAL</b>	<b>1.2</b>		
Percent of 2010 GDP	2.1%		2.4%		2.8%		0.8%		

1) Acquired via emergency capital infusion during crisis. Source: UBS (2011); OECD (2011c) and Bloomberg

<sup>54</sup> Such holdings are included in the OECD but not IMF data for general government net debts.

France is easily the country with most equity holdings in currently listed companies valued at €130bn in early 2011<sup>55</sup>, but also in Italy did such holdings surpass €50bn. Only in Finland did equity holdings surpass 10 percent of GDP (figure 3 similarly showed Finland as a country with large government financial assets), while elsewhere in the euro area holdings were small as a share of the total national economy.

Government assets though need not be held in just currently listed companies. Indeed, the vast amount of public corporations will be unlisted companies, which governments to potentially raise revenue from would have to either list on the stock market or sell outright to a private buyer through a privatization transaction<sup>56</sup>. Figure 4 shows the total government revenue obtained by EU-15 governments from privatizations from 1977-2009<sup>57</sup>. Just like French government today still retains the largest equity holdings (table 2), it is also the EU-15 country which has historically privatized most assets valued in current dollars at over \$200bn, followed by Italy at around \$175bn. Meanwhile measured as a share of 2010 GDP, Portugal has historically been the EU-15's most intensive privatizer at 16 percent of 201 GDP between 1977-2009, followed by Finland at 13 and Greece and Sweden at 10 percent.

Figure 4 illustrates how European countries have in earlier privatization campaigns been able to raise substantial amounts of revenue from divesting previously state-owned assets, even in countries today under IMF programs. Yet, it is equally clear from the fact that Greece historically between 1977-2009 managed to privatize just over \$30bn worth state assets makes the country's commitment to divesting €15bn (\$20bn) by end-2012 and €50bn (\$67bn, ~20 percent of GDP) by end-2015<sup>58</sup> extremely ambitious by the country's historical standards. Less so in a historical context is the Portuguese IMF commitment to privatize for a total of €5bn (~3 percent of GDP) by end-2013<sup>59</sup>, considering Portugal's earlier \$37bn in such revenues. Meanwhile, in Ireland the key privatization issue facing the government is what to do about the roughly €30bn (acquisition cost) of private assets taken over by NAMA since the beginning of the crisis. Historically, Irish governments can be seen in figure 4 not to have raised much revenue of this type, but has set a €7.5bn (5 percent of GDP) NAMA asset sales revenue target by end-2013<sup>60</sup>.

---

<sup>55</sup> Given the recent decline in European stock markets, the valuations listed in table 2 from February 2011 are likely to be higher than today.

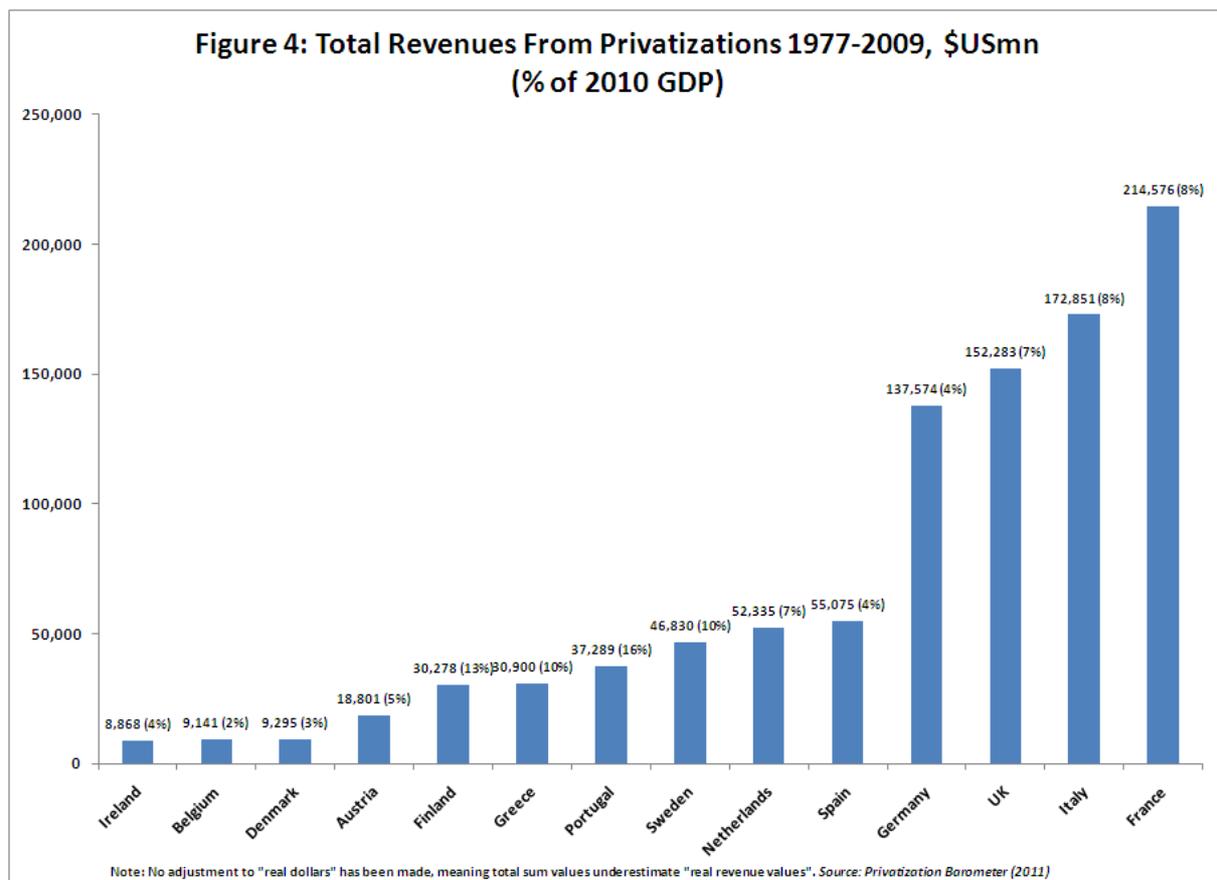
<sup>56</sup> See OECD (2011c) for older survey data breaking out the value of listed and unlisted government equity holdings.

<sup>57</sup> Figure 4 is computed from current dollar transaction values and will hence underestimate the real value of transactions conducted early in the period.

<sup>58</sup> IMF (2011d:20ff). Revenues are scheduled to come from sales of listed companies (€5bn), unlisted companies (€2bn), infrastructure concessions (€9bn) and roughly €35bn from state-owned real estate assets with clear legal title.

<sup>59</sup> IMF (2011e:21)

<sup>60</sup> NAMA (2011).



Rather than be dictated by either acute crisis requirements for cash (fire sales) or a “small government is good government” ideology, decisions to privatize state assets must always be evaluated against the expected value of lost future government revenue. Frequently, in addition to instant new cash revenues, large productivity improvements can be secured through privatizations, as governments can escape the need to continuously subsidize loss-making state-owned enterprises and new private owners are better able to reallocate and restructure such assets<sup>61</sup>. Yet, at the same time governments should be particularly wary of selling off lucrative monopolies in for instance gambling to private investors, both because the public sector thereby risks losing stable and sizable future revenue streams and because private monopolies almost invariably reduces consumer welfare even more than a government one. Particularly during times of acute financial market stress, sudden large-scale privatization initiatives may therefore result in too little new revenue being raised right away to make up for the future loss of control of state assets.

While only in Greece among the current IMF-program countries is traditional privatization revenues (As opposed to divesting distressed NAMA assets taken over by the Irish government during the country’s financial crisis) expected to play a material role in restoring short-term fiscal sustainability, it seems clear that for this to be successful the IMF and EU’s new involvement in the Greek economy must usher in a “political /economic revolution” not dissimilar to the fall of the Berlin Wall in 1989. The demise of communism and state-control of Eastern European economies was accompanied by large-scale privatization campaigns across the region during the 1990s. Only through a similarly decisive break with

<sup>61</sup> See OECD 2011c).

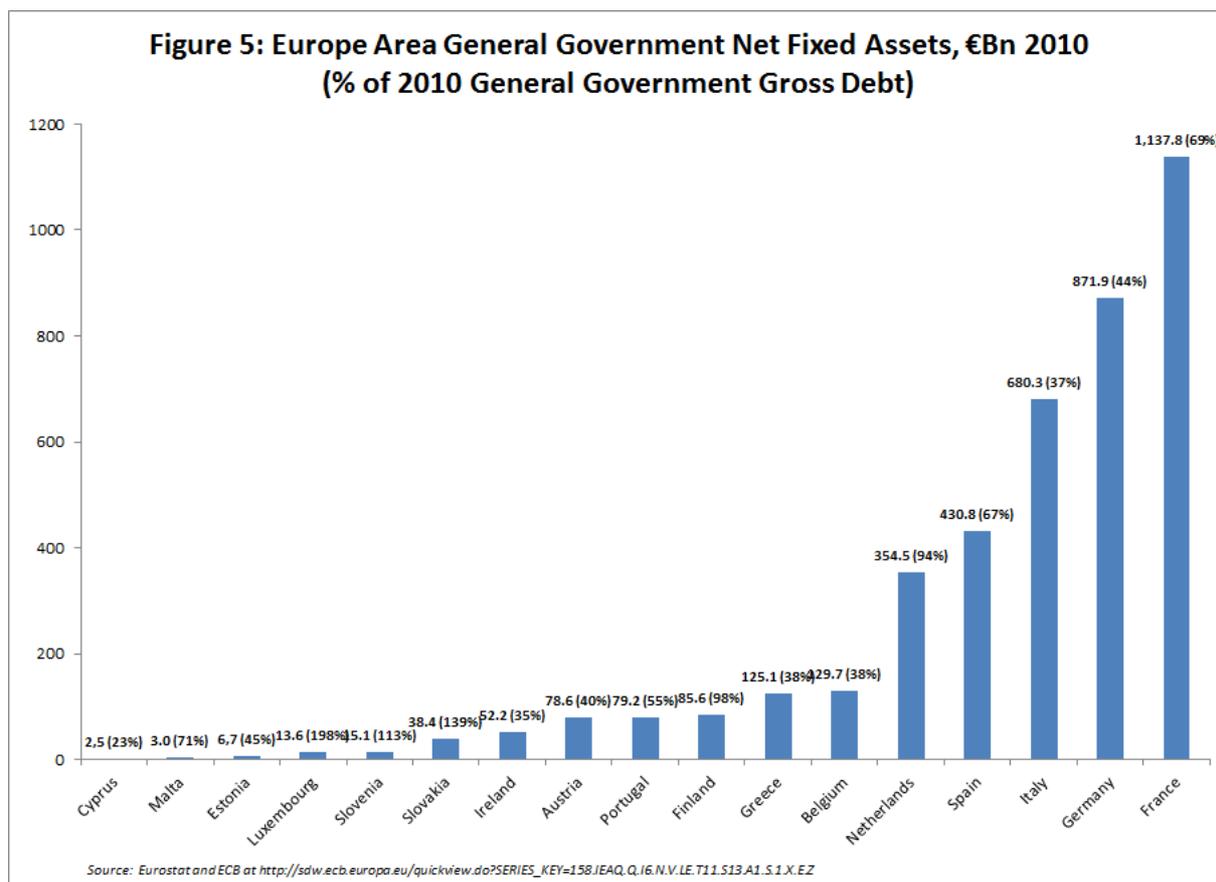
past political resistance to privatizations will Athens be able to create a sufficiently large improvement in its business climate to attract private sector buyers for its assets. The coming years will indicate whether this is politically feasible or if sufficient private risk appetite can be mobilized.

Doom a plenty exists surrounding Greece and much of the rest of the euro area. Yet at the same time, recent elections in both Ireland and Portugal led to strong majority pro-IMF reform governments coming into office in the midst of deep recessions, while in general EU national elections since the beginning of the financial crisis in late 2007 has produced fiscally conservative winning platforms<sup>62</sup>. As such, it cannot be ruled out that the current economic crisis in Europe has led to a lasting shift in public perceptions about the scope of government in the euro zone and consequently that a new wave of privatizations might be unleashed as a result. Partly due to sheer economic and financial necessity, partly enabled by the associated crisis-generated shift in public opinion.

This raises the question whether euro area governments may in the near term be able to begin to better utilize the “forgotten part of their balance sheet”, their real estate and other fixed assets, for new revenue generation purposes? So far this section has focused exclusively on governments’ financial assets, but as discussed in box 1, governments also hold an extensive portfolio of fixed assets, which crisis-induced shifts in public opinion might enable euro area governments to increasingly offload through new privatizations. Unlike for governments’ financial assets, where data availability is merely poor, no reliable estimates of the scope and value of governments’ fixed assets exists. The best approximation is an aggregate number for the entire euro area published regularly by the ECB, which stood at €4.1tr in quarter 4 of 2010. Assuming that the ratio of total fixed assets in the euro area is the same as the available ratio for governments’ annual consumption of fixed capital, this aggregate number can then be broken into approximate estimated national values. This is done in figure 5 for the end-2010 values.

---

<sup>62</sup> The most extraordinary example hereof is Latvia, which has now reelected a government twice which oversaw a 20 percent decline in living standards since 2007. Other noticeable election results is the historic reelection of a center-right government in Sweden in September 2010, or the UK Conservative party’s victory in May 2010 after a campaign of explicit promises of tough future austerity. In the fall of 2011, traditional center-left parties in Europe are part of the government in only Spain, Austria, Slovenia, Greece, Finland (junior coalition member), and non-EU Norway and Iceland.



By virtue of their size, the largest euro area members will of course have the largest holdings of net fixed assets. France again leads the euro area in this government asset measure with over €1.1tr in fixed assets, followed by Germany at €872bn and Italy at €680bn<sup>63</sup>. By this estimation Greece has €125bn in fixed assets, Portugal around €80bn and Ireland just over €50bn. The Greek estimate of €125bn in government fixed assets is considerably lower than an estimate of over 100 percent of GDP in “potentially privatizable assets” in Greece ultimately controlled by the Greek government discussed by IMF staff in the spring of 2011<sup>64</sup>.

However, on top of the methodological uncertainties surrounding the estimated values in figure 5, it must be clear that “total fixed assets” contain far more than any government could plausibly privatize under any circumstance. As discussed in box 1, many government assets are “heritage assets” of important national, educational and historical value which could never be sold off. The values in figure 5 (even if they were correctly estimated) thus represent substantially more fixed assets than could be converted into new revenues even under the best political and economic circumstances.

<sup>63</sup> Incomplete fixed asset data from the OECD’s Detailed National Accounts Database shows comparable general government fixed asset data values to those in figure 5, albeit for the year 2009. Finland reports €87bn, Belgium €126bn, Netherlands €357bn, Germany €1,068bn and France €888bn. See [http://stats.oecd.org/BrandedView.aspx?oeed\\_bv\\_id=na-data-en&doi=data-00024-en](http://stats.oecd.org/BrandedView.aspx?oeed_bv_id=na-data-en&doi=data-00024-en).

<sup>64</sup> See Press Conference with IMF European Division Head Antonio Borges on April 15<sup>th</sup> 2011 at <http://www.imf.org/external/np/tr/2011/tr041511.htm>.

As indicated by the numbers for total fixed assets as a share of 2010 gross government debts, too, it is consequently not realistic to assume that even historically large new privatization drives in the EU-15 will be able to seriously erode gross debt levels in high debt euro area countries. Total fixed asset levels between 35-40 percent in Greece, Italy and Belgium is evidence of the futility of such hopes<sup>65</sup>.

The sudden emergence of new “created fixed assets” on euro area balance sheets, similar to the large auction revenues from the sale of electromagnetic spectrum to telecommunication carriers in the early 2000s, cannot be ruled out in the future. Likewise, governments might find new innovative ways to securitize future revenue streams with investors for immediate cash payments, or engage in leaseback arrangements by selling real estate assets and leasing them immediately back. Substantial longer-term productivity improvements, which almost always emerge from outright privatization transactions, may also be feasible from this type of government fixed asset management operations<sup>66</sup>.

Yet, the magnitudes in figure 5 ultimately suggest that this type of “asset sweating” measures will play at most a peripheral role in returning today’s high-debt countries to more long-term sustainable net debt levels in the future. The asset side of general governments’ balance sheets on both sides of the Atlantic cannot credibly substitute for required new revenue, spending and most importantly growth enhancing structural reforms to address current gross debt levels.

A final straight-forward way to again illustrate the finding above that the asset side of government balance sheets can only play a relatively modest role in the restoring transatlantic fiscal sustainability is to estimate what impact assets could have on the primary surplus required to stabilize different levels of government debt. The general debt sustainability criterion stipulates that the government primary surplus (PS) required to stabilize debt levels is given by  $PS = d(r - g) / (1 + g)$ , where  $d$  = debt/GDP ratio,  $g$  = nominal growth ratio and  $r$  = interest rate on government debt<sup>67</sup>. Usually, such sustainability estimates are estimated based on governments’ gross debt levels, but may also be estimated using net debt levels. Doing so implies assuming that all recorded government assets can be converted into cash and used to service or pay off parts of outstanding gross debt. As was discussed in box 2 for the U.S. this is an implausible assumption, but for the purposes of illustrating the relative scope the impact government assets could potentially have on debt sustainability, this exercise nonetheless has heuristic value. Table 3 shows debt sustainability estimates for selected countries based on general government gross debt levels, IMF net debt levels and OECD net financial liability levels.

---

<sup>65</sup> In the EU under the Stability and Growth Pact rules, privatization proceeds moreover do generally not count towards reducing annual deficits, even if they reduce government total gross debt levels. In accounting terms, large privatization proceeds would consequently only reduce annual deficits through reduced government interest expenses.

<sup>66</sup> See Nicoletti and Scarpetta (2003) and OECD (2011c).

<sup>67</sup> See also Goldstein (2003) and Cline (forthcoming) for a discussion of debt sustainability.

**Table 3: Debt Sustainability Estimates, By Gross and Net Debt Levels**

Country	Germany	France	Italy	Spain	Portugal	Ireland	Greece	Japan	United Kingdom	United States	
1	General Government Gross Debt 2011(p), % of GDP	83%	87%	121%	67%	106%	109%	166%	233%	81%	100%
2	General Government Net Debt 2011(p) (IMF), % of GDP	57%	81%	100%	56%	102%	99%	153%	131%	73%	73%
3	General Government Net Debt 2011(p) (OECD), % of GDP	50%	60%	101%	46%	75%	70%	125%	128%	62%	75%
4	Average Nominal Growth Rate(p) 2011-2016	2.5%	3.6%	2.6%	3.3%	2.0%	3.6%	1.0%	1.2%	5.2%	3.9%
5	General Government Implicit Interest Rate (p) (1)	3.0%	3.5%	4.4%	3.7%	4.7%	4.2%	4.8%	1.2%	4.2%	3.1%
6	Primary Balance Required for Debt Sustainability - Gross Debt	0.4%	-0.1%	2.0%	0.3%	2.8%	0.7%	6.2%	0.0%	-0.8%	-0.8%
7	Primary Balance Required for Debt Sustainability - IMF Net Debt	0.3%	-0.1%	1.7%	0.3%	2.7%	0.6%	5.7%	0.0%	-0.7%	-0.6%
8	Primary Balance Required for Debt Sustainability - OECD Net Debt	0.2%	-0.1%	1.7%	0.2%	2.0%	0.4%	4.7%	0.0%	-0.6%	-0.6%
9	Average Projected Primary Balance (p) 2011-2016 (2)	1.4%	-0.9%	3.5%	-2.2%	1.5%	-1.2%	3.0%	-6.4%	-1.8%	-4.7%
10	Implied required improvement in projected average primary balance 2011-2016 - Gross Debt	-1.0%	0.8%	-1.4%	2.5%	1.3%	1.9%	3.2%	6.4%	1.0%	3.9%
11	Implied required improvement in projected average primary balance 2011-2016 - IMF Net Debt	-1.2%	0.8%	-1.8%	2.4%	1.2%	1.8%	2.8%	6.4%	1.1%	4.2%
12	Implied required improvement in projected average primary balance 2011-2016 - OECD Net Debt	-1.2%	0.8%	-1.8%	2.4%	0.5%	1.6%	1.7%	6.4%	1.2%	4.1%
13	Addendum: Implied maximum interest rate for debt sustainability with average projected primary balances 2011-2016	4.3%	2.6%	5.6%	0.0%	3.5%	2.4%	2.8%	-1.6%	2.8%	-1.0%

(1) Annual interest expense as percent of gross general government debt of preceding year. (2) The five-year 2011-2016 average value covers a period during which very large improvements in the primary balance in several countries are projected. As such, it is inherently an optimistic value, which assumes that governments do as projected in the IMF September 2011 WEO. Values in italics are estimated, while 2011 data are projected. Sources: IMF (2011); OECD (2011); European Commission (2011)

Table 3 shows how in most countries, the primary balance required for debt sustainability is only marginally lower when relying on net debt data instead of higher gross debt levels. Lines 6-8 show how in Germany, the difference is just 0.2 percent of GDP, in Italy 0.3 percent, in Spain 0.3 percent and in the U.K and U.S. 0.2 percent. Meanwhile, only in Portugal and Greece at 0.8 and 1.5 percent respectively in the required primary balance is the difference of a politically and fiscally meaningful size. Relying on net debt levels for Portugal instead of gross levels thus reduces the required improvement in the primary balance from 1.3 percent of GDP (line 10) to 0.5 percent of GDP (line 12), while in Greece the same reduction is from 3.2 percent to 1.7 percent of GDP. In other words, only in countries with low nominal growth and high interest costs does the gross vs. net debt difference make a real difference and government assets have any substantive relevance.

In countries like the United States, Japan, France, Germany and the UK, assuming (impossibly) that all recorded government assets could be used to reduce outstanding gross debt makes just a few decimal points difference in the required primary balances for debt sustainability.

## VI Concluding Remarks

This paper has with a starting point in present day high general government debt levels analyzed the effects of government interventions to support financial markets during the Great Recession and the scope and character of the asset side of general governments' balance sheets. Ireland has seen by far the largest fiscal effects of financial market interventions, while excluding Ireland Germany has seen the highest amount of distressed private financial assets/liabilities transferred to the general government in the EU. Meanwhile through the takeover of Fannie Mae and Freddie Mac, the scope of the U.S. federal government reception of previously private financial assets during the crisis significantly surpasses interventions in Europe (excl. Ireland).

Required future fiscal consolidation efforts on both sides of the Atlantic are of a historic scale. But, this paper's investigation into countries' historical record of generating new revenues from government assets through privatizations and the potential magnitude of new privatization campaigns in the future suggests that the "asset side of governments' balance sheets" can provide only nonessential assistance to this effort. Neither the high-debt general governments of Europe or the United States seem to

possess the assets today to materially reduce their gross indebtedness through asset divestments. In the case of Greece, this could have potentially large effects on its current IMF-led rescue program.

In the end, today's highly indebted governments will not be able to rely on their currently held assets to service their liabilities, but must instead trust their future austerity and structural reform actions and the lower deficits and higher growth these will generate.

**References:**

- Cline, William (Forthcoming). Sustainability of Greek Public Debt. Forthcoming Policy Brief Peterson Institute For International Economics, Washington, D.C.
- Congressional Budget Office (2010) *CBO's Budgetary Treatment of Fannie Mae and Freddie Mac*. CBO, Washington, D.C.
- Congressional Oversight Panel (2011) *The Final Report of the Congressional Oversight Panel, March 16<sup>th</sup> 2011*. COP, Washington, D.C.
- Erste Abwicklungsanstalt (2011) *Erste Abwicklungsanstalt Annual Report 2010*. Erste Abwicklungsanstalt, Dusseldorf
- European Commission (2011). *AMECO Database*, available at [http://ec.europa.eu/economy\\_finance/db\\_indicators/ameco/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/ameco/index_en.htm).
- Eurostat (2009) *Eurostat Guidance Note: The statistical recording of public interventions to support financial institutions and financial markets during the financial crisis*. Eurostat, Brussels
- Eurostat (2011a) *Eurostat Supplementary Table for the Financial Crisis: Background Note April, 2011*. Eurostat, Brussels.
- Eurostat (2011b) *Eurostat Guidance on accounting rules for EDP: Financial defeasance structures Manual on Government Deficit and Debt - Chapter IV.5*. Eurostat, Brussels
- Fannie Mae (2011) *Annual Report 2010*, available at [www.fanniemae.com](http://www.fanniemae.com)
- Freddie Mac (2011) *Annual Report 2010*, Available at [www.freddiemac.com](http://www.freddiemac.com)
- FMS Wertmanagement (2011) *FMS Wertmanagement Annual Report 2010*. FMS Wertmanagement, Berlin.
- Heller, Peter (2005). Back to Basics -- Fiscal Space: What It Is and How to Get It, *Finance and Development*, June 2005, Volume 42, Number 2
- Goldstein, Morris (2003). *Debt Sustainability, Brazil and the IMF*. Peterson Institute For International Economics Working Paper 03-1. Peterson Institute, Washington, D.C.
- IMF (2001) *Government Finance Statistics Manual, 2<sup>ND</sup> Edition*. IMF, Washington, D.C.
- IMF (2009) *World Economic Outlook, April 2009*. IMF, Washington D.C.
- IMF (2011) *World Economic Outlook Database, September 2011*. IMF, Washington, D.C.
- IMF (2011a) *IMF Fiscal Monitor Update June 2011*. IMF, Washington, D.C.
- IMF (2011b) *IMF Fiscal Monitor April 2011*. IMF, Washington, D.C.

IMF (2011c) *Italy – Article IV Review 2011*. IMF, Washington, D.C.

IMF (2011d) *Greece - Fourth Review Under the Stand-By Arrangement and Request for Modification and Waiver of Applicability of Performance Criteria*. IMF, Washington, D.C.

IMF (2011e) *Portugal: First Review Under the Extended Arrangement*. IMF, Washington, D.C.

IMF (2011f) *IMF Fiscal Monitor September 2011*. IMF, Washington, D.C.

Kirkegaard, J., Reinhardt, C. and M. Belen Sbangia (2011) *Financial Repression Redux, Finance & Development*, June 2011, Vol. 48, No. 1

National Asset Management Agency (NAMA) (2011). *Annual Report 2010*. NAMA, Dublin

National Treasury Management Agency (NTMA) (2011) *Information Note on Ireland's Debt*, available at [http://www.ntma.ie/Publications/2011/GG\\_debt\\_NTMA\\_info\\_note.pdf](http://www.ntma.ie/Publications/2011/GG_debt_NTMA_info_note.pdf)

Nicoletti, G. and S. Scarpetta (2003), "Regulation, Productivity and Growth: OECD Evidence", *OECD Economics Department Working Papers*, No. 347, OECD Publishing.  
doi: [10.1787/078677503357](https://doi.org/10.1787/078677503357)

OECD (2009) *Economic Survey of the United Kingdom*. OECD, Paris

OECD (2011) *Economic Outlook Economic Background Annex Tables*. OECD, Paris

OECD (2011a) *Economic Survey of Spain*. OECD, Paris

OECD (2011b) *Economic Survey of Ireland*. OECD, Paris

OECD (2011c), The size and composition of the SOE sector in OECD countries, *OECD Corporate Governance Working Papers, No.5*, [www.oecd.org/daf/corporateaffairs/wp](http://www.oecd.org/daf/corporateaffairs/wp) The Size and Composition of the SOE Sector in OECD Countries.

Privatization Barometer (2011) The PB Report 2010, available at [www.privatizationbarometer.net](http://www.privatizationbarometer.net)

Reinhart, Carmen M., and Kenneth S. Rogoff, 2010, *From Financial Crash to Debt Crisis*, NBER Working Paper 15795 Cambridge, Massachusetts: National Bureau of Economic Research

UBS Investments Research (2011) *European Economic Monitor 20 July 2011: How Can Governments Sweat Their Assets?*, UBS, London

United States Government Accountability Office (2009) *Federally Created Entities: An Overview of Key Attributes*. GAO-10-97. GAO, Washington, D.C.

United States Treasury (2010) *The Troubled Asset Relief Program: Two Year Retrospective*. U.S. Treasury, Washington, D.C.

United States Treasury (2011) *U.S. Treasury Bulletin June 2011*. U.S. Treasury, Washington, D.C.

