

# Is Greece heading for default?

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February 2010

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## Executive summary

- Greece has slid into a serious fiscal crisis over the last few months. A ballooning budget deficit and high levels of government debt have raised questions in the minds of investors about the sustainability of the country's public finances.
- The level of concern among investors can be seen from developments in Greek borrowing costs relative to those in Germany. At the beginning of 2008, the yield on Greek 10-year bonds was only around 0.3% higher than on equivalent German securities, but this gap has now risen to over 3%. This yield spread is at its widest for more than a decade and is by far the largest within the Eurozone.
- The root cause of Greece's problems is a long period of fiscal indiscipline. In 2009, after years of heavy spending, the budget deficit rose to almost 13% of GDP and the public debt to GDP ratio is set to reach 125% this year. The deteriorating fiscal position has led to a slew of ratings downgrades, and outside the Eurozone Greece's credit rating would probably be in 'junk' territory.
- On top of the fiscal problems, Greece also suffers from weak external competitiveness. The real exchange rate has appreciated substantially since Greece joined the Eurozone, contributing to a sharp widening in the current account deficit to around 12% of GDP last year. On some estimates, the real effective exchange rate is now around 20% overvalued.
- As a result Greece now faces a series of policy choices all of which look unpalatable. Within the Eurozone, the only realistic orthodox option is a combination of massive fiscal retrenchment and 'internal devaluation' – forcing down costs relative to those of Greece's competitors. But fiscal cutbacks and cost deflation on the scale required could plunge the country into a deep and prolonged recession and might prove politically and socially unsustainable. The Greek economy is already showing signs of serious stress, with GDP down 2.6% on the year in 2009Q4.
- The extreme alternatives are default and/or leaving the Eurozone and enacting devaluation. But the political barriers to such moves are immense, and while default and devaluation could ease budgetary and external imbalance problems, they would also cause massive economic and financial disruption and probably a deeper recession in the near-term.
- Default and devaluation would also risk huge negative contagion effects on the Eurozone and the wider global economy. With Greece's debt approaching €300 billion a default would be the largest sovereign collapse since WWII, dwarfing those in Russia and Argentina.
- Eurozone banks could face losses of up to €100 billion on top of the heavy writedowns already suffered, risking a renewed Europe-wide credit squeeze. There could also be collapses in demand for the debt of other weaker Eurozone members such as Spain, Portugal and Ireland.

- World markets for equities, corporate bonds and emerging market debt would also likely be badly affected. There could also be pressure for the major economies to accelerate their fiscal adjustment efforts, given the impact on investor confidence and the scale of their budget deficits.
- Our estimation results suggest that a Greek default could be a real threat to the progress of the global recovery, cutting growth in the major economies by around 1% per annum compared to our baseline forecast and world growth by 0.6%.
- Given the potential massive consequences of a Greek default, the pressure for a bailout has been growing. Although there are questions about the legality of such a move, we believe it is possible if the political will exists.
- Estimation results using the Oxford Model suggest a bailout would be likely to be less economically damaging than a default, even assuming some negative impact from higher bond yields in the core Eurozone countries. The costs of a bailout could rise rapidly, however, if it extended beyond Greece to other troubled countries.
- A bailout would create a big risk of moral hazard, perhaps inducing fiscal misbehaviour among other Eurozone members or being used by Greece to sidestep the necessary adjustment. To avoid this, any bailout would have to incorporate strict conditionality, perhaps raising serious questions about fiscal sovereignty within the Eurozone.
- Over the last two weeks, the other EU countries have taken a relatively hard line with Greece, stopping short of announcing explicit financial support and pushing for strong fiscal adjustment measures. Although a bailout remains the most likely outcome if Greece struggles to refinance its debts, there are some signs that political resistance to such a move is growing. The key risk period could be April-May, when a large volume of Greek debt matures.

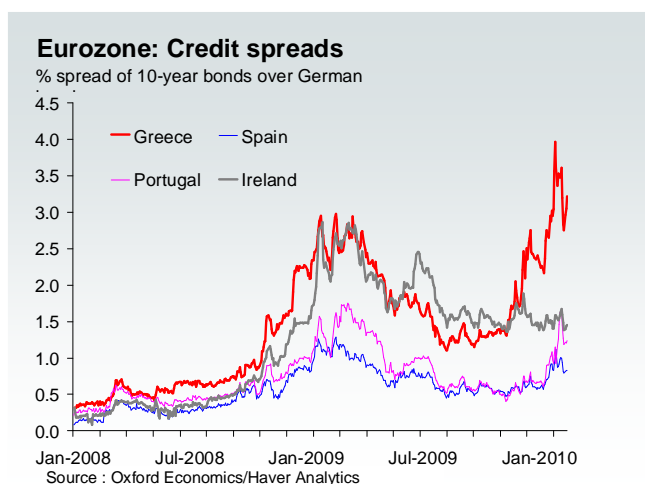
## 1.1 Greece's slide into fiscal crisis

Recent weeks have seen mounting concerns among investors about the financial and economic outlook in Greece. These fears have centred on Greece's fiscal position and outlook, which have deteriorated significantly over the past year, to the extent that there are fears of a possible debt default.

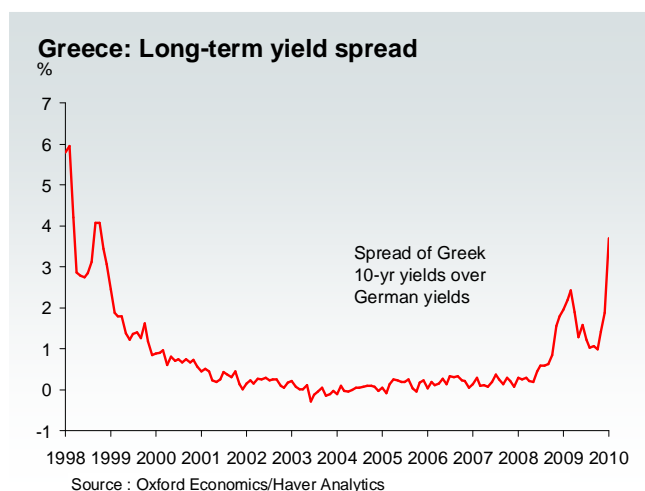
Currently Greek 10-year bond yields stand at around 6.4% (having been as high as 7% in the final week of January), over 3% above German yields of the same maturity. This spread between Greek and German 10-year yields has increased from a low of just 0.3% at the beginning of 2008, and now stands at its widest level since 1998 – three years before Greece joined the euro.

In part, this spread widening reflects a process of credit differentiation which has gone on across the euro area during the recession and financial crisis. Government debt yields in other weaker Eurozone members such as Ireland, Spain and Portugal have also risen sharply relative to German debt yields over the last two years. But the spread widening seen in Greek debt over the last few months has been far more dramatic than in these other weaker Eurozone countries.

**Chart 1: Eurozone credit spreads**



**Chart 2: Long term Greek bond spread**

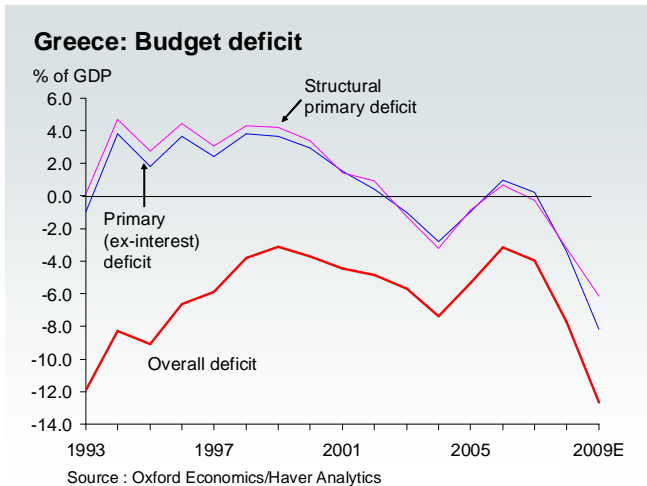


The key factor underlying the abrupt sell-off in Greek bonds has been a disturbing deterioration in the country's fiscal position. In October 2009 the new socialist government revised up the estimate for the 2009 budget deficit from 6.7% of GDP to 12.7% of GDP. This move shocked investors not only because of the scale of the upgrade, but also due to the admission by the Greek authorities that past deficit figures had been misleading. Even this figure could prove an underestimate, as cash measures of the deficit for 2009 look significantly larger and there have been significant recent downward revisions to GDP.

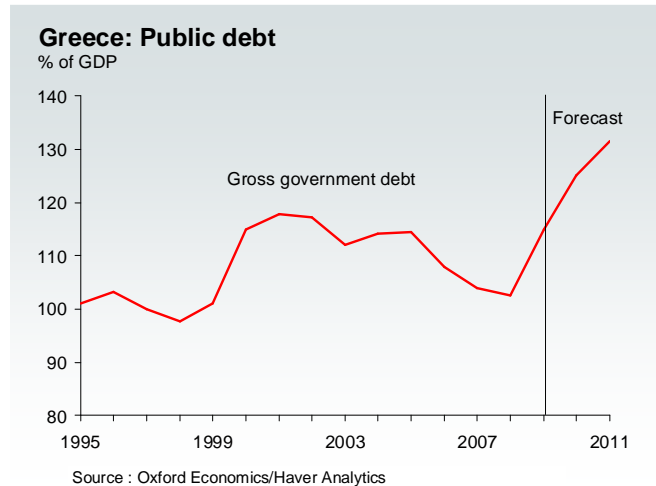
This was shortly followed by credit rating downgrades from all three of the major ratings agencies. At the time of writing Greece's rating with Moodys stand at A2 and with Fitch and S&P at BBB+. And with all three agencies giving it a negative outlook, the risk of further downgrades which would take Greek debt toward the BBB- boundary between investment grade and 'junk' debt remains significant.

The root cause of Greece's problems is a long period of fiscal indiscipline. Since Greece joined the euro in 2001 its budget deficit has averaged 6% of GDP per annum, double the supposed ceiling set down by the Maastricht Treaty. The underlying budget position has steadily deteriorated, with the primary (non-interest) budget balance moving from a surplus of 1.5% of GDP in 2001 to a deficit of over 8% of GDP in 2009. Even on a cyclically-adjusted basis, the primary deficit last year topped 6% of GDP.

**Chart 3: Greece budget deficit**



**Chart 4: Greek public debt**



Large deficits have also meant a heavy debt load. The public debt/GDP ratio was 115% in 2009 and is projected to rise to 125% of GDP in 2010, the highest level within the Eurozone. The combination of high debt and large deficits means that, in the absence of remedial action, Greece faces worrying debt dynamics in the years ahead.

Greece is fortunate in that euro membership has allowed it to borrow at a low cost over the last decade, so that the average interest costs on its large debt are relatively modest at 4.5% of GDP. This is approximately the same as the average rate of nominal GDP growth (real growth plus inflation). In the absence of a primary budget deficit, the debt/GDP ratio would therefore be stable in normal times. But with the primary deficit at its current size, the debt/GDP ratio will top 150% by 2014 and 200% by 2023.

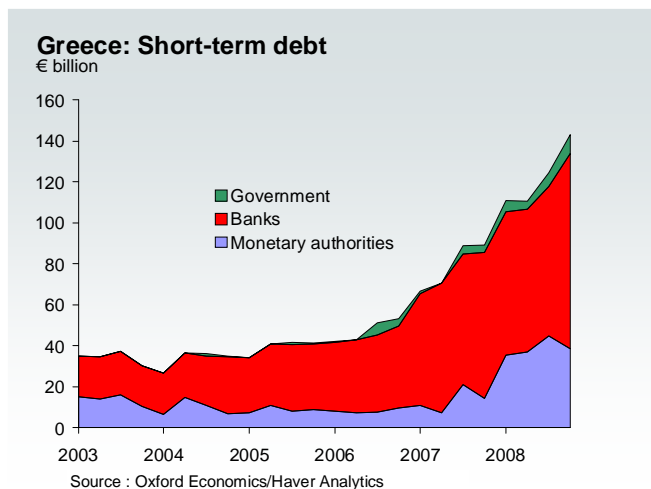
Stabilising the debt ratio requires an improvement in the structural budget balance of at least 6% of GDP, eliminating the structural primary deficit, and the fiscal effort needed could well be larger than this given the rising interest rates on Greek debt and the likelihood of a period of sub-trend GDP growth ahead as fiscal retrenchment proceeds.

Given the weakness of the fiscal position, Greece is highly vulnerable to negative shifts in investor sentiment. The maturity of new debt issues is already falling and their cost rising, and given sufficient investor nervousness this could give way to a full-blown cash-flow crisis. Over the next year Greece needs to raise as much as €60 billion in fresh borrowing to finance the budget deficit and repay maturing debt. In normal circumstances this would not be considered a problem, but should Greece lose the confidence of investors, this cash flow need – equivalent to almost a quarter of GDP or over 60% of general government revenues – could prove impossible to meet.

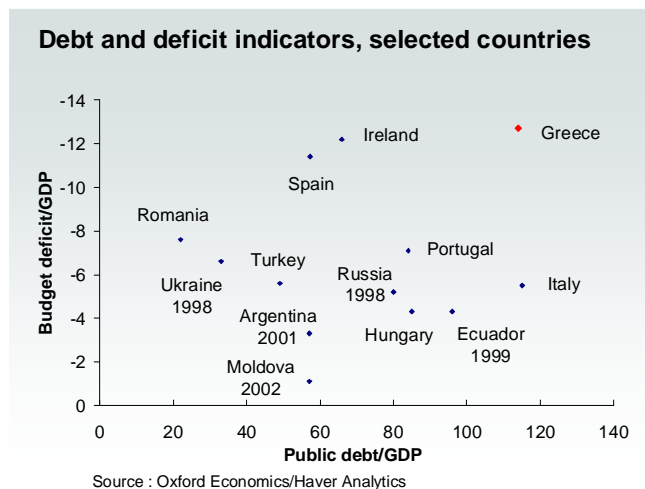
Moreover, it is largely foreign investors who will decide Greece's fate, as a large part of its debt is external debt. At the end of 2009Q3, the gross external debt of the government and monetary authorities totalled €262 billion – up almost €60 billion on the year.

The private sector also has substantial external liabilities, with financial sector debt at €115 billion and corporate debt €26 billion. An increasing share of the external debt of both the public and private sectors is short-term. Short-term external debt stands at €144 billion, 35% of the total, up from €71.8 billion or 22% of the total at the start of 2008.

**Chart 5: Greece short-term external debt**



**Chart 6: Greek fiscal position compared**



If Greece were to find foreign investors unwilling to buy its government bonds, it seems unlikely that domestic investors could take up the slack. The total holdings of all government bonds by Greek banks only amount to €30-40 billion, so financing the 2010 budget deficit wholly from domestic sources would imply Greek banks roughly doubling their existing bond holdings. Even if this could be achieved, the implied risk of crowding out of lending to the private sector would be substantial.

Greece also faces a further problem in this regard, in the shape of the ECB rules on eligible collateral. During the financial crisis, the ECB relaxed these rules to allow any paper rated BBB- or better to be acceptable in return for an ECB loan. But this rule change expires at the start of next year, when the limit reverts to A-. As a result, after the recent downgrades there is a risk that Greek and other Eurozone banks could find themselves unable to use Greek debt for collateral purposes. This prospect would be likely to reduce demand for Greek debt even further.

Greece's fiscal problems are by far the worst within the Eurozone. Italy and Belgium also have debt/GDP ratios above 100% but their budget deficits are much smaller, and while Ireland and Spain both have budget deficits in double figures as a share of GDP, their debt ratios are much lower than Greece's. Indeed, Greece's fiscal position also looks somewhat worse than those prevailing in countries like Russia, Argentina and Ukraine prior to their sovereign debt defaults. There is little doubt that, outside the Eurozone, Greece's fiscal position would be much more dangerous still – rating agency S&P has stated

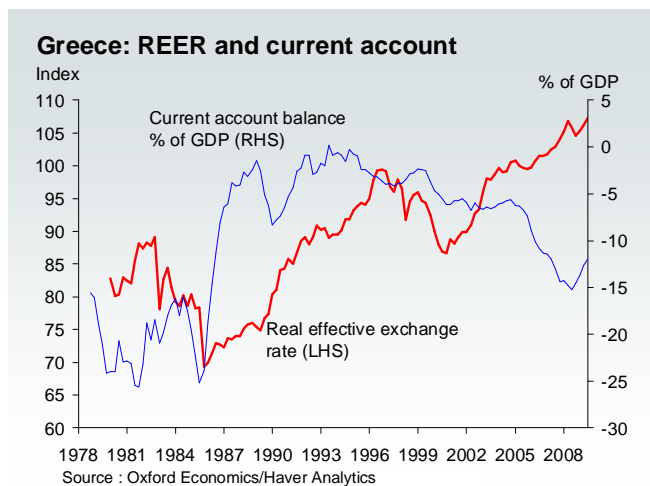
that its rating would be four notches lower outside the Eurozone at around BB, well into ‘junk debt’ territory.

To find similar debt and deficit positions among (current) Eurozone countries, you need to go back to the 1980s and early 1990s. Belgium in 1986 and Italy in 1993 both had budget deficits of 10% of GDP and public debt/GDP ratios over 100%. As these countries managed to muddle through without defaulting, this looks on the face of it to be encouraging, suggesting Greece can do likewise. However, in the years mentioned both countries had already eliminated their primary deficits – the starting point for the fiscal adjustments that followed were more favourable than Greece faces now.

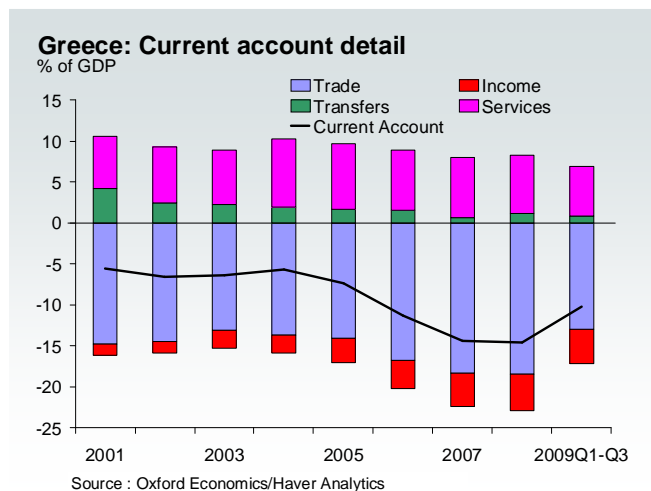
## 1.2 A further problem – the need for external adjustment

The previous section outlined the need for Greece to act to stabilise its public finances, but Greece also faces the problem of weak international competitiveness. When Greece joined the euro in 2001, its current account deficit was around 5% of GDP, but this ballooned to around 12% of GDP by 2009.

**Chart 7: Exchange rate and current account**



**Chart 8: Greek current account detail**



Once again, this development can be traced to a lack of policy discipline. Within the Eurozone, Greece needed to maintain moderation in wages and pricing but this did not happen. Wage growth has been running at around 5% per annum during Greece’s time in the Eurozone, around double the average rate for the Eurozone as a whole. In 2008-2009 nominal wage increases reached 12%.

As result the real effective exchange rate has appreciated steadily, and on some measures is now 20% overvalued. Weak competitiveness meant that from 2001-2008, Greek export volumes grew at just 3.8% per annum, only around half the weighted rate of growth of imports of Greece’s major trading partners.

A mounting interest bill has become a further serious drag on the current account position. In the first three quarters of 2009, Greece’s deficit on the income balance was €7.5 billion or more than 4% of GDP –

around 40% of the total current account deficit. This is the result of Greece having financed its large and growing external deficits through borrowing abroad, ironically something that euro membership has made easier by removing currency risk. Debt accumulation cannot go on forever, however, and generating the resources needed to meet debt repayments in the future implies the need to improve the non-interest components of the current account - such as the trade balance - substantially.

The only ways Greece can achieve the major improvement in external competitiveness needed to bring the current account deficit back to manageable levels are by a big increase in relative productivity or much lower relative prices and wages – a process sometimes referred to as ‘internal devaluation’. Neither of these will be easy to achieve. Productivity gains on the scale required imply the need for painful large-scale reductions in the workforce in tradable goods sectors, or a transformation of the structure of output which is unrealistic in the short-term.

Pushing down relative prices and wages by up to 20% will be very hard to achieve given that within the Eurozone this cannot be done by engineering significantly higher inflation within Greece. Instead, large cuts in nominal wages will be needed. The capacity of the Greek authorities to push through a programme involving deep cuts in nominal wages must be in question given Greece’s record as an economy exhibiting significant downward rigidities. The country’s political culture, featuring a tendency to populism, strong unionisation and violent protests, also raises serious questions as to how realistic such a policy approach is.

The need for ‘internal devaluation’ also makes budgetary consolidation harder. Pursuing this approach is at best likely to curb the growth of nominal GDP and at worst shrink it significantly. This will in turn tend to depress nominal government revenues, while government spending will likely prove more resilient in nominal terms due to resistance to cuts in public sector wages, pensions, and benefits.

### 1.3 Greece’s options

In order to tackle its current problems Greece has a number of possible options, all of which involve major risks and challenges -

- **Unilateral fiscal consolidation and internal devaluation – ‘toughing it out’.** This would involve Greece engaging in a severe fiscal adjustment programme with major spending cuts and tax increases to sharply reduce the budget deficit. In order to solve the problem of external competitiveness, there would also need to be a big reduction in wages relative to Greece’s Eurozone partners. While theoretically achievable, there are major questions about whether such an approach would be politically and socially sustainable. On the positive side, fiscal adjustment efforts ought to bring down borrowing costs, easing the pressure on the real economy.
- **Default within the Eurozone.** Greece could repudiate or more likely seek to restructure its public debt while remaining a Eurozone member. In principle there is no barrier to this, but the



consequences would be severe in terms of financial contagion within the Eurozone and in the wider world. Greece would also still be left with a budget problem due to the size of the non-interest deficit, and as the scope for new borrowing would probably be sharply limited, a large fiscal consolidation would still be needed – as would the deflation of wages to tackle the external deficit. A default would also cause potentially unpredictable financial contagion effects.

- **Exiting the Eurozone without default.** In this scenario, Greece would leave the Eurozone and engineer a substantial devaluation of a newly issued national currency. This would have the impact of improving competitiveness and boosting growth and government revenues. It would also leave Greece able to finance the budget by monetary means. But if Greece's debt remained in euros, then Greece's debt ratios would worsen significantly and the risk of default could increase. And if Greece attempted to redenominate its debt into a new national currency (to allow it to be inflated away) this would be considered a legal default. Meanwhile, local interest rates on the new currency would probably soar reflecting sharply higher inflation and inflation expectations.
- **Default and devaluation.** This combination potentially tackles all the issues. Default reduces the debt interest component of Greece's deficit, and exiting the Eurozone and devaluing allows monetary financing of the deficit and an improvement of the external balance. But the financial contagion effects would be very large and unpredictable both on Greece, its neighbours, and the rest of the world, and the political costs to Greece enormous. Investing in Greece could be subject to a very large risk premium for an extended period, not only preventing the government from borrowing abroad but also sharply raising the cost of capital for the Greek private sector. As in the previous case, local interest rates would also rise steeply.
- **Seeking external support for fiscal adjustment.** Greece could seek financial support as part of an adjustment programme aimed at tackling the fiscal deficit and external competitiveness problems. External loans would allow the fiscal adjustment to be less brutal and for the groups and sectors worst hit by internal devaluation to be compensated to a greater extent. The downsides to this approach are that the cost of the bailout would impact on borrowing costs in the core Eurozone countries (the likely donors), and that there would be a risk that the provision of support would encourage lax behaviour by the Greek authorities and possibly the seeking of bailouts by other troubled countries – the issue of moral hazard.

From a wider economic point of view, the best option is arguably the first, i.e. a strong unilateral adjustment effort by Greece. The other options all involve significant potential costs, and risk unpredictable chains of contagion.

## 1.4 Contagion effects of defaults and bailouts

There is no question that a Greek debt default would be a massive credit event. With €300 billion of debt outstanding, it would be the biggest sovereign default since at least the 1930s, dwarfing those in Russia

and Argentina. It would be on a scale comparable with the \$430 billion of corporate defaults seen in 2008 and could be expected to send a massive shockwave through credit markets and financial markets more generally – on a scale perhaps similar to that seen in the wake of the Lehman’s collapse in 2008Q4.

**Table 1 – Scale of recent debt defaults**

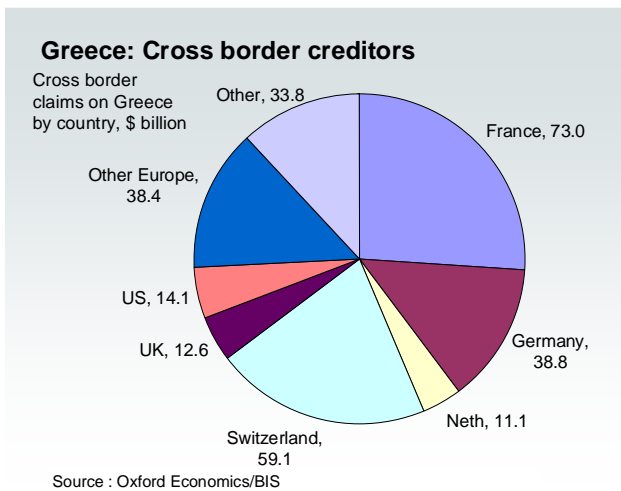
	US\$ billion
Russia 1998-2000	70
Argentina 2001-2002	100
Corporate bonds 2008	433
Corporate bonds 2009	573

Source: Oxford Economics

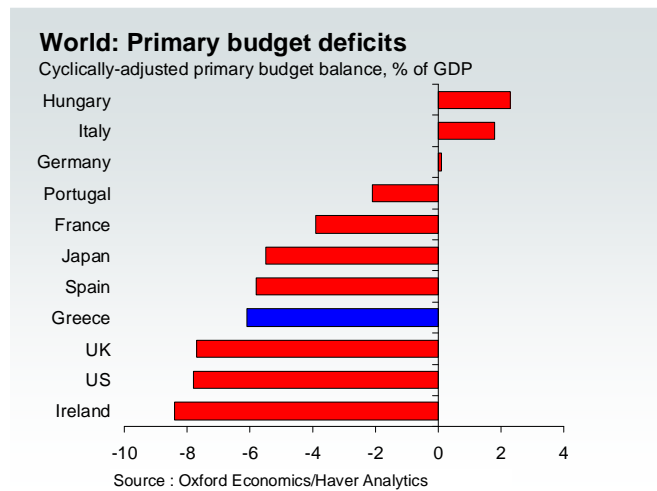
We would expect a default to impact on the Eurozone and global economies through the following channels –

- **Contagion and confidence effects.** The prices of riskier financial assets including equities, corporate bonds and emerging market debt could be expected to drop sharply. This would generate wealth losses for firms and households and raise borrowing costs, impacting on consumer spending and on investment.
- **Bond yield effects.** Government bond yields would likely rise significantly for weaker/peripheral countries in the Eurozone, although flight-to-quality effects might hold down ‘core’ yields e.g. in Germany.
- **Bank losses.** The direct financial losses of bondholders could have a significant economic impact. Bondholders are largely Eurozone banks, who hold an estimated €187 billion of Greek public debt. Should these holdings be written down by, say, 60% these banks would be facing losses of over €100 billion – on top of the €600 billion or so in writedowns already suffered by these banks during the financial crisis. Such additional losses could be enough to cause a second wave of serious credit restriction by European banks, with knock-on effects on the real economy.
- **Precautionary de-stocking.** We would expect the shock effect of a Greek default to induce substantial precautionary de-stocking by firms. In 2008Q4, the sharp rise in financial stress levels was accompanied by massive de-stocking by firms – amounting in the case of the US to around 1% of GDP in the next three quarters. A repeat of the de-stocking on this scale is unlikely given the lower starting point for stocks, but a significant negative effect would still be very likely.
- **Induced fiscal tightening.** An additional risk in the case of default by an advanced economy such as Greece is that it could lead to investors questioning the safety of government bonds as an asset class. Normally a major credit event would provoke flows into ‘safe’ government bonds, but in this case, there is a risk that investors might instead decide to pare back their holdings. This risk is increased by the currently weak fiscal positions of many of the major industrial countries including the US, UK, and Japan. The result could be that governments with large deficits are obliged to move faster to correct these, adding to the negative effects on global growth.

**Chart 9: Greece external creditors**

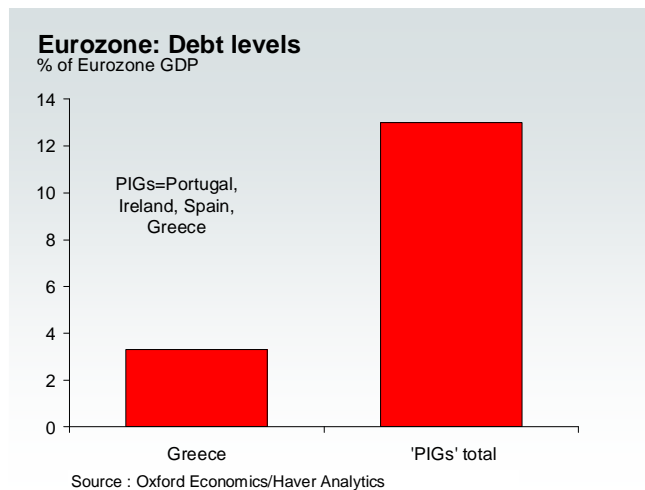


**Chart 10: World primary budget deficits**



Set against the potential massive negative effects of financial contagion, the costs of a bailout look, at first glance, limited. Greece's total public debt of €300 billion amounts to just over 3% of Eurozone GDP, so that its absorption as part of a bailout by the stronger Eurozone countries looks manageable. The cost of the bailout would be likely to fall disproportionately on Germany, but even if Germany shouldered half the cost, its public debt ratio would only rise about 6% of GDP – not insignificant, but not enough to send the bond yields of the Eurozone's benchmark credit soaring either.

**Chart 11: Eurozone debt levels**



The problem is that it is unclear whether or not a bailout could in fact be limited to Greece. Should Greece receive assistance, there would be substantial pressure for support to be extended to other weaker credits as well – perhaps including countries outside the Eurozone e.g. in eastern Europe. Firstly, guaranteeing Greece's debts could have the perverse effect of sucking funds out of the debt markets of other weak credits, pushing up yields and prompting fiscal problems. Secondly, a Greek bailout could create incentives for fiscal misbehaviour by other countries in the hope of getting similar assistance. And

with such a bailout probably needing to be approved by Eurozone governments by majority voting, some countries might even try to make an extension of support beyond Greece part of the deal.

If the bailout were to spread, the costs would rise rapidly. The combined public debt of the so-called 'PIGs' – Portugal, Ireland, Greece and Spain - is around €1.2 trillion, or 13% of GDP. A bailout on this scale could have significant effects on Eurozone borrowing costs. If Germany were to foot the bill for half this total, its public debt ratio would rise from 71% of GDP to 96% of GDP, enough to potentially push up bund yields enough to have significant economic consequences

## 1.5 Estimation results

Having discussed the channels of economic impact of different scenarios for Greece, we now present estimation results using the Oxford Global Model in order to better illustrate the relative importance of different factors and to examine the potential upsides and downsides of various policy choices.

For this purpose we ran three different scenarios –

- A unilateral fiscal adjustment by Greece
- A default and devaluation scenario, in which Greece leaves the Eurozone.
- A bailout scenario in which stronger Eurozone countries assume the debt of Greece.

The assumptions underlying the above scenarios were fed into the Oxford Global Model and run over the period 2010-2012, assuming in all cases that the retrenchment/default/bailout takes place at the beginning of 2010.

In the first case, we assume Greece attempts to cut the budget deficit by more than in our baseline forecast, which assumes a 5.2% of GDP deficit in 2012. Instead, we adjust government spending to target a deficit of 2.8% of GDP by 2012, in line with the recently published plans of the government. This involves reducing government spending by around €18 billion or 15% by 2012.

In our estimation results, the budget deficit does not fall to the targeted 2.8% of GDP in 2012, remaining instead at just under 4% of GDP because the adjustment process depresses economic activity, feeding into lower government revenues and higher unemployment payments. GDP is some 2.9% lower than in our baseline forecast by 2012.

Indeed a striking feature of our results is that GDP outcomes are much worse than in the government's plans. While the authorities expect growth of -0.3%, 1.5% and 1.9% in 2010-2012 our estimations point to an outcome of -2.7%, -0.2% and -0.1%. Unemployment rises to around 14% by 2012, compared to 10.5% in the government's plans. Such an outcome could raise serious questions about the political and social sustainability of the fiscal adjustment process.

There is some progress on the necessary 'internal devaluation' with average earnings 6% lower and the CPI 4% lower than in the baseline. However the current account balance only improves by 0.7% of GDP compared to the baseline forecast, with the deficit remaining at 9% of GDP. This implies that Greece would still face the need to achieve considerable further external adjustment even after undertaking the large fiscal adjustment we assume.

**Table 2 – Estimation results, unilateral fiscal consolidation**

<b>Estimation results - unilateral fiscal consolidation</b>							
<i>% differences from base</i>							
	<b>GDP</b>	<b>ET</b>	<b>CPI</b>	<b>ER</b>	<b>BCU%</b>	<b>RLG</b>	<b>GB%</b>
2010	-2.2	-0.8	-0.3	-0.9	0.4	-0.1	1.2
2011	-2.3	-1.2	-1.8	-3.1	0.4	-0.8	1.3
2012	-2.9	-1.7	-3.9	-5.6	0.7	-0.5	1.4
<i>% growth rates/levels</i>							
2009	-1.1	-1.1	1.2	6.6	-11.8	5.2	-12.7
2010	-2.7	-2.2	1.7	-0.7	-12.5	6.2	-9.3
2011	-0.2	-0.5	-0.9	-2.5	-11.3	5.7	-5.9
2012	-0.1	-0.5	-0.8	-2.5	-8.9	5.0	-3.8

Key: GDP: Annual GDP growth %, ET: Employment % change ER: Average earnings, % change BCU%: current account balance, % GDP, RLG: 10-year bond yield GB%: Government fiscal balance, % GDP. RLG, BCU%, GB% are all reported as % point differences from base in the top half of the table.

In the default and devaluation case we assume Greece repudiates its public debt, leading to a 60% writedown in the value of the debt (broadly in line with historical episodes). We further assume Greece creates a new currency which is devalued by 20% against the euro, i.e. by enough to restore external competitiveness broadly to 2001 levels.

This case also involves a complex set of assumptions relating to the effects of default on Greece and the wider Eurozone and global economies –

- Greek equity prices fall 35% in 2010Q1 and remain 15% below baseline through to the end of 2012. Greek business engages in precautionary destocking to the tune of 1% of GDP more than in the baseline in 2010-2011.
- In the Eurozone, stock prices fall 20% initially and remain 7% below baseline at the end of the forecast period. Destocking amounting to 0.5% of GDP more than in the baseline takes place in 2010-2011. Average bond yields in the Eurozone rise by around 1% as an increased default risk premium is built in. Eurozone private sector financial wealth is reduced by the value of the write down of Greek debt.
- Globally, fiscal policy is tightened in the US, UK and Japan by 1-1.5% of GDP more than in the baseline from 2010-2012. Equity prices fall an initial 15% and remain 7% lower than in the baseline scenario and there is a rise in corporate borrowing costs of 1.5%.

The results of this scenario are very different from the first scenario. GDP shrinks more rapidly in Greece initially due to the financial disruption and negative confidence effects created by default and devaluation. Activity is also hit by a steep rise in interest rates as the devaluation increases inflation sharply to over 8% in 2010; short-term interest rates rise to almost 10% in 2011 before easing back in 2012.

GDP does start to grow again in 2012, as the effects of devaluation come through, but GDP is almost 4% lower at the end of the estimation period than in the baseline. Employment is 3% lower at the end of 2012 than in the baseline, worse than in the fiscal consolidation scenario. This suggests that the devaluation & default choice would not necessarily free Greece from the risk of serious social tensions.

**Table 2 – Estimation results, devaluation & default**

Estimation results - devaluation & default							
% differences from base							
	GDP	ET	CPI	ER	BCU%	RSH	GB%
2010	-1.8	-0.8	6.1	0.8	3.2	6.9	5.5
2011	-4.6	-2.6	10.2	2.4	5.1	7.8	3.0
2012	-3.9	-2.9	11.8	3.7	4.9	2.8	2.7
% growth rates/levels							
2009	-1.1	-1.1	1.2	6.6	-11.8	1.2	-12.7
2010	-1.9	-2.1	8.2	4.9	-9.6	7.9	-5.0
2011	-2.9	-1.9	4.6	2.4	-6.6	9.5	-4.3
2012	1.2	0.3	2.9	1.4	-4.7	6.3	-3.8

Key: GDP: Annual GDP growth %, ET: Employment % change ER: Average earnings, % change BCU%: current account balance, % GDP, RSH: Short-term interest rate GB%: Government fiscal balance, % GDP. RSH, BCU%, GB% are all reported as % point differences from base in the top half of the table.

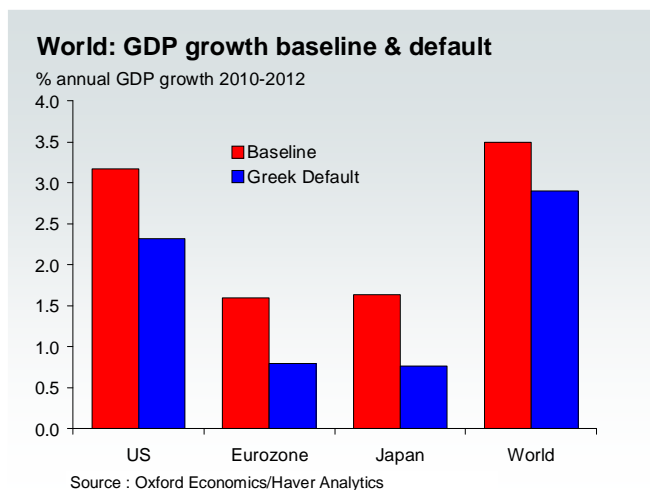
In terms of budget and external adjustment, the removal of the interest component of the deficit via default helps narrow the budget deficit to 5% of GDP in 2010 and the combination of higher inflation and a recovery in growth in 2012 brings the deficit lower still by 2012, to just under 4% of GDP. The current account deficit also improves significantly, to below 5% of GDP by 2012. Overall, the estimations suggest devaluation and default might help Greece meet its external adjustment goals better than fiscal consolidation, but at the cost of serious economic disruption and a bigger drop in output.

Our estimations suggest the global effects of a Greek default could be considerable. As a result of weaker equity prices, higher borrowing costs, reduced business confidence, lower world trade and faster fiscal retrenchment, GDP growth in the major economies slows considerably compared to our baseline scenario. GDP growth in the major economies is around 1% per annum slower in 2010-2012 than in our baseline forecast, suggesting a shock that would be a major constraint to global economic recovery.

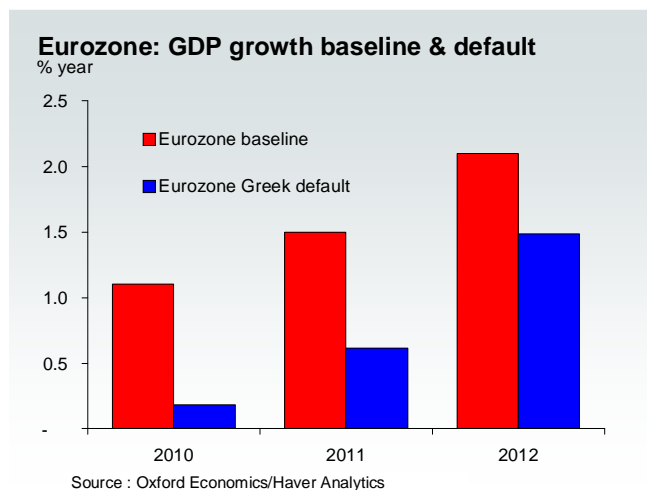
The final scenario we consider is the case of a bailout. We model this as Germany and the other Eurozone members taking over Greece's debt obligations of €300 billion, with 50% of the obligations taken by Germany, 30% by France and the remainder spread among the other member states. Greece is obliged to engage in fiscal retrenchment in return, albeit at a less drastic pace than in our first scenario, given the external support.

This results in German bond yields rising by around 0.1%, with a rise in yields in the weaker Eurozone members of around 0.3%. But the impact on GDP growth in the Eurozone as a whole is small, with GDP just 0.1% below base in 2012. Greece on the other hand enjoys an improved growth performance with GDP up 1.3% versus baseline by 2012 thanks to slower fiscal cuts and lower interest rates.

**Chart 12: World growth baseline & default**



**Chart 13: Eurozone growth, baseline & default**



We also consider the effect of the bailout being extended to the other 'PIGs', meaning €1.2 trillion of debt being taken over by Germany and other Eurozone members. In this case, the effects on bond yields and growth at the Eurozone level are larger. German bond yields rise by around 0.4% compared to base, and this contributes to GDP in the Eurozone being around 0.5% lower in 2012 compared to the baseline. This result nevertheless still compares well with the impact on GDP seen in the case of a Greek default.

In this scenario, the outcomes for Greece are generally the most benign of the three scenarios. Little progress is made, however, on external adjustment, suggesting the possibility of renewed problems in the medium-term.

**Table 3- Estimation results, bailout of PIGs**

Estimation results - bailout of 'PIGs'							
% differences from base, Greece							
	GDP	ET	CPI	ER	BCU%	RLG	GB%
2010	0.7	0.3	0.1	0.3	-0.1	-1.8	2.0
2011	1.0	0.5	0.6	1.1	-0.2	-1.2	2.3
2012	1.2	0.7	1.5	2.3	-0.3	-0.4	1.3
% differences from base, Eurozone							
2010	-0.1	0.0	0.0	0.0	0.1	0.6	-0.1
2011	-0.3	-0.1	-0.9	-2.5	-11.3	0.7	-0.2
2012	-0.5	-0.1	-0.8	-2.5	-8.9	0.7	-0.2

Key: GDP: Annual GDP growth %, ET: Employment % change ER: Average earnings, % change BCU%: current account balance, % GDP, RLG: 10-year bond yield GB%: Government fiscal balance, % GDP. RLG, BCU%, GB% are all reported as % point differences from base in the top half of the table. PIGs=Portugal, Ireland, Greece & Spain

## 1.6 Conclusion

Greece's fiscal position has deteriorated to a dangerous degree as a result of a lengthy period of fiscal laxity, and the country also faces the need to significantly improve its external competitiveness. None of the policy options now open to the country look very attractive.

Within the Eurozone, Greece's position implies the need for a very severe fiscal squeeze and a sharp fall in relative wages, probably implying significant nominal wage cuts. Such a fiscal adjustment would, on the basis of our estimation results, lead to a very severe recession and a sharp rise in unemployment which would raise questions about the social sustainability of the adjustment package.

The recently published government adjustment programme appears to underestimate this risk. Indeed, the Greek economy is already showing signs of serious stress as a result of the financial pressures of the last few months - GDP fell by 0.8% in 2009Q4, and was down 2.6% on the year. The cyclical background for a programme of strong fiscal retrenchment is far from favourable, and deteriorating.

The 'nuclear option' of default and devaluation could, on the basis of our estimations, help to achieve the needed external adjustment. But it would come at a severe cost, in terms an initially worse recession and higher unemployment as a result of soaring interest rates and financial disruption. Moreover, Greece could also face financial isolation for a prolonged period and the political costs would be massive. Devaluation might also risk tipping Greece's banking sector into insolvency, given its high foreign debt.

There would also be potentially major financial contagion effects from a Greek default, which would be the biggest sovereign failure since the 1930s. Other weak sovereign borrowers could see their bond yields rise sharply, and even the major economies could be obliged to accelerate fiscal adjustments. There would also be a steep rise in the yields on other risky assets including corporate bonds, and falling equity markets. Eurozone banks would be hit very hard by losses on their holdings of Greek bonds.

All this, our estimation results suggest, would translate into a reduction in growth in the major economies of around 1% per annum from 2010-2012 compared to base, and for the world as a whole by 0.6%. A Greek default could prove a major constraint to global economic recovery.

Against this background the pressure for a bailout has been growing. Our estimations suggests that a bailout contained to Greece would only raise borrowing costs in the Eurozone by a modest amount and thus have only a limited impact on growth. But should the bailout spread to other weak Eurozone members – and perhaps beyond – the costs could quickly mount.

There has been considerable discussion in recent weeks about the legality of a Eurozone rescue of Greece, in the context of the so-called 'no bailout clause' of the Maastricht Treaty. In our view, this clause is probably not an insuperable obstacle to a bailout, if the political will exists. One avenue would be to use the exception that exists in the treaty for 'natural disasters or exceptional occurrences'. This would, however, require a qualified majority vote among the Eurozone members, and this need could perhaps be used as leverage by other troubled countries to extend the bailout to them. There could also be political



resistance among the donor countries given that some of them also face stretched public finances. Another possible route would be to involve the IMF, although the Eurozone authorities to date appear reluctant to consider this, seeing Greece as an ‘in-house’ problem.

A major problem with the bailout route is of course that of ‘moral hazard’ – the risks of provoking fiscal misbehaviour among other member states and of Greece using the bailout to avoid the necessary adjustment. The latter risk looks especially large given Greece’s recent record and as a result it seems likely that very strong conditionality would be needed as part of a bailout deal. Indeed, some EU sources have suggested that a ‘temporary suspension of fiscal sovereignty’ might be needed – an option that might prove unacceptable to Greek society.

Over the last two weeks, there have been a series of meetings of EU leaders to discuss the Greek problem. So far, the EU authorities have taken a relatively hard line by stopping short of granting explicit financial support to Greece and instead pushing hard for further and deeper fiscal adjustment. This may reflect concerns among EU governments that a bailout would be difficult to sell to their domestic electorates. The situation has not been helped by recent revelations that Greece used swap transactions to artificially reduce its debt levels in the past.

Should Greece struggle to refinance itself in the months ahead, some kind of bailout to avert default still looks the most likely outcome, but certainly cannot be taken for granted. The key risk period could be April-May, when some €23 billion of Greek debt falls due.