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The Return of Sovereign Risk in the Industrialised World

Causes, Consequences and Prospects.

July 2010

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Sovereign Risk

Introduction

The severe deterioration of asset quality in the Western world's banking system in late 2007 marked the opening act of the financial crisis. The second act of the crisis was the eye-watering drop in global economic activity during 2008 and early 2009, marking the start of the Great Recession. Yawning output gaps combined with falling asset prices and shrinking financial sector profits started to take their toll on public finances. Fiscal positions took a further hit when governments decided to embark on the biggest Keynesian experiment in living memory to prevent the repeat of the Great Depression 2.0. The 'Great Rescue' paid off as the world economy has been tiptoeing back from the precipice since mid-2009. But now another danger seems to be lurking on the horizon – a wave of sovereign defaults in the industrialised world. The fear amongst many market participants is that this will mark the third act of this unforgiving crisis.

The fact that policymakers continue to remain divided about the timing of exit from loose fiscal policies only adds to investors' concerns. It seems that we have learnt nothing from the rich history of financial crises. In one camp, policymakers claim that exiting now is necessary to calm market nerves lest interest rates will jump and turn the already bad situation into something far uglier. In the other camp, however, the opponents argue that synchronous exit of governments will do nothing more than strangle the incipient recovery at birth, which may weaken public finances even more.

The division between the two camps stems largely from their assumption of private sector recovery going forward. The 'exit now' camp expects households and firms to step in as the government leaves the stage while the 'exit later' camp believes that such assumption is grossly optimistic. Only time will tell which camp is right. But one thing is for sure, governments are navigating in uncharted waters. Relying too much on private sector strength can ultimately turn into an economic disaster if it proves to be incorrect (much higher unemployment and a paralysed banking system) while remaining complacent might push many sovereigns towards the brink of bankruptcy.

Given the amount of uncertainties surrounding both views, we decided to identify the industrialised countries that are most vulnerable to a sovereign debt crisis. In doing so, we look at a number of early warning indicators that have performed reasonably well in the past in predicting impending liquidity and solvency crises. Based on our Sovereign Vulnerability Index (SVI), Italy is the most vulnerable to a debt crisis after Greece mainly because of its strong reliance on foreign investors, relatively high level of corruption and high interest payments. The next countries in line are Portugal, Japan and the US. At the opposite end of the spectrum, the Scandinavian and current account surplus countries seem to be the least vulnerable.

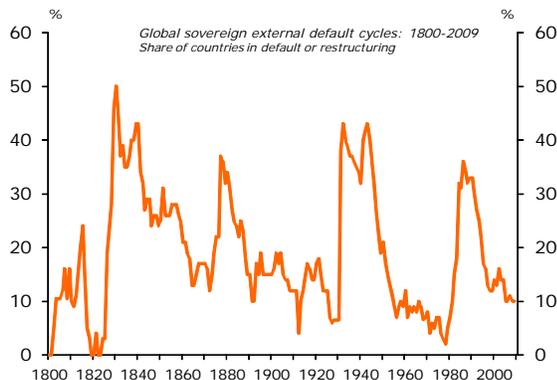
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Know your history

If anyone would speak about sovereign risk in the industrialised world a few years ago, their economic understanding, and even possibly their sanity, would be questioned by all market participants. Sovereign debt crisis was a thing of the past, or so the argument went. And if it did occur, it would most probably be in a 'third world' country. The simple reason was that industrialised countries seemed to have 'graduated' from periodic bouts of government insolvency given that they did not opt for a default since the end of WWII. The last sovereign defaults recorded were Japan (1942), Austria (1940) and Germany (1939). The fact that the entire history of sovereign default, which goes back at least to the fourth century B.C. when 10 out of 13 Greek municipalities in the Attic Maritime Association defaulted on loans to the Delos Temple, was deemed irrelevant is simply shocking (Winkler, 1933). Even the defaults-cum-debt restructurings in the modern era, beginning with defaults in France, Spain, and Portugal in the mid 16th century, were brushed under the carpet. Most troubling was that the explosion of debt crises in the 19th century both in terms of numbers and geographical incidence were overlooked (see figure 1). Spain, for example, managed to default 13 times in the past two centuries – making it the defaulting champion of the world in the period 1800-2009 (see figure 2). No one in the financial markets seemed to bother why these defaults have taken place in such a concentrated time span.

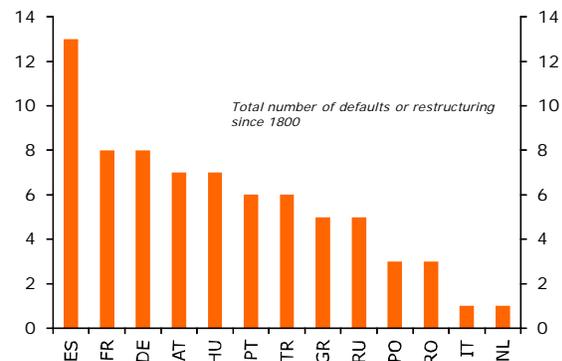
But then the rapid deterioration of public finances in the advanced economies in the aftermath of the recent financial crisis changed everything. Government debt in most countries started spiralling out of control as budget deficits widened to levels not seen during peacetime (see figure 3). The IMF (2010b) recently forecasted that average debt to GDP ratios (hereafter debt ratios) in these countries will rise further from 91% at end-2009 to around 110% in 2015, bringing the increase from pre-crisis levels to almost 40%-points. Not to mention that the acknowledgement of the financial markets in November 2009

Figure 1: Default history in the world



Source: Reinhart and Rogoff (2010b)

Figure 2: Default history in Europe

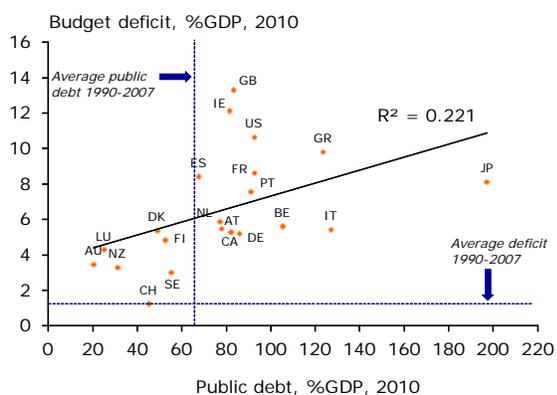


Source: Reinhart and Rogoff (2009)

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that the Greek government had 'cooked the books' only added insult to the injury. Investors were told that the average budget deficit of Greece from 2000 to 2008 was not 2.9% of GDP but 5.1% (Pisani-Ferry et al., 2010). The

Figure 3: Deteriorating public finances



Source: OECD

announcement of authorities in Dubai, around the same time, that they wish to postpone the repayment of their bonds, further concentrated investors' minds. All of a sudden, bond vigilantes woke up to the fact that all this time they were suffering from what Reinhart and Rogoff (2010b) call the '*this-time-is-different*' syndrome – the belief that financial crises are something that happen to other (emerging) countries at other times because the industrialised countries have the right policies, have learned from their past mistakes, and are built on sound fundamentals. They now realise that public debt of the industrialised countries is not as safe and 'special' as some cheerleaders had been arguing. So now almost

everyone is wondering whether the global economy is entering into the third act of this crisis – sovereign default in the industrialised world. A prospect that was simply unimaginable a few years ago.

What caused sovereign risk to rise?

Before one begins to solve a problem, the cause of it must be understood. Therefore, it is very important for policymakers to appreciate why most OECD countries find themselves all of a sudden in such fiscal mess. The most frequent answer provided, regrettably, is budgetary indiscipline. The belief of the European Commission – and even many respected economists (see Mayer, 2010; Burda and Gerlach, 2010; Fatas and Mihov, 2010) – is that better fiscal discipline alongside a Stability and Growth Pact (SGP) with 'teeth' (i.e. tougher sanctions), would have at least avoided the current mayhem in the eurozone periphery. Alas, this description is not entirely accurate. We do not deny that the public finances of Greece, Italy and Portugal were far weaker even before the inception of the crisis amid public sector profligacy. These three countries had amassed large deficits during 2000-2007 and were champions in violating the SGP (see figure 4). Mind you that the last time Greece's deficit was below 3% was in 1980! But Spain and Ireland, on the other hand, were the poster children for responsible fiscal policy before the crisis (Persaud, 2010). Both countries continuously posted large budget surpluses in the years leading to the crisis and their debt ratios in 2007 were one of the smallest in the EMU (Ireland: 28% of GDP; Spain: 42% of GDP). Even better, they were among the few to respect the Stability and Growth Pact (SGP) rules while it was broken 4 times by the 'austere' Germans. Not only did they respect the letter of the law, they

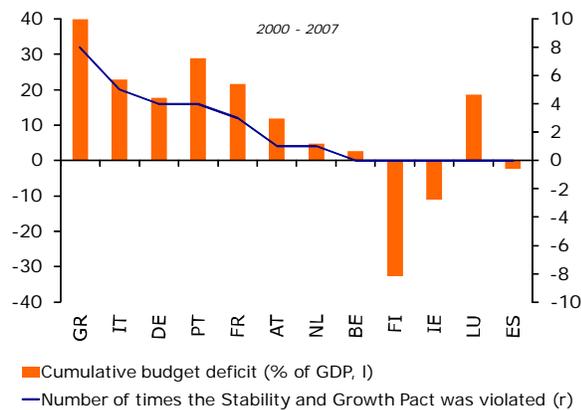
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respected the spirit by running surpluses during the 'good times' in preparation for deficits in bad times. So budgetary indiscipline is not *the* reason.

Some other commentators believe the *direct* support measures for the banking sector in the midst of the financial crisis worsened public finances significantly. From the history of financial crises we know that public debt soars in the aftermath of financial crisis. Reinhart and Rogoff (2009) find that government debt increases by 86% on average in the aftermath of major post-WWII banking crises (within 3 years). Figure 5, shows that, if the predictions of the OECD are correct, public debt levels by 2011 will have risen much more in Iceland (210%), Luxembourg (200%), Ireland (180%), and the UK (105%). What's more, the average rise in public debt levels by 2011 will come very close (78%) to the historical average shown by Reinhart and Rogoff.

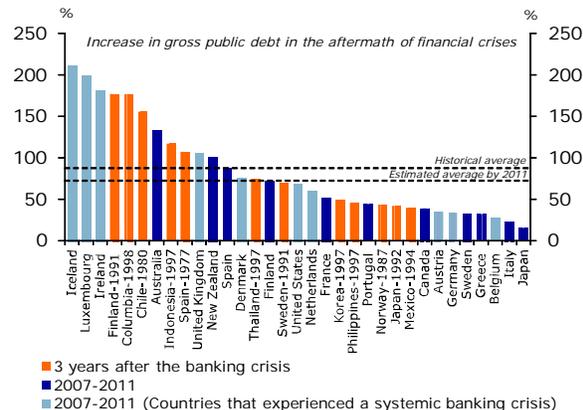
But the much ballyhooed direct fiscal costs of financial crises in terms of guarantees, liquidity support, asset purchases, and recapitalisations are mostly a relatively minor contributor to post-financial crisis debt burdens (Reinhart and Rogoff, 2009). Looking at the experiences of countries in the current crisis, we can see that there are indeed considerable differences in terms of the size of the financial support programmes among countries (see table 1). These differences reflect the relative size of the countries' banking sectors (the UK, Ireland), their exposure to 'toxic' assets originating in the US subprime mortgage market (the UK, Germany), the exposure to a collapse of local real estate markets (the US, the UK, Ireland, Spain, Denmark) and the exposure to emerging economies in Central and Eastern Europe (Sweden, Finland, Austria, Greece, Belgium, Netherlands). Yet the effective expenditures have remained well below pledged amounts. As of end-December 2009, total gross direct support amounted to 3.5% of GDP in the advanced G20 economies, according to the IMF (2010b). With a slightly different sample pool, Lavaen and Valencia (2010) calculate that

Figure 4: Public sectors' past performance



Source: Baldwin and Gros (2010)

Figure 5: The aftermath of financial crisis



Source: Rabobank, Reinhart and Rogoff (2009), OECD

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the gross and net fiscal outlays in the current banking crisis amount to 5.9% and 3.6% of GDP, respectively (see figures 6 and 7), which is still a far cry from the average 25% of GDP increase in public debt in the same period or the average fiscal cost of banking crises in the past (see table A1 in appendix 1). Even Van den Noord (2010) estimates that in an adverse scenario, the direct costs of the banking crisis could rise to 13% of GDP for the EMU countries – far below the rise in overall debt ratios.

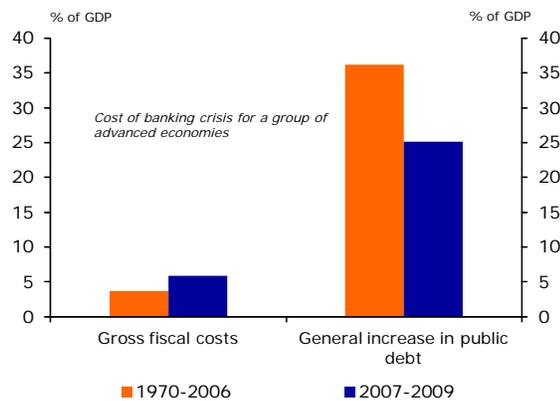
Table 1: Public interventions in the banking sector (% of GDP)

Countries	Relief of impaired asset and bank support		Capital injections		Guarantees on bank liabilities		Guarantees on deposits
	Total approved measures	Effective interventions	Total approved measures	Effective capital injections	Total approved measures	Guarantees granted	in dollars or %
BE	8.1	8.1	5.3	6.1	70.8	16.3	100000
DK	0.3	0.3	6.1	2.4	253	2.5	100%
DE	1.4	1.4	4.4	2	18.6	7.2	100%
IE	0	0	6.6	6.5	164.7	164.7	100000
GR	3.3	1.8	2	1.5	6.1	1.2	100000
ES	2.8	1.8	0	0	18.6	2.1	100000
FR	0.2	0.2	1.2	1.2	16.6	5.5	70000
IT	0	0	1.3	0.1	NA	0	103000
LU	0.9	0.9	6.9	7.9	12.4	NR	10000
NL	11.4	5.5	6.4	6.8	34.3	7.7	100000
AT	7.1	2	5.5	1.7	25.7	6.8	100%
PT	0	0	2.4	0	10	3.3	100000
FI	0	0	0	0	27.7	0	50000
SE	12.6	0	1.6	0.2	48.5	11	50000
GB	16.4	14.7	3.5	2.6	21.7	11.3	50000

Source: European Commission

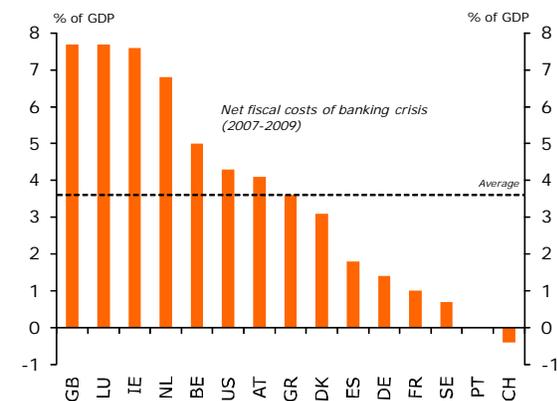
The third erroneous belief is that public finances deteriorated on the back of ambitious countercyclical fiscal policies, which were aimed at mitigating the downturn. Figure 8 shows that fiscal stimulus programmes in 2009-2010 were

Figure 6: Direct gross fiscal costs of banking crisis



Source: Lavaen and Valencia (2010)

Figure 7: Direct net fiscal costs of banking crisis

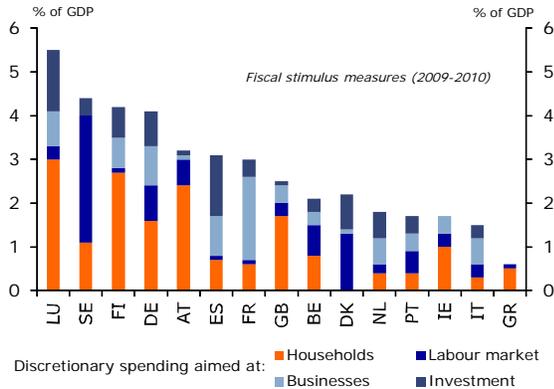


Source: Lavaen and Valencia (2010)

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too small to matter as they ranged from 0.6% of GDP in Greece to 5.6% in Luxembourg. Even these numbers overstate the 'true' costs to government finances since fiscal multipliers are estimated to be in positive territory for all the taken measures (see table 2) – meaning that debt ratios rose by an even smaller amount.

Figure 8: Stimulus packages are relatively small



Source: European Commission

So what accounted for the surge in debt ratios? Indeed, the big drivers of debt increases are the inevitable collapse in tax revenues that governments suffer in the wake of deep and prolonged output contractions (see figure 9). As a rule-of-thumb, Girouard and Andre (2005) estimate the sensitivity of government net lending to a 1%-point change in the output gap to be around 0.5% of GDP on average for OECD economies. The countries that experienced falling asset prices (see figure 10) and/or shrinking financial sector profits were hit even harder.

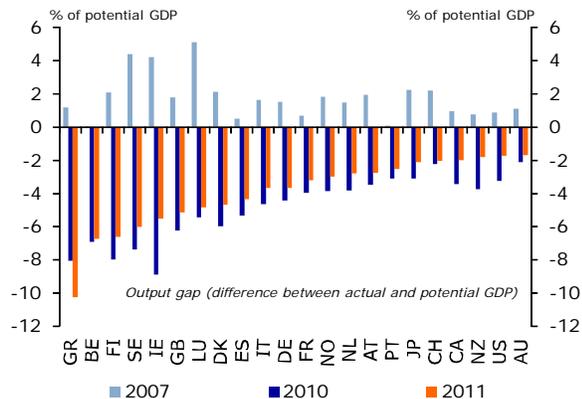
Table 2: Fiscal multipliers

	EMU		USA		UK		Japan		Average	
	High	Low	High	Low	High	Low	High	Low	High	Low
Spending										
Consumption	0.9	0.6	1.1	0.8	0.9	0.6	1.1	0.8	1	0.7
Investment	1.2	1	1.3	1.1	1.2	1	1.3	1.1	1.25	1.05
Transfers	0.7	0.6	0.9	0.8	0.8	0.6	0.9	0.8	0.825	0.7
Taxes										
Income	0.7	0.3	0.9	0.5	0.8	0.4	0.9	0.5	0.825	0.425
Indirect	0.4	0.2	0.5	0.3	0.4	0.2	0.5	0.3	0.45	0.25

Source: OECD

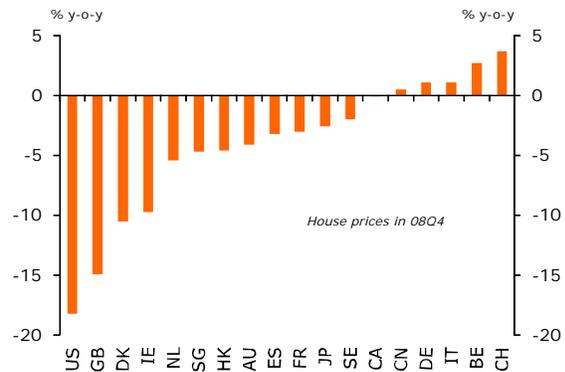
Note: High estimates are based on survey results from various macro models adjusted only for openness. Low estimates are further judgementally adjusted for the effect of the current conjuncture.

Figure 9: Output gaps



Source: OECD

Figure 10: Falling house prices



Source: The Economist

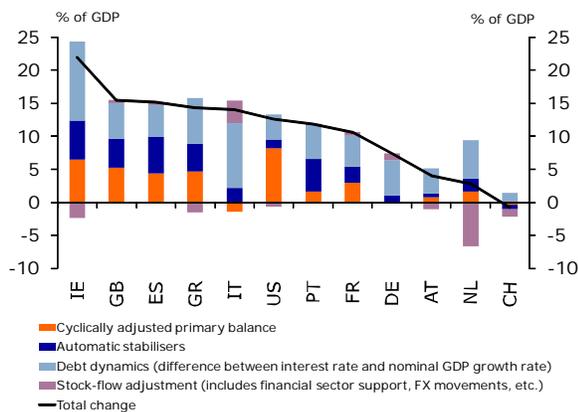
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To see this, we have calculated the determinants of debt ratios in a number of industrialised countries for 2009 and 2010 (see figures 11 and 12). Keep in mind, the change in debt ratio is dependent on the government's cyclically adjusted primary balance (CAPB), the automatic stabilisers (i.e. difference between the primary deficit and CAPB), the long-term interest rate-growth differential (also known as debt dynamics or the snowball effect), and the stock-flow adjustment (this serves as a proxy for financial sector support, FX movements and other statistical adjustments).

Looking at the drivers of change in government debt in 2009 and 2010, it becomes clear that the CAPB was only a big contributor in countries that had a bloated financial sector together with a housing bubble (Ireland, Spain, the UK and the US). Moreover, the SF component, which is a proxy for bank bailout costs, was hardly important in explaining the increase in debt ratios (it was in 2008 though). What mattered most instead were the contributions of the automatic stabilisers and adverse debt dynamics. These two components together account for the bulk of the debt increase in the advanced economies.

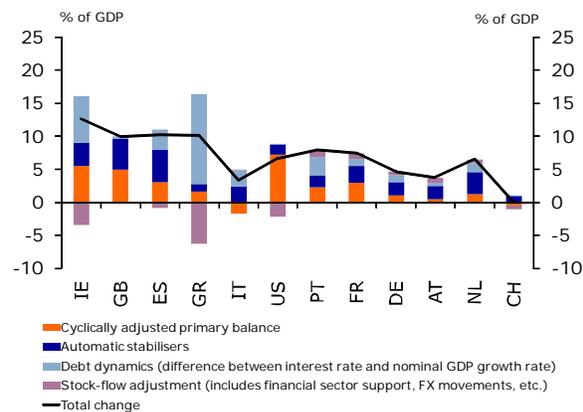
But then the question becomes, why did the governments allow their debt levels to spiral out of control? After all, they could tighten spending in line with collapsing revenues. The reason why they chose not to do so can be well understood if one looks at the sectoral financial balances of the OECD countries before and after the crisis (see figure 13 and 14). Note that the balance between income and expenditure in the private, public and foreign sectors must *always* sum to zero by definition. In figure 13, we can see that the private and public sectors of many OECD countries were living way beyond their means for the most part of the last decade (total expenditure in the period 2000-08 exceeded total income by 83%, 82%, 56% and 44% of GDP in Portugal, Greece, Spain, and the US, respectively). This 'extravagant' lifestyle was sponsored by net

Figure 11: Drivers of change in public debt (2009)



Source: Rabobank, OECD

Figure 12: Drivers of change in public debt (2010)



Source: Rabobank, OECD

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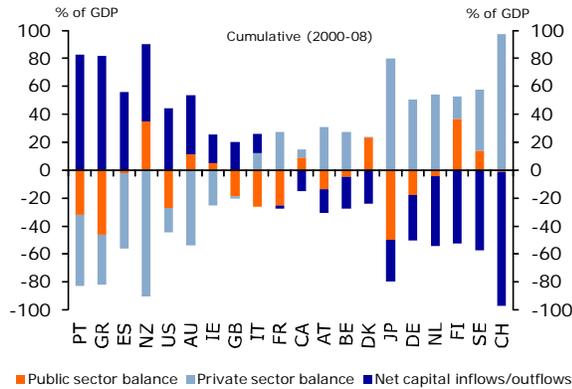
savers (e.g. Switzerland, Sweden, Finland, the Netherlands, Germany and Japan), which were willing to export huge amounts of capital to these countries in the go-go years. The result was a rapid accumulation of external debt in the

current account deficit countries in a very short period (see figure 15). Actually, most of the debt was accumulated by the private sector whereas public sector debt has hardly grown in the past decade with the exception of Japan (see figure 16).

This feast was soon over once the financial crisis made landfall. Falling asset prices, incomes and credit availability combined with a surge in jobless rates led to extreme private sector frugality. All countries in our sample, with the mere exception of Portugal and New Zealand, started running private sector surpluses in 2009-10. Given the negative feedback loop between private sector saving

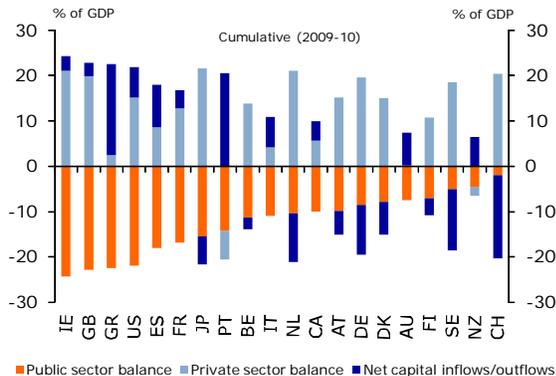
and economic activity, governments had to step-in to stave-off a depression-like scenario (see figure 14). The releveraging of the public sector was all the more necessary amid the slow adjustment of the external balance. Besides, the weak macroeconomic backdrop in the industrialised world meant that countries could not rely on export-led growth. In essence, governments judged that the expansion of their own debt (i.e. Keynesian policy) was necessary to save the private sector. In the words of Persaud (2010): *"once the crash arrived and the private sector had to be bailed out, private sins became public problems"*.

Figure 13: Sectoral financial balances (i)



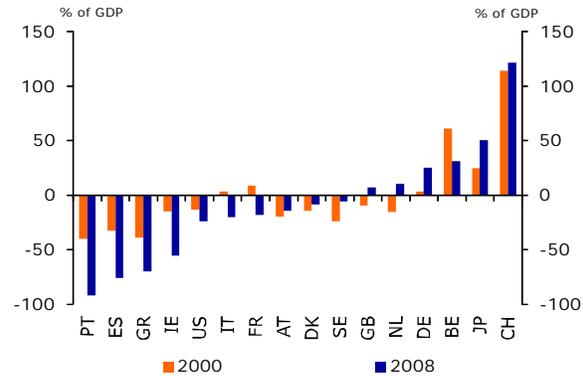
Source: Rabobank, OECD

Figure 14: Sectoral financial balances (i)



Source: Rabobank, OECD

Figure 15: Net international investment positions



Source: Buiter (2010)

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What are the consequences?

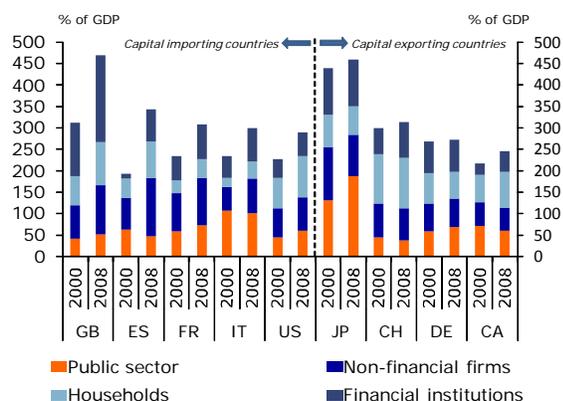
The interconnectedness of public and private debt is, therefore, of utmost importance for formulating an exit strategy. Unfortunately, economists are divided when it comes to the strength of the private sector going forward. Those

in the 'exit now' camp¹ (also known as deficit hawks) preach to other countries that austerity is the only solution to our troubles.

The argument is that once governments step out, interest rates remain in check and the private sector will automatically step in to fill in the spending gap (i.e. they will be crowded-in). Problem solved! But in the 'exit later' camp² (also known as Keynesians), there is widespread fear that fiscal thrift will do nothing more than choke the recovery and, in the worst case scenario, doom the world to a 'lost decade' à la Japan. The simple reason is that the private sector is believed to be too weak to stand on its own feet now. Given the profound divisions amongst the two camps we

will look closely at the different arguments presented.

Figure 16: Sectoral composition of gross debt



Source: Mckinsey Global Institute (2010)

Deficit hawks' argument #1 – risk of higher interest rates

The economists in the 'exit now' camp believe that governments should just start reducing their deficits because sovereign debt crisis is around the corner. In their view, governments cannot afford to be lulled into complacency given the spectacular rise in bond yields of the European periphery in the past year. This must serve as a wake-up call for all fiscal policymakers. Even though borrowing rates have steadily fallen recently in the major industrialised countries amid subdued price pressures and return of risk aversion (see figure 17) – 'safe-haven' flows – the exit of central banks from ultra accommodative monetary policies in the coming quarters combined with worsening public finances may result in higher borrowing costs in the near future (i.e. 'tail risks' should not be ignored). This is in line with the historical evidence. The IMF (2010a) reckons that a 10%-point increase in the debt ratio raises long-term government interest rates by 50bps. This implies that the 40%-point increase in government debt

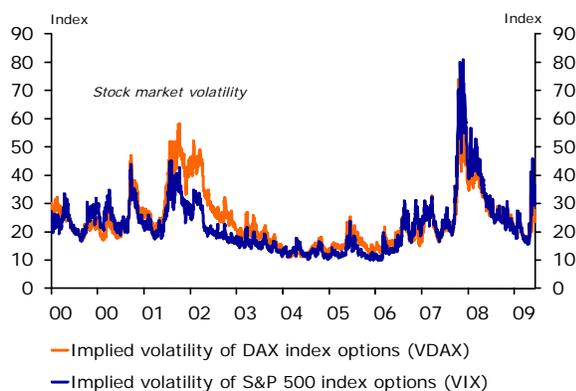
¹ The group of economists in this camp include the likes of Jeffrey Sachs (Harvard university), Ken Rogoff (Harvard university), Thomas Sargent (New York university), Niall Ferguson (Harvard university), Dominique Strauss-Kahn (head of the IMF), Raghuram Rajan (University of Chicago) and the economists of the OECD, European Commission and the ECB.

² The group of economists in this camp include the likes of Paul Krugman (Princeton university), Dani Rodrik (Harvard university), Brad DeLong (University of Berkeley), Joseph Stiglitz (Columbia university), Alan Blinder (former board member of the Fed), Martin Wolf (chief economist of the Financial Times), Robert Skidelsky (University of Warwick), David Blanchflower (former board member of the Bank of England), Paul De Grauwe (University of Leuven), Robert Solow (Massachusetts Institute of Technology) and Nouriel Roubini (New York university).

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ratios projected for advanced economies during 2008–14 could raise interest rates by almost 2%-points. The effects are thought to be even larger for countries that start with higher debt ratios or deficit levels, or that confront

Figure 17: Rising uncertainty in the markets



Source: Bloomberg

faster ageing population (European Commission, 2010). Table 3 shows a summary of other studies that estimate the effect of debt/deficit increase on interest rates. The conclusion is clear: deteriorating fiscal positions push interest rates upwards.

Any lack of resolve to restore order to the public finances, therefore, can lead to an unwanted spike in interest rates (i.e. makes debt more expensive to service over the long run). This will, in turn, hurt the private sector because higher government bond yields – serving as a ‘risk-free’ benchmark – will usually feed through to the entire economy.

The result is an offsetting fall in the stock of private capital. The crowding-out effect not only lowers the level of output but since new capital is invariably more productive than old capital, a reduced rate of capital accumulation can also lead to a persistent slowdown in the rate of GDP growth (Cecchetti et al., 2010).

Table 3: Estimated impact of fiscal variables on interest rates

Studies	Countries	Fiscal variables	Estimate effects on long-term interest rates
Thomas and Wu (2009)	US	A 1%-point increase in projected fiscal deficit (in 5 years)	30-60 bps
Bernoth et al (2006)	14 EU	A debt service ratio 5% above Germany's	32 bps
Dai and Philippon (2005)	US	A 1%-point increase in fiscal deficit lasting 3 years	20-60 bps
Ardagna et al (2009)	16 OECD	A 1%-point deterioration in primary balance	10 bps
Laubach (2009)	US	A 1%-point increase in projected fiscal deficit	25 bps
Gale and Orzag (2003)	US	A 1%-point increase in projected fiscal deficit	40-50 bps
Gale and Orzag (2002)	US	A 1%-point increase in projected fiscal deficit	50-100 bps
Canzeroni, Cumby and Diba (2002)	US	A 1%-point deterioration in fiscal balance (projected 5-10 years ahead)	41-60 bps
Linde (2001)	Sweden	A 1% deterioration in fiscal balance	25 bps after 2 years
Reinhart and Sack (2000)	19 OECD	A 1% deterioration in fiscal balance (in current and next years)	9 bps
Orr, Edey and Kennedy (1995)	17 OECD	A 1% deterioration in fiscal balance	15 bps
Chinn and Frankel (2005)	5 OECD	A 1%-point increase in net public debt ratio (projected 2 years ahead)	10-16 bps
Engen and Hubbard (2004)	US	A 1%-point increase in debt ratio	3 bps
Laubach (2009)	US	A 1%-point increase in projected debt ratio	4 bps
Chinn and Frankel (2003)	7 OECD	A 1%-point increase in net public debt ratio (projected 2 years ahead)	3-32 bps
Conway and Orr (2002)	7 OECD	A 1%-point increase in net public debt	1.5 bps (when net debt>100%)
O'Donovan, Orr and Rae (1996)	7 OECD	A 1%-point increase in net public debt	2 bps (when net debt>100%)
Ford and Laxton (1995)	World	A 1%-point increase in world net public debt	15-27 bps

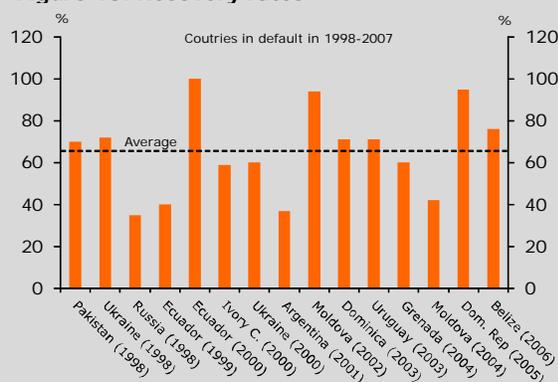
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In an even more pessimistic scenario, liquidity can suddenly dry up, which forces fiscal policymakers to *throw in the towel* if nervous bond markets really start doubting the government's repayment capability. So no matter how solid a country's macro fundamentals are or how determined the government is in repaying its debt, confidence may vanish in a puff of smoke (i.e. investors rush for the exit *en masse*) when markets are jittery (see box 1). Mind you that governments cannot sell all their assets overnight nor can they immediately raise tax revenues (think of the lengthy legislation required to pass a single bill) so a debt crisis will be unavoidable.

Box 1: Why wouldn't investors roll-over public debt?

Some commentators are not quite convinced why lenders should leave while it is in their collective interest to roll-over short-term debt given the costs involved. History shows that investors seldom get fully repaid when sovereigns default (see figure 18), and then there is the time value of money because defaults are lengthy processes. Argentina has still not fully repaid all its creditors even though it defaulted in 2001. So to misquote Keynes: If a government owes investors USD 1mln, the government has a problem; if it owes them USD 100bn, the investors have a problem.

Figure 18: Recovery rates



Source: Asonuma (2009)

So why do investors rush to the exit at all? The reason why this happens is owing to the fact that governments, like banks, generally borrow from a relatively large number of financial market participants who cannot coordinate their lending decisions among themselves (this is the well-known **creditor coordination-based** problem). Any increase in uncertainty over the lending behaviour of other lenders, therefore, can result in the existence of what economists call *multiple (Nash) equilibria* – where the outcome is driven by the market participants' expectations (or higher order beliefs³) regardless of

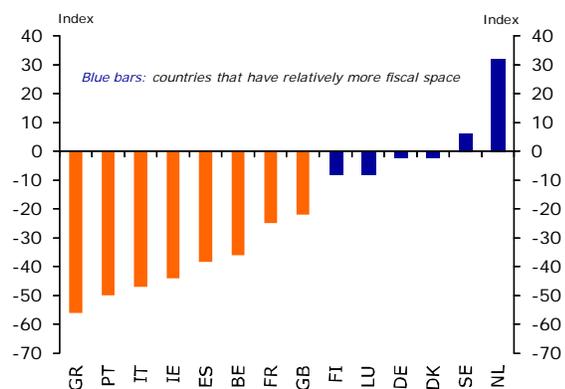
³ Keynes' beauty contest analogy: the private information of is less important than their evaluation of other speculators' expectations.

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government's actions. Simply put, as long as the individual lender expects other lenders to continue their financing of the government at low risk premia, he/she will also provide financing anticipating that the government will be able to

redeem the old credit by taking up new credit. However, if investors' expectations suddenly switch – for example due to a shock to one of the variables entering the debt sustainability assessment (think of lying about official statistics) – agents might decide to not roll-over the government's debt. As Keynes noted long ago, in the game of musical chairs, no one wants to be the last one left standing. Thus, the investor's *animal spirits* may simply transform the unsustainability of the fiscal position, which would necessitate some adjustment in the future, into a fiscal crisis in the present period.

Figure 19: Fiscal Space Index



Source: Van den Noord (2010)

Keynesians' response to argument #1

Governments must definitely provide their plans on how they will achieve debt sustainability in the medium term. But all governments do not need to carry it out immediately (i.e. 'one-fiscal-size-does-not-fit-all'). In other words, the deficit hawks' fiscal medicine is not the right economic policy for the countries with relatively more fiscal space (see figure 19). If a medium-term consolidation plan is deemed credible, it will help keep bond vigilantes at bay while giving enough time for the private sector to repair its balance sheet. This is all the more important because historical deleveraging episodes have been very long (they last on average for 6-7 years) and very painful (McKinsey Global Institute, 2010). More importantly, McKinsey finds that deleveraging begins *two years after the start of the crisis*, and GDP contracts for the first 2-3 years of deleveraging, and then starts growing again. If history is a guide, therefore, one can expect a significant period of deleveraging to come, which will dampen growth. So the rise in taxes and cuts in government expenditure can possibly make matters worse, as the overstretched private sector will have even less money left for spending. Not only that, structural unemployment will also rise to a 'new normal' if the economy does not recover soon. This is because workers will find it more difficult to return to the labour market after being away for an extended period.

The findings of the European Commission (2007) and Kumar et al. (2007), support this view as the authors show that gradual consolidations have been more successful than sudden, or 'cold shower' consolidation because they are usually accompanied by structural reforms which aid the persistence of any

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improvements to the fiscal position. The European Commission finds that fiscal consolidations starting during or shortly after a systemic financial crisis have significantly lower chances of success. Specifically, considering the whole sample of consolidation episodes, austerity measures starting during a financial crisis have on average 30.2% less chance of success and even if undertaken up to five years after the start of a financial crisis have a substantially lower probability of reducing public debt level (-24.4%). Even worse, unfavourable cyclical conditions tend to reduce the likelihood of success of a consolidation. The results for the whole sample of consolidation episodes as well as for quick and gradual ones considered separately, suggest that a protracted slowdown reduces the probability of success by 20–30%. Also Corsetti et al (2010a) show that gradual consolidation may be the strategy that has the lowest cost in terms lost output.

As a consequence, governments can get away with higher debt (i.e. minimise 'tail risks') if they retain markets' confidence that they are not only able but also willing to repay the debt in the future. History of sovereign default shows that the authorities' *willingness* to service their debt is perhaps more important than their *ability*. As for Citibank chairman Walter Wriston famously said, "Countries don't go bust". At the end of the day, country default is the result of a complex cost-benefit analysis involving social, political, economic and financial considerations⁴ (Manasse and Roubini, 2005).

We must stress, however, that the willingness of authorities to carry out painful measure is not enough to keep markets calm. The political economy of fiscal burden sharing is particularly important. Democratic societies in the West can face difficulties in agreeing the design and implementation of the fiscal squeeze necessary to address the fiscal imbalance. This kind of stalemate amongst different factions can be modelled formally as a feature of a '*war of attrition*' game, in which the players (i.e. the ruling coalition) make alternating offers about the distribution of the 'fiscal pain'. If the other players (e.g. leaders of opposition parties, trade unions and citizens) accept the latest offer, the fiscal burden sharing plan contained in the offer is implemented. If the offer is rejected (sometimes through massive strikes and street violence), one of the other players gets to make an offer. Time passes between offers and the longer this process takes, the bigger the fiscal problem becomes. As such, governments should show that they not only have the *willingness* to tighten their belts when the time is ripe but that they also have the full backing of the public for doing so. Otherwise, markets might not deem the consolidation plan credible.

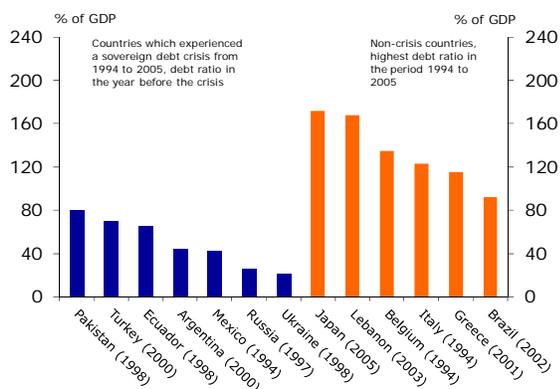
In actual fact, past evidence supports the view that willingness to repay matters more than ability. This is because larger public debt ratios, by themselves, have

⁴ The case of Romanian debt repayment in the 1980s is a nice example in this regard. Romanian dictator Nikolai Ceausescu decided to repay his USD 9bn of debt to foreign banks by forcing the population to live through cold winters with little or no heat and factories were shut down because of limited electricity.

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not been an excellent predictor of sovereign debt crises. In the aftermath of WWII, government debts in excess of 100% of GDP were common in the industrialised world and none of these led to default. In 1946 the US had a debt ratio standing at 121%, and managed to bring this down to just 31% in less than 30 years (1974). The UK had a net public debt ratio of 238% in 1947 and managed to bring that down to 25% in 1991. The success of these countries stems from relatively low interest rates (due to market confidence in the government's willingness to pay) as well as high growth (due to rebuilding of the economies). Meanwhile, many emerging countries defaulted when debt ratios were far below 100% because investors suddenly lost faith in their ability and/or willingness to repay (i.e. asked for very high interest rates or decided to not roll-over outstanding debt at all). Looking at country experiences of the

Figure 20: Do debt ratios matter for crises?



Source: Giammarioli et al. (2007)

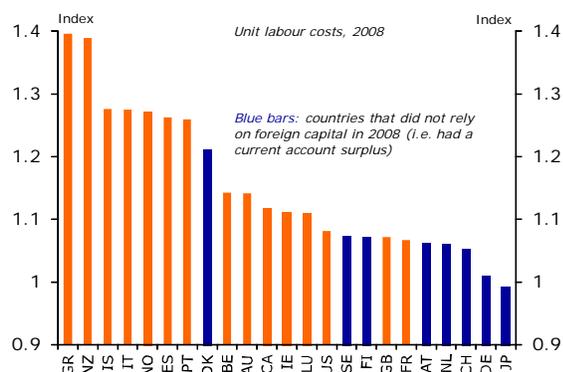
recent 20 years, Giammarioli et al. (2007) show that debt crises occurred at very different levels of debt ratios (see figure 20). Reinhart and Rogoff (2009) find that in more than 50% of the time, defaults in the middle-income countries in the period 1970-2008 occurred while external debt-to-GNP was below 60%. The IMF identified that more than half of the sovereign debt crises have occurred at debt ratios below 40% and two thirds below 60% (Giammarioli et al., 2007). So neither theory nor practical experience gives a clear indication of why higher debt ratios will have to result in a sovereign debt crisis. One country may be heavily indebted (e.g. the UK and the US after WWII) but have a negligible probability of default because markets believe in its willingness to repay (possibly for having a good track record), while a second may have moderate debt levels and run a considerable default risk for the opposite reason (Reinhart, Rogoff and Savastano, 2003; Manasse and Roubini, 2005).

Another argument for not exiting too early is that deficit reduction may actually *push interest rates higher* if it chokes the fragile recovery. So instead of solving the problem, governments really add to it by exiting quicker than necessary. This happens if the exit has the effect of throwing the hot potato of unsustainable debt back to the private sector while it is still busy repairing its balance sheet (De Grauwe, 2010b). Put differently, austerity measures make deficit reduction less successful when credit-constrained households and firms are still in the midst of their deleveraging process. In the worst case scenario, which is commonly known as the **paradox of thrift**, governments' exit from loose fiscal policies may become self-defeating – tax revenues implode and social security expenses soar. The resulting deterioration of asset quality in the banking sector might even force governments to rescue them once again –

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pushing debt ratios even higher. In addition, a large fiscal correction may also result in a prolonged bout of falling wages and prices, which may, in turn, envelop the entire economy and worsen public finances even more.

Figure 21: Competitiveness must be boosted



Source: OECD

Consequently, investors become more anxious about the sustainability of the country's public debt and start asking for higher interest rates. This naturally leads to a self-fulfilling vicious spiral, whereby higher interest rates amid market nervousness lead to rising debts, which will further undermine investor confidence and (perceived) government willingness and ability to service its debt.

What about countries with limited fiscal space then?

This begs the question, therefore, as to how will fiscal contraction be successful in the countries that have limited fiscal space combined with very high interest rates and low

economic growth. The answer of Keynesians is that such countries have no option but to tighten their belts, improve the health of their banking sector so that credit starts flowing again into the economy and carry out structural reforms – such as liberalising labour markets and promoting competition in various sectors. These policies taken together will hopefully boost their nominal GDP in the medium term and enhance their competitiveness in the global marketplace (see figure 21). The IMF (2010a) calculation shows that a 1%-point increase in growth (holding spending constant and assuming a 40% tax rate) lowers government debt by a whopping 30%-point of GDP within 10 years if revenues are saved.

Of course, they note that the impact of reforms on the broader economy is subject to lags. It may sometimes take years before one sees the benefits of reforms. But what is even more important is that reforms do not always have the desired effect, at least in the short run. For example, making the labour market more flexible may backfire in the first instance. Rodrik (2010) claims that "*reducing the cost of firing workers will not increase demand for labour much when no one wants to hire new workers*". So governments should not hope that they can grow their way out of debt with only structural reforms. Furthermore, the debt-laden countries cannot not hope for a lot of demand coming from abroad even if they restore their competitiveness – either through internal devaluation (i.e. lower real wages) or external devaluation (i.e. exchange rate depreciation). The expected slowdown of the global economy amid synchronous exit of major industrialised economies from loose fiscal policies cautions against building a credible fiscal adjustment strategy primarily around an optimistic export growth path. A favourable external economic

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environment has always been extremely important for successful fiscal consolidation programmes in the past (McDermott and Wescott, 1996; Tsibouris et al., 2006; Von Hagen et al., 2001). What's more, the emerging markets are

too small still to be able to pull the world economy on their own. And the most important ones, like China and the ASEAN members, are themselves reliant on an export-led growth model.

All these arguments taken together means it is even more important that countries with fiscal room continue to support their economies in order to give time for the hard-hit countries to correct their fiscal imbalances. If households and firms keep on saving more while the public sector reins in its deficit, growth must come from foreign demand. Other than that, the country is doomed to years of economic stagnation, which will make debt dynamics

even less favourable. However, if all policies fail, Keynesians believe an orderly default in terms of debt restructuring for those with unsustainable debt trajectories should always remain as an option on the table. The sooner this is acknowledged and carried out, the less painful it would be for creditors because debt levels do not rise much more.

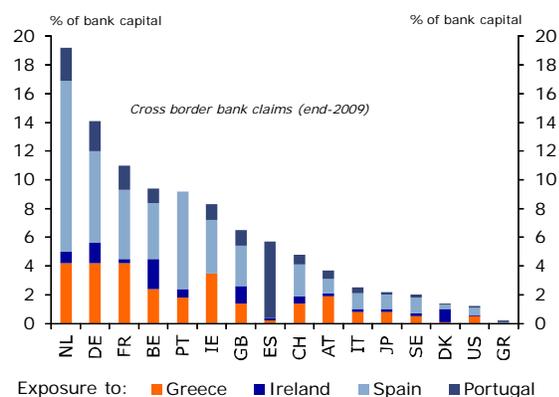
Are contagion risks accounted for?

Yet the deficit hawks are not pleased with this argument because of contagion risks. For example, if Greece were to default on all its debt (public and private), and the recovery rate is 0%, this will still have no significant consequences on the global banking sector as the claims on the country represent a small share of total bank capital in all advanced economies (see figure 22). But if the contagion risks of a Greek default were to spread to the other periphery countries, the situation can prove to be a catastrophe for the financial system. If Spain and Italy were to default together, for example, the capital base of some foreign banks will be entirely wiped out and the domestic banks will be hit even harder (i.e. they need to be rescued after the sovereign defaults). For this reason, many economists and policymakers are wary of sovereign defaults because they cannot credibly prevent contagion risks spreading from one country to another. Put simply, there is nothing 'orderly' about a default, some deficit hawks argue.

Deficit hawks' argument #2 – surge in public debt issuances will push interest rates upwards

Another reason why interest rates will rise is the enormous amount of sovereign bond issuances in the coming years. The IMF (2010a) estimates that by 2014

Figure 22: Contagion risks



Source: BIS, IFS

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eight advanced economies will have debt ratios near or above 100%, up from three in 2007. The idea is that governments will have to raise yields in order to lure in as many investors as possible. There is certainly evidence for this assertion. The results of the IMF (2010a) show that the impact of debt and deficits on interest rates is greater when the supply of sovereign bonds soars.

Keynesians' response to argument #2

There are three reasons why this should not be a problem for the major industrialised countries. First, the return of risk aversion owing to troubles in the European periphery has actually made investors rush into the safety of government bonds (for details see Stegeman and Piljic, 2010). Liquidity of these securities is no less important. Countries that particularly benefit from these 'safe-haven' flows are the US, the UK and Germany. Second, the fact that the interbank lending market is not functioning well forces most banks to purchase public debt in order to post as collateral for receiving ECB funding. This hugely raises demand for government bonds. Third, the private sector savings in most countries is enough to absorb the upcoming debt issuances as Japan has done for the past decade. Looking back at figure 14, it becomes clear that the governments that have a massive funding gap (i.e. they rely on foreigners for their debt financing) are actually the periphery countries. The difference between the public sector deficit and the private sector surplus in Greece, Portugal, Spain and Italy are expected to be 10.2%, 8.9%, 4.1% and 3.6% of GDP, respectively, in 2010. But the private sectors in Belgium, Finland, Austria, Denmark, Japan, Germany, Sweden, Switzerland, Finland and the Netherlands can easily fund the governments' deficits this year thanks to their large savings. As a result, if private sector surpluses remain sizeable in the coming years, governments in the advanced economies should not face much difficulty in financing themselves unless all households and firms decide to move their money to the emerging markets.

Deficit hawks' argument #3 – higher debt hampers growth

Another argument for consolidating quickly is that economic activity falls when debt ratios rise. New econometric evidence on the impact of high debt on potential growth — based on a panel of advanced economies over almost four decades — shows an inverse relationship between initial debt and subsequent growth, controlling for other determinants of growth. Estimates based on a range of econometric techniques suggest that, on average, a 10%-point increase in the initial debt ratio is associated with a slowdown in annual real per capita GDP growth of around 0.15%-points per year in advanced economies (IMF, 2010b). Also, Reinhart and Rogoff (2010a) find in their extensive database of 44 countries and about 200 years of observations, that median growth rates fall by 1% when the debt ratio rises above 90% of GDP.

Keynesians' response to argument #3

The experiences of different countries during the period under study by Reinhart

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and Rogoff shows that the issue is not as black and white as the deficit hawks claim. GDP growth in some countries picked up when debt ratios exceeded 90% (see figure 23). Also, it is unclear whether the causality is unidirectional or whether this observation partly reflects the fact that countries with low growth are more likely to have encountered debt sustainability problems (European Commission, 2010). It makes perfect (economic) sense to reason that lower economic growth actually pushes debt ratios upwards and not the other way around. Moreover, Sawhney and DiPietro (1994) find no evidence that government debt slows growth even after they control for a number of variables affecting growth.

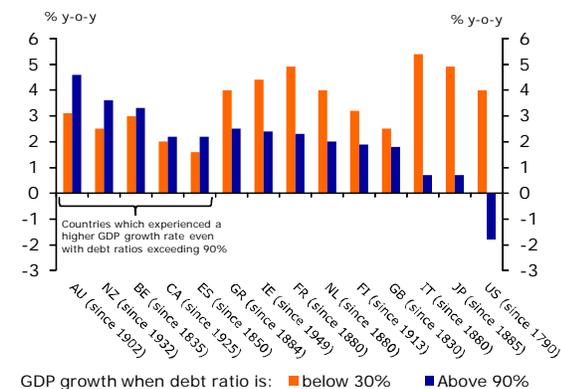
Deficit hawks' argument #4 – debt levels should be lowered due to rising ageing-related costs

There is no doubt that rapidly ageing populations will put an enormous amount of pressure on public finances of the OECD countries in the coming years. Citizens of the OECD economies are currently living around 20 years after their retirement. The direct costs of ageing involve increases in age-related expenditure such as pension and health-care entitlements, which will represent a sizeable share of total spending in the future (see figure 24). On average, spending increases in health and pensions are projected to rise by almost 5%-points of GDP in advanced economies over the next 20 years, according to the IMF (2010b). The indirect cost of ageing is a shrinking labour market, which reduces the potential growth rate of the economies in the long run. This, in turn, translates into lower tax revenues. To create some fiscal space for the future, therefore, governments need to lower debt ratios in the present period.

Keynesians' response to argument #4

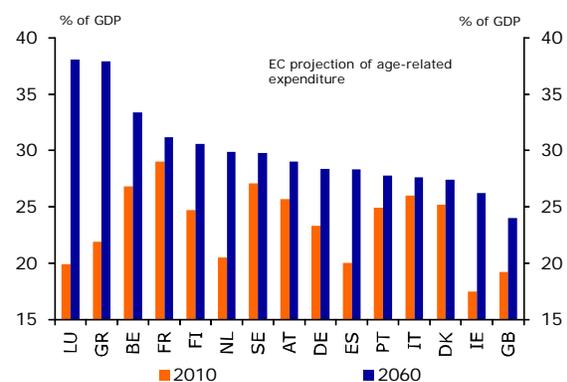
There is no reason to lower debt ratios quickly in the midst of a crisis to respond to a problem that will happen many years down the road. To prepare themselves

Figure 23: Debt doesn't always hurt growth



Source: Reinhart and Rogoff (2010a)

Figure 24: Ageing-related expenditures on the rise

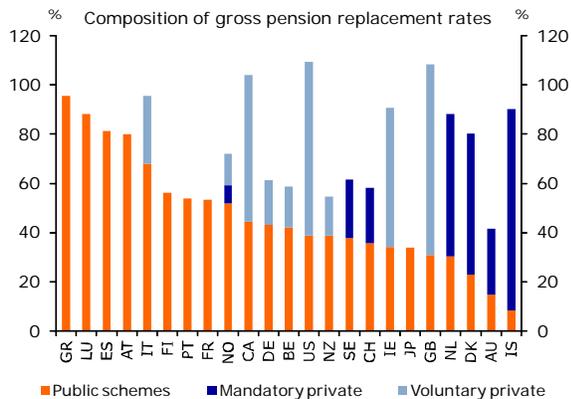


Source: European Commission

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for less favourable demographics, governments can better reform their pension and health entitlements (i.e. cutting promises rather than spending). First, the retirement age can be raised given higher life expectancy. If this is phased in

Figure 25: Pension schemes



Source: OECD

over time, the fiscal burden of ageing will be lowered without having immediate negative macroeconomic impact. For that matter, consumers won't go in an ultra saving mode if they realize that they have to work somewhat longer, say, 20-30 years from now. Another policy reform is to increase the burden sharing of pensions with the private sector. It is quite unfavourable when governments have to shoulder most of the costs as they do in Greece, Austria and Spain, for example (see figure 25). Finally, increasing the rate of immigration through a 'points' system like in Canada and Australia that aims to select migrants who have specialised skills can also help alleviate the problem. There is no shortage of high skilled labour in the

developing countries that are willing to move to the advanced economies for better opportunities. Governments can make immigration policy more flexible in order to reduce their countries' ageing problems and boost economic growth.

Deficit hawks' argument #5 – debt levels should be lowered in order to be able to respond to future economic shocks

Higher debt levels hinder fiscal policymakers to effectively respond to economic shocks. Such limitation for conducting countercyclical fiscal policies results in higher volatility and lower growth, and also tends to increase the vulnerability of the country to crises (Kumar and Woo (2010)). This can be especially costly for the eurozone members, given that they do not have an autonomous monetary policy to respond to adverse asymmetric shocks.

Keynesians' response to argument #5

It is understandable that governments will have less room to manoeuvre when debt levels are high. But what is more important is to deal with the current crisis at hand before thinking a couple of steps ahead. Moreover, if governments strangle the current recovery, they might have to backpedal on their former pledges of cutting spending and raising taxes in order to rescue the economy and/or the banking sector once again.

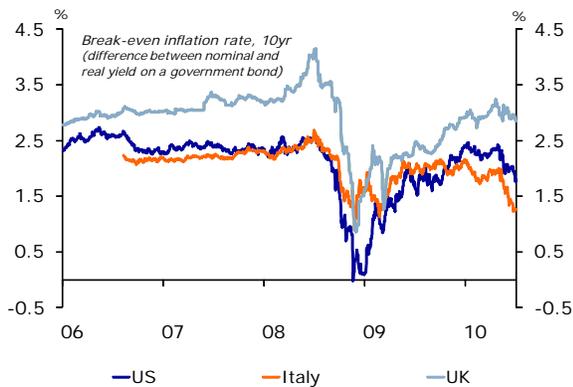
Deficit hawks' argument #6 – higher debt raises inflation expectations

Steeply rising public debt levels and the uncertainty associated with future fiscal consolidation plans poses challenges for central banks. The deterioration of fiscal positions may make investors question the monetary authorities' resolve in

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keeping prices stable over the medium term. This is because investors would assume – rightfully or not – that central bankers would give in to political pressures and attempt to inflate away the real value of debt. The payoff of doing

Figure 26: Long-term inflation expectations



Source: Bloomberg

this rises the larger the debt, the longer its average maturity and the larger the fraction denominated in domestic currency. If long-term inflation expectations rise suddenly above central banks' comfort zone, monetary authorities will have no option but to hike interest rates to demonstrate their anti-inflation credibility. Such pointless *game-of-chicken* with speculators can prove especially costly for the domestic residents.

Keynesians' response to argument #6

There are two reasons why inflation expectations will not rise. First, governments know that the costs of creating an unanticipated inflation would surely be very high in the form of permanently high future interest rates. This means the real value of debt will fall by a small amount in the short run, but the adverse effect of inflation on both interest rates and growth means debt dynamics will become even more appalling once inflation is set loose (for a detailed discussion see [Kamalodin \(2010b\)](#)). Second, central banks will possibly face difficulties in raising inflation rates even if they wanted to. The experience of Japan's unsuccessful quantitative easing programme shows that engineering higher inflation is easier said than done. Excessive slack in the economy combined with a weak banking sector actually increase deflationary risks. This is why inflation expectations have remained well-anchored to the central banks' targets (see figure 26).

Deficit hawks' argument #7 – multipliers turn negative when debt rises

Fiscal policy will no longer have strong Keynesian effects at high levels of debt because the multiplier drops and even turns negative at times. Blanchard (1984) shows that, at low debt levels, the 'payback' for the private sector (in terms of lower expenditure/higher taxes) can be put off to the distant future. However, at higher levels of debt, the private sector realises that the situation is unsustainable and that a near-term correction is inevitable (Nickel and Vansteenkiste, 2008). The assumption here is that consumers (firms) base their consumption (investment) decisions to some extent on expected future income (profit). In this context, GDP growth may even fall during the stimulation period if the private sector starts spending less in the anticipation of higher taxes in the future (this is known as the *Ricardian equivalence effect*). While this proposition

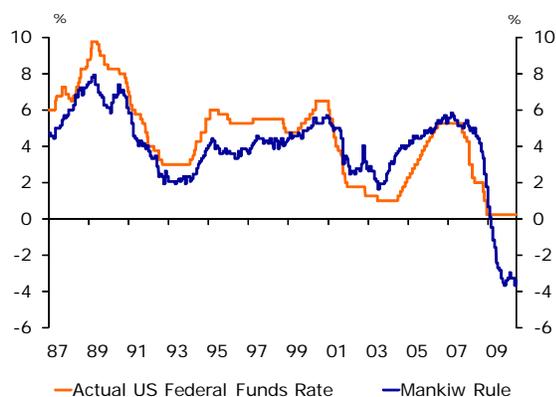
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in its pure form would apply only under rather strict assumptions⁵ that are hardly met in reality (Bernheim, 1987; Evans, 1993), it is found to be of some relevance for actual behaviour (Kim and Roubini, 2003; Nickel and Vansteenkiste, 2008).

Recent OECD estimates assessing Ricardian equivalence, suggest that the public/private saving offset is around 40% on average across OECD countries (Röhn, 2010) and that this offset already materialises in the short term. However, large variations across countries exist.

Against this background, governments cannot continuously stimulate the economy until households and firms have completely repaired their balance sheets. At some point in time, any increase in fiscal stimulus will have a contractionary effect on the economy since Ricardian agents will start saving more and offset higher government expenditure.

Figure 27: Monetary policy in the US



Source: Rabobank, Bloomberg, Mankiw (2001)

Keynesians' response to argument #7

It is simply not true. Corsetti et al. 2010b find the impact of multipliers for government spending are usually quite low in normal circumstances but they become actually quite high – as high as two for output and consumption – during financial crises. A particular reason for this is that monetary policy rates are constrained by the zero-bound (Roeger and In't Veld, 2009; European Commission, 2010). Figure 27 clearly illustrates that monetary policy in the US is certainly tight (i.e. is 'pushing on a string') given the surge in the jobless rate. Although, this is not the case for the eurozone on aggregate (see figure 28), the strong difference in unemployment rates amongst the members (see figure 29) suggests that monetary policy might be restrictive for eurozone countries like Spain and Ireland. More importantly, lower policy rates do not support the economy when the monetary transmission channels are clogged. Banks in the Western world are still licking their wounds and are in no position to start lending to the private sector. Even if they are able to lend, the higher spreads they need to pay for their long-term financing means that the low policy rates are not fully passed on to the private sector. All these reasons taken together mean that multipliers may be higher in the current crisis than in times of macroeconomic stability.

⁵ The most often debated assumptions are lump-sum or non-distortionary taxes, households planning on an infinite horizon (or the notion that generations are linked by bequests in such a way that they behave as if they were planning for the infinite future), and no liquidity constraints.

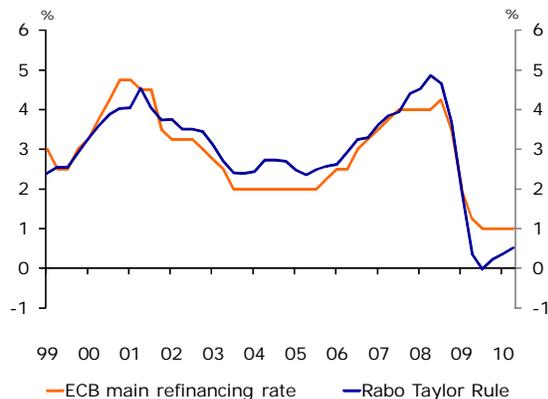
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Deficit hawks' argument #8 – multipliers also stay negative during consolidation phase (austerity measures can have expansionary effects)

The mirror image of the previous argument of deficit hawks (i.e. negative fiscal multipliers) is that austerity measures can even have potentially expansionary effects (also known as non-Keynesian effects) as they did in the past in some countries (Blanchard, 1990; Drazen, 1990; Bertola and Drazen, 1993; Barry and Devereux, 1995; and Sutherland, 1997). According to the expansionary fiscal contraction (EFC) hypothesis, a fiscal adjustment may be expansionary if Ricardian agents believe that the fiscal tightening generates a change in regime that eliminates the need for larger adjustments in the future (Giavazzi and Pagano, 1990; Blanchard, 1990). As a consequence, the private sector will spend more in the anticipation of *lower taxes* in the future.

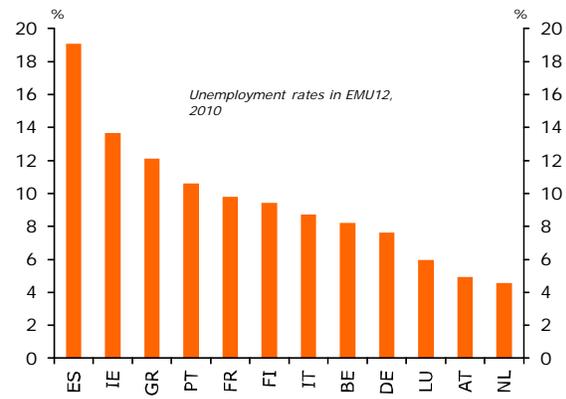
An additional channel through which current fiscal policy can influence the economy is via its effect on interest rates. A large and credible consolidation programme can anchor the expectations of financial market participants and, thereby, lead to a drop in the risk premium the government has to pay on its debt. The reduction in government bond yields can, in turn, push interest rates for the private sector downwards, which will have positive effects on the overall economic activity. Lower interest rates, by raising the relative returns of investment projects, can stimulate private investment. Spending on durable goods can also pick up as consumers can access bank lending at lower interest rates. In a flexible exchange rate regime, lower interest rates may also cause a depreciation of the exchange rate, which will enhance the country's international trade competitiveness. A positive wealth or liquidity effect on consumption might arise as well since lower long term interest rates tend to raise the price of assets –stocks, bonds and real estate. Higher asset prices may also result in a pick-up of private investment as suggested by *Tobin's q* theory, which states that a rise in the market value of firms relative to the replacement cost of capital can result

Figure 28: Monetary policy in the eurozone



Source: ECB, Rabobank FMR calculations

Figure 29: Divergent jobless rates in the EMU



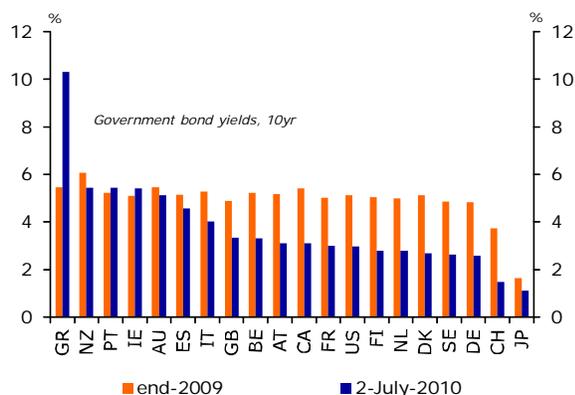
Source: OECD

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in larger investment spending as firms can buy more investment goods with only a small issue of equity. Additionally, rising net worth of firms and households increases spending because banks will be more willing to lend against higher collateral.

These *financial accelerator effects* (see Bernanke, Gertler, and Gilchrist, 1999) can be particularly important for firms when capital markets are not functioning well – as is presently the case. All in all, the drop in government bond yields can give the economy a much-needed shot in the arm.

Figure 30: Borrowing costs for governments



Source: OECD

Keynesians' response to argument #8

The recent historical evidence presented by deficit hawks is largely irrelevant. The EFC hypothesis is dismissed because the Ricardian offset of public saving is *weaker* when private agents are credit-constrained (Röhn, 2010) and are in need of repairing their balance sheets. Hence, the potential crowding-in of private investment and consumption will be

less in the current scenario. The planned consolidation may even trigger a negative response from the private sector as we experienced during the consolidation phase of the US in 1937.

The argument that consolidation bolsters growth through lower interest rates is equally unconvincing. Although this argument might hold for some of the hard-hit periphery countries, interest rates are already very low for most other OECD countries (see figure 30). So we cannot be sure how much the marginal fall in interest rates will help. For example, one of the important reasons why Sweden and Finland had successful consolidation programmes in the 1990s was because their long-term interest rates halved between 1994 and 1998. And during the fiscal consolidation of Ireland (1982-86) long-term interest rates dropped by a whopping 10%-points. This will not hold for most countries no matter how fast they lower their deficits.

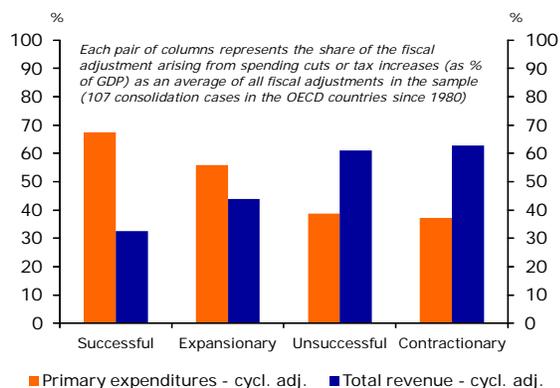
Deficit hawks' argument #9 – the negative impact of the fiscal squeeze on the economy can be minimised

Governments can limit the fallout from the upcoming fiscal adjustment by putting most of their effort in cutting spending rather than hiking taxes. This is because past experience of countries shows that spending restraint is more likely to generate lasting fiscal consolidation and better economic performance than the latter (Alesina and Perotti, 1995; Alesina and Ardagna, 2009; Lane and Perotti, 2003). Alesina (2010) shows that in the case of successful fiscal consolidations about 70% of it came from spending cuts and in the case of

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expansionary almost 60%. Instead in the case of unsuccessful and contractionary more than 60% of the adjustment was on the tax side (see figure 31). Of course, the broadening of the tax base, the reduction of exemptions and

Figure 31: Spending cuts are more successful



Source: Alesina (2010)

introduction of taxes with the least distortionary impact on economic activity, such as consumption taxes (Johannson *et al.*, 2008), should be included in the policy mix given the scope of the upcoming fiscal correction for most countries (Miyazaki, 2010).

Keynesians' response to argument #9

Quite surprisingly, most economists broadly agree about the fact that governments should place most of the burden on spending cuts. But again caution is warranted. One of the most important reasons why expenditure-driven adjustments are more successful is because it is easier for the private sector to fill in the gap left by the budgetary adjustment if

it does not face the additional burden of increased taxation during the adjustment process. This argument holds in normal times, but not when the private sector is saddled with a gigantic amount of debt. Another reason is that unit labour costs (ULCs) fall in expenditure-driven adjustments. Lane and Perotti (2003) find that a reduction in public wages has the effect of 'crowding in' an expansion of output, employment and profitability in the trade sector. This happens because a decrease in government employment reduces the probability of finding a job if not employed in the private sector, and a decrease in government wages decreases the worker's income if employed in the public sector. In both cases, the wage demanded by the union for private sector workers decreases thanks to an excess supply of labour in the private sector (Alesina, 2010). However, as noted earlier, higher competitiveness cannot push exports higher if external demand remains weak, which is currently the case.

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Summary of key points

To summarise, the key points made by **deficit hawks** are the following:

- Fiscal policymakers must get ahead of the game if they would want to avoid a spike in interest rates (that worsens debt dynamics and brings the sovereign debt crisis closer).
- Governments should lower debt ratios amid unfavourable demographic prospects. It will also help in responding to future economic shocks.
- Public sector profligacy raises inflation expectations while it loses its Keynesian effects.
- Governments can limit the fiscal fallout by taking a number of measures such as placing most of their effort on cutting spending instead of raising taxes. Structural reforms are also indispensable.
- A correct, well-timed and credible fiscal consolidation plan can restore order to the public finances and even have expansionary effects.

To summarise, the key points made by **Keynesians** are the following:

- Countries with relatively more fiscal space should announce credible medium-term plans on how they will improve the health of the public sectors' balance sheets but must only carry them out when recovery takes foot and credit is flowing into the economy.
- The authorities must realise that domestic and external demand will remain weak for some time so a loose fiscal policy is necessary given that monetary policy is constrained by the zero-bound.
- Pension reform is a better answer to ageing problems than lowering debt ratios in the middle of a crisis.
- The consequences of structural reforms must be carefully examined before being implemented.

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What are the prospects?

By now you realise that the conflicting signals economists are sending will not help governments formulate a coordinated policy action. Even the attempt of Blanchard and Cottarelli (2010) in finding a 'middle ground' between the two camps – albeit with a slight Keynesian bias – with their ten commandments of fiscal adjustment (see box 2) has not convinced all policymakers. Some countries – most notably the US and France – are opting for the Keynesian approach because they believe fiscal consolidation in the immediate future derails the recovery while others – such as Germany, the Netherlands and the UK – believe that remaining complacent is like painting a bulls-eye on your back. We can be sure about one thing though: navigating in these uncharted waters will prove extremely difficult for all policymakers. None of them can be sure about the chosen path. The US government can, for example, present its medium-term plan, but it can never bet that it will be deemed credible by the markets. On the other hand, the countries heading for exit will hope growth to be less hurt thanks to the crowding-in effect of the private sector. But the fact of the matter is that they will only know for sure whether the economy is negatively affected or not after they have adopted they have exited, which might be too late.

Box 2: Ten commandments for fiscal adjustment in advanced economies

To stop the infighting between the deficit hawks and Keynesians, Blanchard and Cottarelli (2010) presented the following ten commandments that they believe all governments in advanced economies must bear in mind before formulating fiscal policy.

- **Commandment I:** Thou shalt have a credible medium-term fiscal plan with a visible anchor (in terms of either an average pace of adjustment, or of a fiscal target to be achieved within 4–5 years).
- **Commandment II:** Thou shalt not front-load your fiscal adjustment, unless financing needs require it.
- **Commandment III:** Thou shalt target a long-term decline in the debt ratio, not just its stabilisation at post-crisis levels.
- **Commandment IV:** Thou shalt focus on fiscal consolidation tools that are conducive to strong potential growth. This will require a bias towards spending cuts.
- **Commandment V:** Thou shalt pass early pension and health care reforms as current trends are unsustainable.
- **Commandment VI:** Thou shalt be fair. To be sustainable over time, the fiscal adjustment should be equitable.
- **Commandment VII:** Thou shalt implement wide reforms to boost potential growth.
- **Commandment VIII:** Thou shalt strengthen your fiscal institutions.
- **Commandment IX:** Thou shalt properly coordinate monetary and fiscal policy.
- **Commandment X:** Thou shalt coordinate your policies with other countries.

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This unprecedented rise in uncertainty has, therefore, made the job of risk managers extremely difficult. They can either keep their fingers crossed and hope that:

- the Keynesian view holds for the governments deciding to stay put and
- the deficit hawks' view holds for the governments deciding to exit.

Or they could think the unthinkable and see which of the advanced economies have a higher likelihood of experiencing a sovereign debt crisis if the rosy scenarios of both camps prove false. After all, the history of financial crises shows that we may experience a string of sovereign defaults in the not-so-distant future. Against this backdrop, we are of the thought that identifying the more susceptible countries that can experience a crisis is better than suffering once again from the 'this-time-is-different' syndrome.

In this section we will assess the vulnerability of a number of OECD countries to a sovereign debt crisis based on a couple of macro indicators. In doing so, we shall look at the following two criteria set by rating agencies when assessing sovereign risk.

1. Can the countries in question plausibly generate and maintain the primary surpluses required over the medium term to bring their debt ratios to more sustainable levels? (*Debt sustainability*)
2. Will the debt ratios, either along the path or at the end of the horizon, become so large that the countries run into problems servicing and/or financing them? (*Debt affordability & financeability*)

Debt sustainability

To conduct debt sustainability analysis, one must first begin by defining it. The basic requirement for the sustainability of public debt is that governments should not engage in a *Ponzi-finance scheme* – servicing existing debt by issuing additional debt to cover both interest payments and principal repayments (Bohn, 2005; Van Wijnbergen and Budina, 2008). Instead governments should stay within their intertemporal budget constraints (IBC). In highly technical terms, this implies that the discounted value of current and future income plus initial wealth should at least be equal to the discounted value of all current and future non-interest expenditure (van Wijnbergen and Budina, 2008). But it should be reminded that the IBC is most often considered over an infinite horizon with no implications about when the primary surpluses should be larger or smaller, nor does it imply that the debt should stand at a particular finite value at any given point in time. As such, it could theoretically be satisfied by very high levels of debt and, therefore, very high interest payments, in the short term or at any time horizon, as long as there is reason to believe that sufficiently large primary surpluses will be achieved afterwards. In simpler terminology, we should not worry even if a country's debt ratio is approaching 1000% because one day

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the government will decide to run enough primary surpluses to bring it down again. This can lead to a nice mathematical formula, but experience shows that this definition is hardly reflecting reality! Hence, it is best to define a finite version of the IBC, by setting a target date and a target debt level and considering whether and how this can be achieved. As the IMF points out, public debt is considered sustainable if 'major corrections' in the primary balance are unnecessary (Wyplosz, 2007). This refers to severe expenditure cuts and/or large revenue increases.

With this definition in mind, we will carry out a simple exercise to see whether the countries in our sample meet the IMF definition of debt sustainability. To get a rough estimate of the required fiscal adjustment that reduces the debt ratio to more prudent levels, we first need to make an assumption about the growth and interest rate outlook of the country over a given horizon⁶. What we also need to do is specify a target debt ratio that the government must strive to achieve. After making these assumptions, we can calculate the required primary balance (RPB) that a country has to have in order to bring down its debt ratio towards a specified target within a given period through the following formula:

$$RPB = \frac{(1 + \delta_t)^j d_t - d_j^*}{\sum_{j=0}^{T-1} (1 + \delta_t)^j}, \quad \delta \approx r - g$$

where r denotes the long-term government bond yield, g is the country's nominal GDP growth rate, T is the horizon in which target debt ratio (d^*) has to be achieved and d is the debt ratio.

In the first exercise, we assume that all governments need to reduce their debt ratios to their pre-crisis levels (i.e. 2007); except for the eurozone members that need to meet the 60% debt ratio in line with the Maastricht Criteria. What's more, all countries need to achieve their goal by 2020 (i.e. $T=10$). It is clear from figure 32 that most countries must not only remove the fiscal stimulus measures but should also come up with sizeable tax hikes and spending cuts in the coming 10 years. The governments of Italy and Greece, for example, would need to post a surplus on their primary balance amounting to 10% and 7.5% of GDP, respectively, every year for the coming 10 years. This has been never done before by any country.

Since such painful correction is not likely to be implemented, highly indebted eurozone governments can instead opt for lowering their debt ratios to the pre-

⁶ For simplicity, we assume that the OECD's long-term interest rate and nominal GDP growth forecast on average over the period 2010-11 will hold for the entire forecast period.

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crisis levels. In a second exercise, we show that the RPB falls sharply for some of the eurozone countries when they decide to lower their debt ratios only to the 2007 level. Going back to our example above, the RPBs of Italy and Greece will drop by 4.5%-points and 4.1%-points of GDP, respectively, when they decide to not lower their debt ratios to 60%. Of course, countries such as Ireland and Spain will be worse off since their debt ratios in 2007 were below 60% before the crisis.

To ease the pain of consolidation even further, governments can simply opt to stabilise their debt ratio at its current level (i.e. $d^*=d_t$ and $j=1$). This will

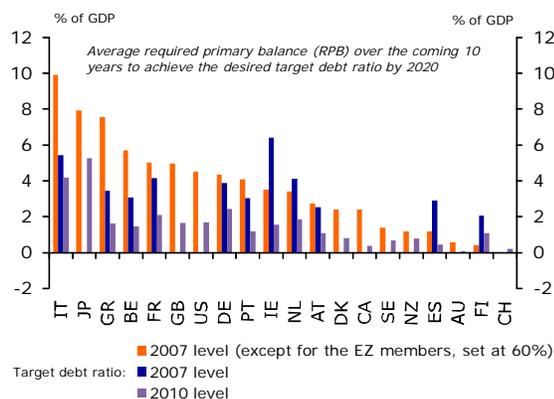
simplify the equation to $RPB = \frac{\delta_t d_t}{1 + \delta_t} \approx \delta_t d_t$. Not surprisingly, the RPBs fall

even more and make the upcoming adjustment less painful. This could be a possibility for countries with relatively low public debt, but we would definitely not recommend it for highly indebted countries such as Japan, Greece, Italy and Belgium.

In the final exercise, we see how much the fiscal pain falls if governments consider a longer horizon to reduce their debt ratios to the pre-crisis levels. Figure 33 shows that governments need to adjust fiscal policy much less if they plan to do this over a longer time horizon (in this case T=20) than the 10 years we assumed in the baseline scenario. Of course, this is conditional on the fact that markets believe the government will continue to take the painful fiscal medicine for such a long period (almost a generation).

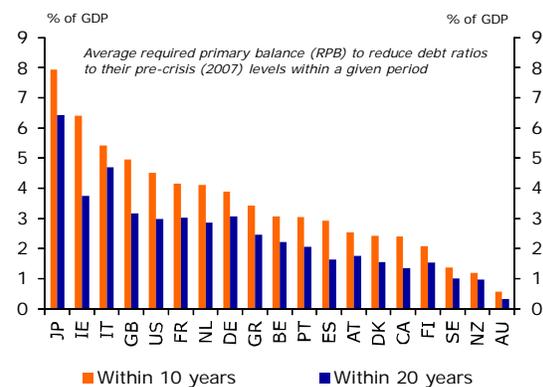
We must stress that this mechanical illustration has been conducted for the sake of demonstrating a rough magnitude of the challenges in the near future (i.e. the purpose here is not to make a forecast). But if the fiscal adjustments are

Figure 32: Adjustments needed in various scenarios



Source: Rabobank, OECD

Figure 33: Fiscal squeeze in different time frames



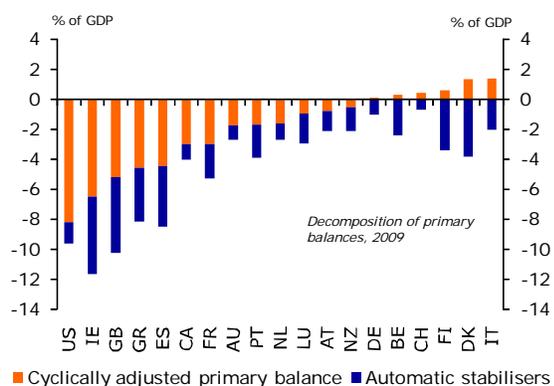
Source: Rabobank, OECD

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roughly correct, we can be sure that is impossible for some countries such as Italy and Greece to lower their debt ratios to pre-crisis levels until 2020 given the expected political backlash (for political consequences of fiscal consolidation

see box 3). Furthermore, the possible economic ramifications of such sharp correction of fiscal imbalances in a number of countries should not be overlooked. In this simplistic exercise, we assumed that GDP growth stays constant no matter how large the RPB is. However, this is an unreasonable since a large fiscal adjustment is bound to push nominal GDP significantly downwards. Given that the cyclically adjusted primary deficit of Greece is far larger than Italy's, fiscal consolidation will be even more painful for the former even though its RPB is smaller (see figure 34). Phrased differently, Greece has to put in way more effort to achieve the same primary surplus as Italy.

Figure 34: Structural deficits



Source: Rabobank, OECD

Box 3: How costly is consolidation for politicians?

Market participants believe that fiscal consolidation is the kiss of death for the governments implementing them. But, as opposed to what the collective wisdom dictates, the empirical evidence finds no such relationship. Alesina, Perotti and Tavares (1998) do not find that governments which reduce deficits drastically also systematically lose, either in terms of losing popularity or in terms of losing the next election. The authors also find some evidence that the popularity of the governments react more positively to fiscal adjustments on the spending side.

In a more recent research, Alesina, Carolini and Lecce (2010), find that in the Gros and Alcidi (2010) sample of historical fiscal consolidation, the number of times the government changed was 13 times and in 26 cases there were no changes (see table 4). The authors argue, therefore, that it is possible for fiscally responsible governments to engage in large fiscal adjustments and survive politically. But the success is very much dependent on a number of ingredients all authorities need to consider – creation of a sense of urgency because of impending crisis, carrying out consolidation early on after the election (i.e. in the 'honeymoon' period) and communicating well with the public.

Another important ingredient that the authors failed to add is the level of economic activity. GDP growth in many of these countries (e.g. Greece, Sweden, Ireland, and the UK) was higher in the aftermath of the consolidation due to a number of factors such as falling interest rates, depreciating exchange rates and

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robust external demand. Based on this evidence, governments should not bet on staying in office even if their actions results in highly unfavourable labour market dynamics.

Table 4: Impact of consolidation on politicians

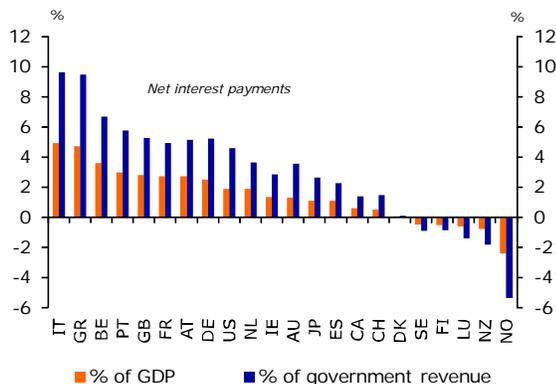
	Period	Primary balance adjustment per year (%GDP)	Number of times government changed	Number of times government did not change
Denmark	82-86	-2.4	0	2
Greece	89-94	-1.9	2	2
Sweden	93-98	-1.5	1	2
Ireland	87-89	-1.3	0	1
Portugal	80-86	-1.0	0	5
Italy	92-97	-1.0	2	3
UK	93-99	-1.1	1	1
Finland	92-00	-1.2	2	1
France	93-97	-0.6	1	2
Belgium	81-90	-0.7	0	4
Austria	95-01	-0.6	2	2
Netherlands	90-00	-0.4	2	1
Total change				13
Total no change				26

Source: Alesina, Carloni and Lecce (2010)

Debt affordability & financeability

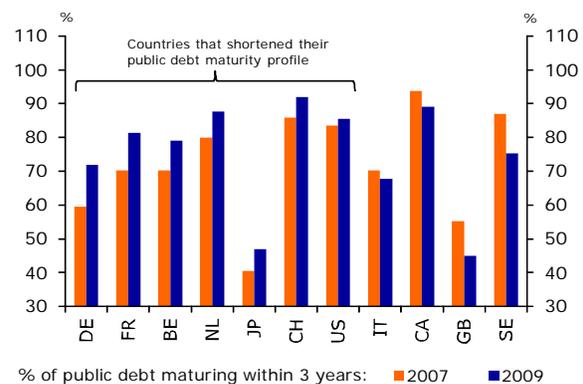
As far as debt affordability is concerned, Moody's argues that net interest payments on government debt (as a share of total government revenues or GDP) is the single most important indicator to monitor (figure 35). This measure, namely, reflects the share of the budget that is devoted to servicing debt interest payments and will, by and large, determine whether the markets believe that governments *can* and *will* continue to service their interest obligations. If rising risk premia and debt levels make interest payments so big that debt servicing crowds out a large part of the public budget, the government might find it worthwhile to default on its debt.

Figure 35: Fiscal squeeze in different time frames



Source: Rabobank, OECD

Figure 36: Maturity structure of public debt



Source: OECD

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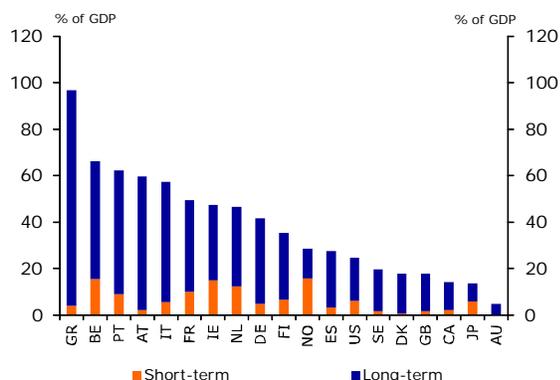
Alternatively, fiscal policymakers might opt to economise on debt-servicing costs by resorting to lending at shorter maturities. Germany and France are notable examples of this strategy (see figure 36). However, *'playing the yield curve'*

brings about risks of its own. Governments with massive short-term debt to roll-over usually become ill-positioned to adjust if rates spike or market confidence suddenly wanes.

An additional way to keep debt servicing costs in check is to increase international bond offerings, which allows debt managers to tap a wider range of investors. This is already happening to a large extent in the advanced economies as they tapped international capital markets 50 times during July 1, 2008-June 30, 2009, compared with 19 deals in the previous 12 months (Cheasty and Das, 2009). Greater exposure to foreign funding can also be a risky strategy in the medium run. Historical

evidence shows that the share of public debt in foreign hands tends to be a good predictor of liquidity crisis because 'footloose' foreign investors rush quicker for the exit when panicked in comparison to their domestic counterparts (Fuertes and Kalotychou, 2007; Manasse, Roubini and Schimmelpfennig, 2003). There are two reasons for this. First, foreign investors usually have less knowledge of a country's 'true' macro fundamentals. Second, countries are generally less inclined to default on their debt if it is held by domestic residents because of the severe macroeconomic and political repercussions (Reinhart and Rogoff, 2009).

Figure 37: External public debt



Source: BIS, IMF, WB, OECD

Table 5: Financing needs of the public sector

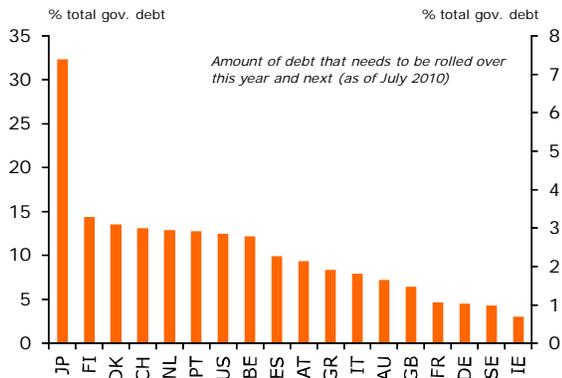
	Weighted average maturity (years)	Gross debt in 2009 (% GDP)	Maturing debt in 2010 (% GDP)	Deficit in 2010 (% GDP)	Gross financing needs in 2010 (% GDP)
Japan	5.2	217.7	54.2	9.8	64
US	4.4	83.2	21.2	11	32.2
Italy	6.7	115.8	21.2	5.2	26.4
Belgium	5.4	97.3	20.8	5.1	25.9
France	6.5	77.4	16.9	8.2	25.1
Portugal	6.2	77.1	13	8.8	21.8
Greece	7.4	115.1	13.4	8.1	21.5
Canada	5.6	82.5	15.9	5.3	21.2
Spain	6.7	55.2	10.3	10.4	20.7
UK	12.8	68.2	8.6	11.4	20
Ireland	6.7	64.5	7.7	12.2	19.9
Germany	6	72.5	10.2	5.7	15.9
Sweden	6	40.9	6.8	3.3	10.1
Australia	4.8	15.5	2	5	7

Source: IMF

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As such, the financeability of public debt is also an important determinant of impending sovereign debt crisis. Remember, the gross financing needs for governments arise from several different sources. In each period, governments

Figure 38: Refinancing risk



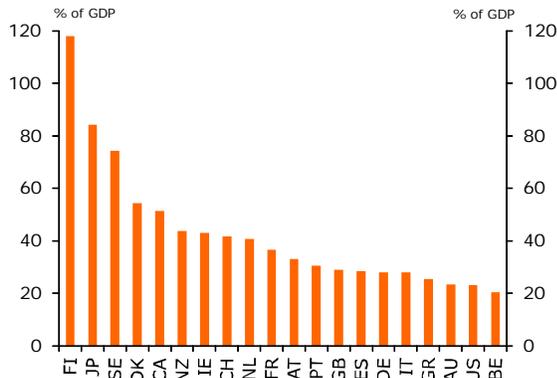
Source: Rabobank, BIS, Bloomberg

must finance both primary deficits and the interest payments on the continuing stock of gross debt. In addition, governments need to cover financing needs associated with the turnover of the maturing portion of the debt. Information for selected OECD countries provided by national authorities (see table 5) suggests that Japan has the largest financing need in 2010 (64% of GDP) followed by the US (32%) and Italy (26%).

At face value, one can say that the larger the amount of financing needs, the more susceptible a country is to a liquidity crisis. But an even more important indicator for liquidity crisis is the amount of maturing public debt

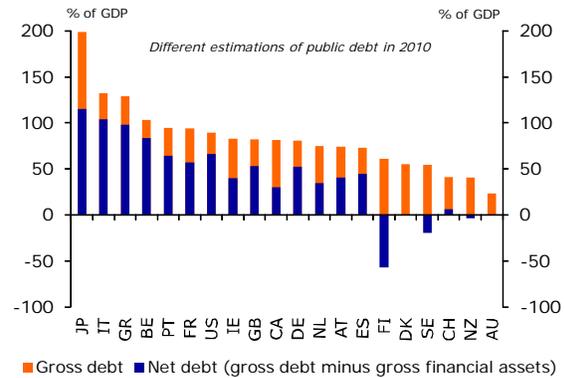
that needs to be rolled-over in the short-term as a share of total debt outstanding (see figure 38). If governments cannot finance their deficit, they still have the painful option of living within their means (i.e. posting a balanced budget). Regrettably, the same does not hold for outstanding debt that needs to be refinanced. In case the bond market shows less appetite in digesting the new issuances at the going interest rate authorities will be forced to either (i) raise the yields to uncomfortably higher levels to make the bonds more attractive to investors (i.e. long run insolvency comes under question), (ii) go cap-in-hand to the IMF or other governments with deep pockets (e.g. Germany or China) for financial support or (iii) sell their financial assets to service their debt (see figure

Figure 39: Gross financial assets of public sector



Source: OECD

Figure 40: Gross vs net public debt

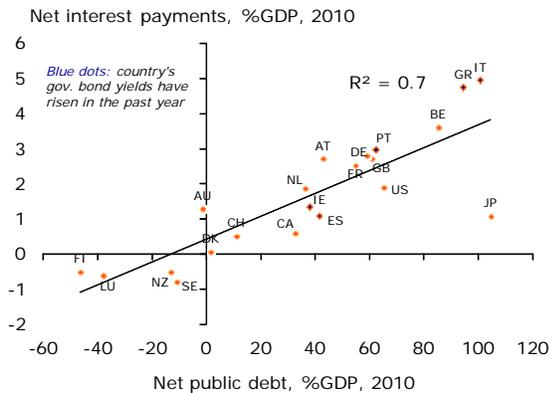


Source: OECD

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39). With regards the latter, it is important to mention that governments' net public debt (see figure 40), which is the value of gross public debt less gross public financial assets, can also paint an overly optimistic picture since

Figure 41: Borrowing costs and public debt



Source: OECD

authorities may run into difficulty if they wish to liquidate their assets immediately to meet outstanding liabilities. Obviously, assets sold at fire sale prices are always worth less than their book value. It is also reasonable to assume that some of the government's financial assets, such as 'soft loans' granted to firms with a high probability of default, may not be available to repay debt when needed. As a final point we need to mention that net debt statistics must be treated with extra caution since its definition is less consistent across countries. This is due to different treatment of financial assets. Some countries (e.g. the UK) net out relatively liquid assets; and others use net debt as equivalent to

(financial) net worth — netting out highly illiquid assets or assets for which divestment would require changes in key policies (e.g. equity in public enterprises) and are thus not effectively available to redeem debt. Hence, one should also look at gross debt figures when assessing a country's debt financeability.

Thus far, we have looked at individual early warning indicators that can assist us in predicting sovereign debt crises. The difficulty with this approach is that some countries score better on one indicator than another. At best we can make a two-way analysis in a single figure. For example, looking at figure 41, one can say that Italy is facing more problems than Greece as far as debt affordability and financeability is concerned. Debt servicing costs are already high in both countries and, on top of that, an abrupt dry up of liquidity may force them to default given the enormous amount of outstanding debt they need to roll-over. But this figure masks many differences between the two countries. Italy (i) has a far smaller cyclically adjusted primary deficit, (ii) pays a lower interest rate, (iii) is less reliant on foreign capital inflows, (iv) is less exposed to international investors, (v) has a smaller ageing problem, (vi) has a stronger economy, (vii) has a better repayment track-record, (viii) is more competitive, (ix) has more reliable official statistics, and (x) has one of the most liquid bond markets in the world. All these reasons taken together mean that we should be less worried about Italy than for Greece even though in figure 41, one may draw the opposite conclusion.

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The Sovereign Vulnerability Index (SVI)

Against this background, to get a clearer overall picture of fiscal risks in the industrialised world we have created a composite indicator – the Sovereign Vulnerability Index (SVI) – which ranks the major advanced economies from the most vulnerable to a sovereign debt crisis to the least on the basis of eight selected indicators. The SVI will help us summarise such abundant information and, for this reason, is a useful tool for screening country risks. We should note that this exercise is not flawless, however. By selecting a set of indicators and excluding others and by aggregating different types of risks in the SVI, some information is lost. What's more, the absence of a strong theoretical base regarding the weights of each indicator forces us to give equal weighting to each indicator. But this might be too simplistic given that some variables are perhaps more important when it comes to assessing a country's vulnerability to sovereign debt crisis.

After looking at a host of variables, we settled on the following eight indicators:

- Indicator 1:** The required primary balance for reducing debt to its 2007 level within 10 years;
- Indicator 2:** The cyclically adjusted primary balance (% of potential GDP);
- Indicator 3:** Net interest payments (% of GDP);
- Indicator 4:** Net financial liabilities (% of GDP);
- Indicator 5:** The 2010-11 debt-rollover (% of total outstanding debt in March 2010);
- Indicator 6:** External debt (% of GDP);
- Indicator 7:** Current account balance (% of GDP);
- Indicator 8:** Corruption perceptions index.

The first two indicators broadly capture the amount of the pain the government needs to go through in order to guarantee debt sustainability. The third variable measures the affordability of public debt while the fourth and fifth variables measure its financeability. The sixth and seventh variables measure the country's dependence on foreign investors (serves as a proxy for possibility of liquidity crisis). Finally, the corruption perception index is considered a proxy for the government's *credibility, ability and willingness* in carrying out the needed austerity measures (instead of manipulating its official statistics, for example).

Once the variables are selected, we construct a z-score in order to be able to interpret the countries' relative positions. Note that the greater the deviation of a country's z-score from zero (i.e. the higher the SVI), the more vulnerable the country is to a sovereign debt crisis. To benchmark our SVI z-scores, we have compared it with markets' rankings based on the implied probability of default (IPD) derived from CDS spreads (see box 4). In our baseline scenario, we assume a fixed recovery rate of 70% for all countries, which is in line with the historical issuer-weighted average recovery rate for defaulted sovereign bonds in emerging markets between 1998 and 2008 (Moody's, 2009). For completeness,

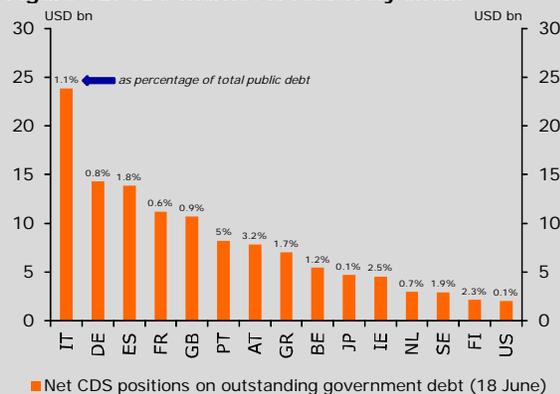
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we have included the rankings of countries based on the European Commission's (2010) recent Fiscal Risk Indicator (FRI).

Box 4: Estimating the market-implied probability of default derived from CDS spreads

CDS spreads on government bonds are very useful indicators for assessing sovereign risk given that they directly measure the cost of insuring debt against default. The significance of CDS spreads is nicely captured in the research of Ciarlone and Trebeschi (2006). The authors find that in 75% of the time CDS spreads accurately predict sovereign debt crises while their early warning models based on only macro data managed to predict no more than 56% of the observations.

Figure 42: CDS market is relatively small



Source: DTCC, BIS

We have decided to measure IPDs from CDS spreads instead of bond spreads for a number of reasons. First, apart from counterparty risks, other risk factors (e.g. liquidity, FX movements, etc.) generally play a less dominant role in CDS spreads than they do in the determination of bond spreads. Moreover, CDS spreads are not distorted due to the quantitative easing programmes of the central banks that tend to push bond yields lower. Another advantage of CDSs compared to bonds is that price discovery takes place first in the CDS market during crisis situations (Blanco, Brennan, and Marsh, 2005), even though it is far smaller in size than the bond market (see figure 42). Chan-Lau (2006) also confirms the finding of past academic studies by stating that during periods of distress, for mature markets, liquidity in the underlying bond market may dry up while trading in the CDS market continues.

Indeed, as noted by Fleming and Garbade (2002), in the aftermath of the 9/11 attacks, price discovery migrated from the bond market to the CDS market, as a result of the serious disruption in the underlying bond market clearing mechanisms. The CDS market has even led the pickup in bond yields in the recent episodes in Greece and Portugal. Granger causality tests over the period

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January 2008–April 2010 carried out by the IMF (2010b) show that the CDS spreads anticipated bond spreads, while the reverse was not true.

Neftci, Lu and Santos (2005) have offered three reasons for these findings

1. It is 'costly' to short bonds since one has to go to repo market to find such bonds and repo has mark-to-market property. With CDS protection there will be no such 'problem'.
2. Shorting a bond is risky because of short-squeeze possibilities. If too many people have shorted the bond, the bond may have to be covered at a much higher price.
3. Some bonds may be very hard to find when a sudden need for protection arises.

To derive IPDs from CDS spreads we use the following approximation

$$IPD \approx 1 - \frac{1}{\left(1 + \frac{\left(\frac{CDS_{\text{spread in \%}}}{100} \right)^t}{\left(1 - \frac{RR}{100} \right)} \right)}$$

Where t is the maturity and RR is the assumed recovery rate.

We have to state, however, that IPDs derived from CDS spreads can at times exaggerate the 'true' probability of default priced-in by markets because of 'proxy hedging' activities. This is when investors purchase sovereign CDSs as a proxy hedge where there is no protection available on specific companies or investments. Such activity will naturally result in an increase in CDS spreads on government bonds even though it has nothing to do with the underlying sovereign risk.

When glancing through table 6, a number of interesting observations catch the eye. The most noteworthy observation is that Italy is the most vulnerable to a sovereign debt crisis after Greece based on our estimation and that of the European Commission even though the market sees it as the least likely country to experience problems amongst the European periphery. Figure 43 shows that the biggest contributions to the Z-scores come from net interest payments (indicator 3), foreign debt (indicator 6) and corruption perception index (indicator 8). Only indicators 2 and 5 seem to have a negative contribution. Portugal is next in line mostly due to its massive current account deficit (indicator 7). Unfortunately, it is also the only country whereby all indicators contribute positively to the SVI. The massive amount of debt that Japan needs

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to rollover (indicator 6) together with its very high net debt and low growth (indicators 1 and 4) makes it the fourth most vulnerable country. The large structural deficit (indicator 2) of the US puts it in the fifth position. On the other side of the spectrum, the Scandinavian countries score the best (all indicators for Sweden are contributing negatively to the SVI) followed by the current account surplus countries, which is very much in agreement with the FRI.

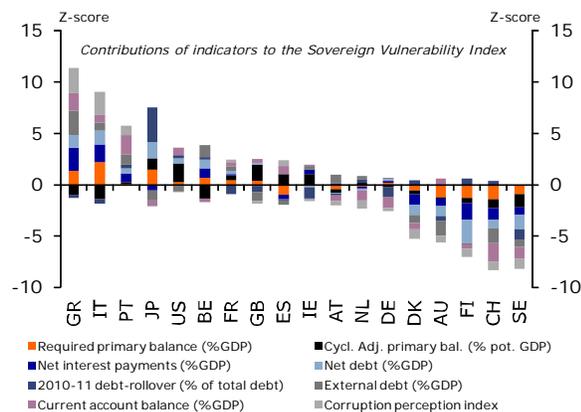
Table 6: The Sovereign Vulnerability Index

	SVI	Annual IPD derived from CDS spreads	Ranking based on		
			CDS spreads	EC Fiscal Risk Indicator	SVI
Greece	18.21	14.61%	1	1	1
Italy	15.39	4.90%	5	2	2
Portugal	13.87	7.35%	2	4	3
Japan	13.56	2.97%	7	N/A	4
US	11.11	1.18%	17	N/A	5
Belgium	10.35	3.88%	6	3	6
France	9.69	2.51%	9	6	7
UK	8.83	2.26%	10	8	8
Spain	8.59	6.71%	3	7	9
Ireland	8.50	6.70%	4	5	10
Austria	7.15	2.68%	8	11	11
Netherlands	6.73	1.50%	13	9	12
Germany	6.28	1.37%	14	10	13
Denmark	3.35	1.32%	16	13	14
Australia	3.15	1.87%	11	N/A	15
Finland	1.71	1.11%	18	12	16
Switzerland	0.24	1.63%	12	N/A	17
Sweden	0.00	1.32%	15	14	18

Source: Rabobank

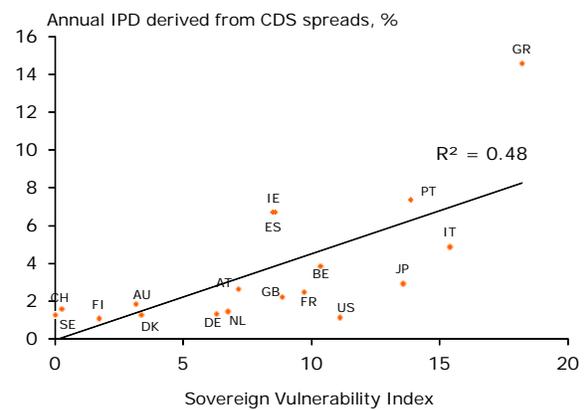
Note that the rankings of the European Commission diverge from ours after the third country because they did not include non-EMU countries. But there is a good correlation between the two rankings (the rank correlation is 94%). This is

Figure 43: Contributions of indicators to the SVI



Source: Rabobank, OECD

Figure 44: SVI vs CDS spreads



Source: Rabobank, Bloomberg

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certainly not the case when we compare our ranking with the markets' (the rank correlation falls to 67%). For some reason investors take a much more benign view on the US and Japan in comparison to our SVI while they are much more pessimistic about Ireland and Spain. There are a number of clarifications for the divergences between our SVI and markets' perception of sovereign risk.

- **Omitted variables?** As mentioned already, there is certainly the possibility that we have failed to include a number of important variables in the SVI. For one, we have not included contingent (or off-balance sheet) liabilities⁷ of governments even though they must be taken into consideration when conducting debt financeability analysis. This is because guarantees may be drawn upon at any given time if a certain situation occurs (e.g. domestic bank-run) and the purchased assets (most often conservatively collateralised debt or preferred shares) can fall in value, which will lead to lower sovereign net worth. If we were to add this variable in the SVI, the rankings would be markedly differently for some countries. For example, Ireland will rise strongly through the SVI-ranks given that the entire banking sector's liabilities are guaranteed.

The reason why we decided to not add contingent liabilities to the SVI is because it is extremely difficult to know *a priori* a governments' risk exposures – guarantees may not be called; announced lending facilities may not be used; loans may be repaid; and assets may retain their value. As stated previously, the direct fiscal costs of past financial crises offer no clue as well because they vary enormously with one another.

Another useful indicator, which is impossible to capture correctly, is the risk of contagion from other countries going through a debt crisis. Economists usually take the cross-border banking claims of the OECD countries to the European periphery as a measure of contagion risks (as we have shown in figure 22). But we cannot take comfort with this approach due to three reasons. First, we should not be under any illusion that forecasting sovereign debt crisis is difficult enough let alone knowing how crises transmit from one country to the other. Nowadays, all the attention is concentrated on the European periphery, so measuring exposures to them makes sense at this point. But in a couple of months or, possibly, years, some other country might step into the spotlight. Sadly, the list of possible candidates is very long. Second, the best estimate we have from cross-border banking claims is the exposure of a country's banking sector to another country's *entire* economy. For that matter, we have no information on how much of the Italian government debt is sitting in *each* of the industrialised countries' banks. In their recent quarterly review, the BIS only provided the breakdown of

⁷ Contingent liabilities can be in the form of guarantees on bank liabilities and deposits that did not require upfront financing and hence are not recorded in gross or net debt statistics.

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some of the countries' exposures to Greece, Ireland, Portugal and Spain (see appendix 2).

A further difficulty is that we cannot know how sovereign default transmits into the private sector. The most plausible channel is through domestic banks. On the asset side, a sharp decline in sovereign debt prices generates losses for banks holding large portfolios of government bonds. On the liability side, banks' wholesale funding costs rise generally in tandem with sovereign spreads; as a result, sovereign contagion risks will amplify the volatility of funding conditions for the banking sector. Both effects will lead to a significant tightening of credit conditions that can, in turn, push many firms and households over the cliff. Even if we know how hard the private sector will be hit, we can not correctly predict the recovery rate of households and firms.

One other variable that we decided to not include in the SVI is the countries ageing-related expenditures, which is arguably very important in assessing a government's long-term solvency. The reason for not including it is that the size of governments' future obligations is basically anybody's guess (Cecchetti et al., 2010). As far as we are concerned, there is no comprehensive account of the unfunded, contingent liabilities that governments have currently accumulated. Furthermore, the estimated ageing costs are very dependent on the future government policy that cannot be forecasted. How can we know what the governments' pension costs are when we are sure that retirement ages will not stay constant going forward?

- **'Soft' fundamentals are not correctly captured?** The SVI cannot account for the fact that the dollar's role as a reserve currency will help the US to fund its deficit for much longer than most other countries. The SVI also cannot measure the costs of default, which vary per country. Markets might believe that *reputational costs* of default for Spain and Ireland is less than, say, the UK which serves as the *de facto* European financial centre. This means the UK government might even go the extra mile in order to avoid an exodus of investment banks to Paris and Frankfurt.
- **Markets can make errors:** After the dismal failures of financial markets (and rating agencies) in giving the wrong signals to investors and borrowers prior to the crisis (see [Kamalodin, 2010a](#)), one would have expected that nobody would take their judgment seriously anymore. In statistical terminology, we can state that markets were making systematic type I errors, which can be viewed as an error of excessive credulity. Professional investors were of the thought that Greece was almost as safe as Germany so spreads of Greek government bonds (10yr) over the bund dropped to 'just' 8bps in May 2005. Borrowing the metaphor used by De Grauwe (2010a), we can claim that markets failed to cry wolf, when there were a lot of wolves in

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the forest. Nowadays, however, most seem to be conditioned by the idea that the markets must have got it right by now, especially when it comes to the evaluation of sovereign risk. But this begs the question why the financial markets, which were so spectacularly wrong prior to the crisis, would be right this year? Could it be that they now make the opposite mistake, i.e. overestimate risks in the government bond markets of some of the periphery countries? There is good reason to believe, therefore, that market participants are equally capable of making type II errors, which means they sometimes cry wolf all the time, when there are no wolves. Consequently, investors' *animal spirits* can force markets to swing from periods of euphoria towards periods of excessive scepticism in great speed.

Another related problem is that economic agents suffer from what psychologists call 'groupthink' – they come up with an acronym for a set of countries and then start treating them almost equally without doing their own homework. For years, this has been the case for the BRICs⁸ whereby many investors purchased a host of indices (e.g. MSCI-BRIC, FTSE BRIC 40 and etc.) make no distinction between the countries even though there are many differences (see [Loman, 2009](#)). The same rule might apply now for the Southern European countries as investors came up with unfortunate names such as the PIGS, olive countries, Club Med, etc. to bundle them together even though there are big differences amongst them.

⁸ Brazil, Russia, India and China

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Concluding remarks

After rescuing the world economy through heroic Keynesian policies, governments were saluted for their decisiveness. Unfortunately for them, this party came soon to an end and we are now experiencing the 'hangover'. The Greek saga and ballooning debt ratios in the industrialised world reminded everyone that risk has not been destroyed; it has merely been shifted from one sector to another. Hence, investors are afraid that the third act of the financial crisis is not a global recovery but a wave of sovereign defaults in the industrialised world.

To appreciate the risks of such a horrendous scenario, one needs to first form a broad understanding of what caused public finances to deteriorate so quickly in the past two years. It was certainly not because of budgetary indiscipline, banking support measures or the fiscal stimulus packages, as is commonly argued. Although all of them contributed to a certain extent, the principle reason for such rapid worsening of fiscal positions was the enormous drop in economic activity combined with the bursting of asset bubbles in some countries. As the private sector started deleveraging, governments began running deficits to prevent the global economy going into a tailspin.

But now that they have rescued the private sector, the rescuers (governments) are trying to find a way to save themselves. Unfortunately, policymakers are not completely sure how this must be done. On the one hand, those in the 'exit now' camp (e.g. Germany, the UK and the Netherlands) claim that governments should tighten their belts if they would like to avoid a liquidity or solvency crisis. This will not only restore order to public finances, but it may also lead to higher economic growth as we witnessed in the recent past. On the other hand, the proponents of the 'exit later' camp (e.g. the US and France) argue that exiting before a vigorous private sector recovery has been established will derail the recovery and weaken fiscal positions even more. They point to the unsuccessful consolidation plans of the US in the 1930s as evidence that a quick exit is like shooting oneself in the foot.

Due to the uncertainties surrounding both views we decided to find out which countries are most vulnerable to a sovereign debt crisis by looking at a number of macro indicators. Based on our Sovereign Vulnerability Index (SVI), Italy is most vulnerable to a sovereign debt crisis followed by Portugal, Japan and the US. At the opposite end of the spectrum, the Scandinavian and current account surplus countries seem to be the least vulnerable. At times our rankings deviate strongly with the rankings of the financial markets' (based on CDS spreads). One important reason is that a number of relevant indicators have been excluded because they were either unreliable or immeasurable. But this does not necessarily mean that we should ignore the results and solely stick to the markets' rankings. Although a bad rumour is sometimes enough to force a government to file for Chapter 11 regardless of its fundamentals, we believe that the early warning indicators used in this study should still do a reasonable job in

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forecasting impending sovereign debt crises. Put simply, even if markets can force the UK to default before Italy if confidence suddenly wanes in sterling assets, the chance of the opposite happening is more likely according to our SVI.

Having said that, we should be upfront about the fact that dealing with the issue of debt sustainability requires passing judgment on events that have not happened yet, that cover a very long horizon, measured in decades, and that are largely unpredictable. Moreover, forecasting market sentiment in the future is next to impossible. Thus, accurately forecasting the occurrence and timing of sovereign default will always remain more art than science.

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Appendix 1

Fiscal costs of banking crises

Table A1: Direct gross fiscal costs of past financial crises

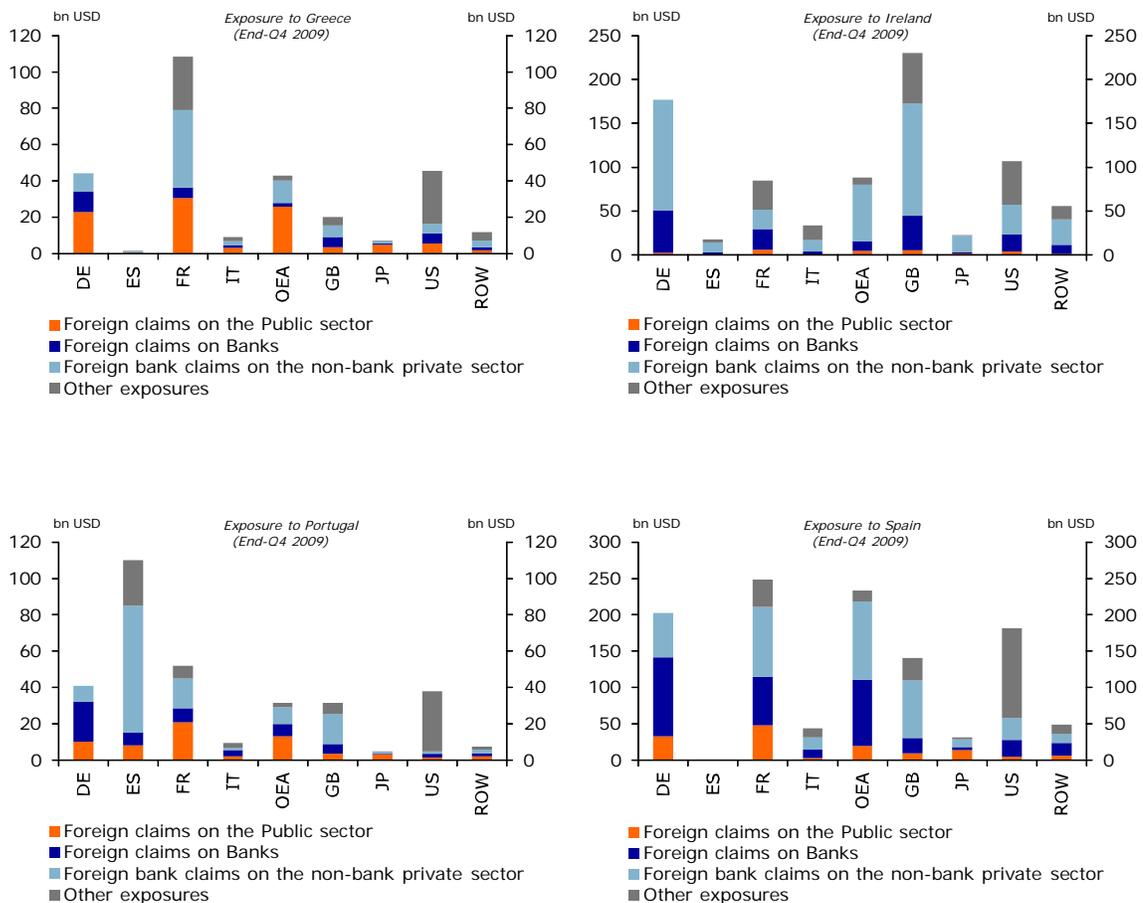
Countries	Crisis date	Total cost	Countries	Crisis date	Total cost	Countries	Crisis date	Total cost
Indonesia	1997	56.8	Slovenia	1992	14.6	Colombia	1982	5
Argentina	1980	55.1	Bulgaria	1996	14	Sri Lanka	1989	5
Jamaica	1996	43.9	Japan	1997	14	United States	1988	3.7
Thailand	1997	43.8	Nicaragua	2000	13.6	Sweden	1991	3.6
Chile	1981	42.9	Brazil	1994	13.2	Poland	1992	3.5
Macedonia	1993	32	Philippines	1997	13.2	Lithuania	1995	3.1
Turkey	2000	32	Paraguay	1995	12.9	Guinea	1985	3
Korea	1997	31.2	Finland	1991	12.8	Latvia	1995	3
Uruguay	1981	31.2	Hungary	1991	10	Philippines	1983	3
Israel	1977	30	Jordan	1989	10	Tunisia	1991	3
Côte d'Ivoire	1988	25	Tanzania	1987	10	Norway	1991	2.7
Dom. Republic	2003	22	Vietnam	1997	10	Turkey	1982	2.5
Ecuador	1998	21.7	Argentina	2001	9.6	Argentina	1995	2
Uruguay	2002	20	Croatia	1998	6.9	Estonia	1992	1.9
Mexico	1994	19.3	Czech Republic	1996	6.8	Zambia	1995	1.4
China, P.R.	1998	18	Colombia	1998	6.3	Thailand	1983	0.7
Benin	1988	17	Argentina	1989	6	Romania	1990	0.6
Senegal	1988	17	Bolivia	1994	6	Brazil	1990	0
Malaysia	1997	16.4	Ghana	1982	6	Ukraine	1998	0
Mauritania	1984	15	Russia	1998	6	St. deviation	1977-2003	13.6
Venezuela	1994	15	Spain	1977	5.6	Average	1977-2003	14.1

Source: Lavaen and Valencia (2008)

Appendix 2

Banking exposure to the periphery

The figures below show the exposures of a number of OECD countries to Greece, Ireland, Portugal and Spain. Looking at the data, we can see that public debt accounted for a smaller part of euro area banks' exposures to the countries facing market pressures than claims on the private sector. The joint foreign claims of banks headquartered in the eurozone on the governments of Greece, Ireland, Portugal and Spain (USD 254bn) amounted to approximately 16% of their combined overall exposures to these countries. Most of those claims belonged to French (USD 106bn) and German (USD 68bn) banks. These two banking systems had sizeable exposures to the governments of Spain (USD 48bn and USD 33bn, respectively), Greece (USD 31bn and USD 23bn, respectively) and Portugal (USD 21bn and USD 10bn, respectively). The largest non-euro area holders of claims on the public sectors of these countries were Japanese and British banks (USD 23bn and USD 22bn, respectively). The greatest exposures of both these banking systems were to the Spanish public sector (USD 13bn and USD 9bn, respectively).



Appendix 2

The exposures of BIS reporting banks to the public sectors of the euro area countries facing market pressures can be put into perspective by comparing them with these banks' capital. The combined exposures of German, French and Belgian banks to the public sectors of Spain, Greece and Portugal amounted to 12.1%, 8.3% and 5.0%, respectively, of their joint Tier 1 capital, according to the BIS. By comparison, the combined exposures of Italian, Dutch and Swiss banks to the same public sectors were equal to 2.8%, 2.7% and 2.0%, respectively, of their Tier 1 capital. Those ratios stood at 3.4%, 1.2% and 0.7%, respectively, for Japanese banks and 2.0%, 0.8%, and 0.7%, respectively, for UK banks. The exposures of US banks to each of the above public sectors amounted to less than 1% of their Tier 1 capital.

Colophon

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