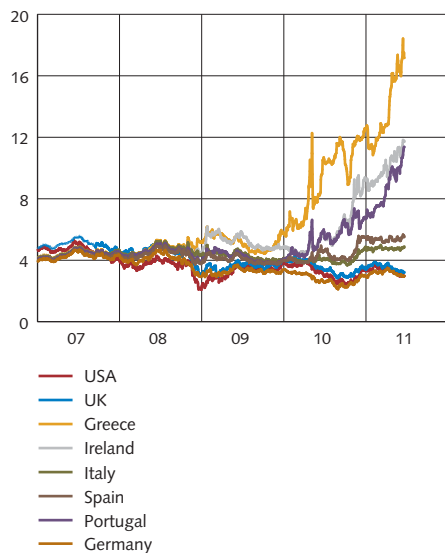


■ The sustainable development of public debt?

Figure A1. Government bond rates, 10 years to maturity
Per cent



Source: Reuters EcoWin

The fiscal situation in a number of countries gives great cause for concern. Considerable budget deficits over several years, a development that was accentuated during the financial crisis, have led to the build-up of large and growing debts. The development of debt in several countries has been deemed to be so problematic that it has become impossible for these countries to borrow on the market and acute support measures from the EU and IMF have thus become necessary. However, these support measures, like debt write-offs and other measures aimed at dealing with the acute problems, cannot achieve the long-term sustainable development of debt. For this, structural and institutional reforms to improve long-term growth and fiscal discipline will be needed.

By the end of 2009, market participants had already started to become concerned over the ability of several heavily-indebted European countries to repay their debts. This was reflected in the interest rates for these countries' government bonds (see Figure A1). In an attempt to stabilise developments, Ireland, Greece and Portugal were granted economic support from the EU and IMF in 2010 and 2011.¹⁴

During the spring, difficulties in implementing the tighter policies required by the support programmes have become increasingly apparent. Extensive protests and governmental crises have taken place in several countries, including Greece. The country's inability to comply with the conditions for the support programme has led to new support payments being questioned, and the risk that Greece will shortly default on its payments has increased.

At present, the market pricing of certain euro area countries' government bonds reflects the relatively high likelihood that these countries will have to renegotiate their debts. The main factor affecting a country's ability to fulfil its debt commitments is its ability to pay the interest on its public debt.

Interest rates, growth and the primary balance determine the development of debt

The development of a country's debt can be expressed as

$$D_t = (1+r_t)D_{t-1} - P_t \quad (1)$$

in which D_t is debt¹⁵, r_t is interest and P_t is the primary balance (that is, the difference between revenue and all expenditure except for interest rate payments). In other words, the debt will grow as long as the country's interest expenditure is higher than its primary balance. If we divide equation (1) by GDP and subtract the the preceeding year's debt ratio d_{t-1} the change in the debt ratio from one year to the next can be expressed as

$$\Delta d_t = \lambda_t d_{t-1} - p_t \quad (2)$$

¹⁴ See also the Financial Stability Report 2011:1, Sveriges Riksbank.

¹⁵ This refers to gross debt, that is all debts requiring interest payments and amortisations.

in which $\lambda_t = (r_t - g_t)/(1+g_t)$ can be called the interest-growth differential.¹⁶ From this, it can be seen that if the average interest that a country needs to pay on its public debt exceeds the growth rate (g) in its economy, that country will need to have a positive primary balance to prevent its debt ratio from increasing.

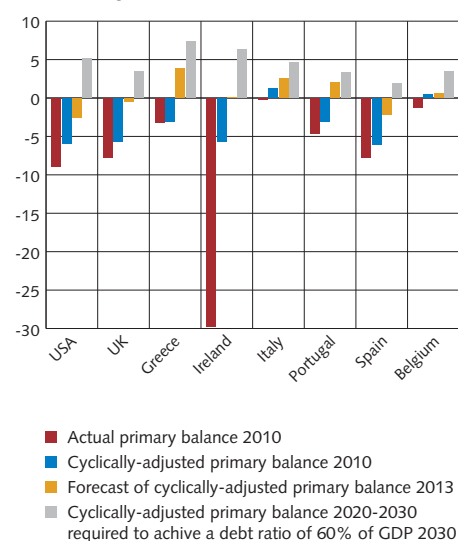
In the developed economies¹⁷ the average difference between the interest rate and GDP growth was 1.6 percentage points between 1981 and 2008, but there has been great variation both over time and between countries.¹⁸ The interest-growth differential tends to be greater when public debt is higher. This can be explained by a higher public debt tending to lead to higher long-term interest rates and lower growth due to increased vulnerability to future crises, increased risk for future inflation and debt write-offs, increased uncertainty over future developments and a higher expected tax levy on return from investments. Estimates indicate that the interest-growth differential when indebtedness exceeds 90 per cent of GDP is about 2 percentage points higher than it is when indebtedness is between 60 and 90 per cent of GDP.¹⁹

Highly-indebted countries that are forced to pay high interest rates but that do not also have a high level of growth must have a high primary balance merely to be able to stabilise their central government debt as a proportion of GDP. A simple rule of thumb that follows from equation (2) is that, when the debt ratio is 100 per cent, the primary balance needs to be at least as large as the interest-growth differential to prevent the debt ratio from increasing further. The relationships that seems to exist between the level of debt and the interest-growth differential suggests that highly-indebted countries have reason to reduce their indebtedness to avoid even higher interest charges in the future. In most cases, this is because indebtedness has increased strongly in recent years, and because a large part of current interest charges still derive from loans taken when indebtedness (and thus interest rates) was significantly lower.

The sustainable development of debt may require large surpluses for many years

It follows from this reasoning that several countries will need large surpluses in their primary balances for many years if debt write-offs are to be avoided. In regularly updated examples, the IMF shows how much the primary balance needs to be improved for a number of different countries to achieve a public debt ratio of 60 per cent of GDP by 2030.²⁰ The budget consolidation strategy that the IMF uses as a base scenario requires that the primary balance is gradually improved in the years leading up to 2020, a level which is then maintained until 2030.²¹ Figure A2 shows the starting point in 2010, as well as the IMF's

Figure A2. Fiscal tightening requirements
Percentage of GDP



Note. Primary balance = budget balance - net interest income. Cyclically-adjusted primary balance is primary balance adjusted for cyclical factors.

Source: IMF Fiscal Monitor April 2011

¹⁶ The interest growth differential is sometimes also called the growth-adjusted interest rate.

¹⁷ According to the IMF's definition, which is mainly based on countries' GDP per capita, export diversification and degree of integration into the global financial system. For details, see <http://www.imf.org/external/pubs/ft/weo/2007/01/data/groups.htm#cc>.

¹⁸ IMF Fiscal Monitor November 2010.

¹⁹ IMF Fiscal Monitor November 2010.

²⁰ A debt ratio below 60 per cent is considered to be manageable over the long-term for developed economies, and is one of the requirements placed by the EU Stability and Growth Pact on member states.

²¹ IMF Fiscal Monitor April 2011.

forecast for 2013 and the primary balance that must be attained by 2020 under the budget consolidation strategy. The example is based on an interest-growth differential of 1 percentage point for all countries as of 2015, which corresponds approximately to the average for the developed economies since 1991. The difference between the actual and the structural primary balance 2010 is the improvement calculated to follow on automatically from the growth forecasts (in Ireland's case, a significant part of 2010's deficit is due to the capital contributions granted to domestic banks).

Greece, with a public debt ratio of 142 per cent, would need to successfully improve its primary balance as a percentage of GDP by 10 percentage points until 2020, and subsequently maintain a level of about 7.4 per cent. Ireland, which has a lower debt ratio (96 per cent), does not need to reach such a high primary balance as Greece, but has, on the other hand, a total fiscal tightening requirement of just over 12 percentage points, as it is starting from a position with such a high deficit. According to the calculations, Portugal, which also recently became the subject of a support programme, needs to carry out budget tightening exceeding 6 percentage points.

As regards the primary balance that needs to be maintained over the longer term and the total policy tightening required to reach this position, the public finance situation is also very serious in the United States and United Kingdom. However, as they have their own currencies and, particularly in the United States' case, there is a generally attractive market for the country's debt instruments, the risk that these countries will find themselves in an unsustainable financing situation is less serious than it is for the fiscally weak countries of the euro area.

The countries that have not yet had to apply for support have better conditions for attaining the sustainable development of debt

Apart from Greece, Ireland and Portugal, which have already been the subjects of support measures from the EU and IMF, attention has recently been focused on weaknesses in the public finances of Spain and Italy. According to the IMF's example, with a debt ratio of 60 per cent in 2010, Spain would need to improve its primary balance by 8 percentage points to about 2 per cent of GDP, while the corresponding tightening for Italy (with a debt ratio of 119 per cent) would have to amount to just over 3 percentage points to attain a primary balance of close to 5 per cent of GDP.

A few possible obstacles that may prevent the countries in question from being able to live up to the budget consolidation strategies they have undertaken could include a lack of ability to improve the primary balance in the proposed magnitude, the increase of the interest-growth differential beyond the assumed level of 1 percentage point, and the increase of the debt ratio due to support to domestic banks (as in the case of Ireland).

Unlike Portugal, where policy tightening would have to lead to a primary balance that is close to 5 percentage points higher than the

average during the period from the introduction of the single currency to 2007, the primary balance that will need to be attained by Spain and Italy is not entirely outside past experience (see Table A1).

Table A1. Key assumptions for the development of debt
Percentage of GDP unless otherwise specified

| | Greece | Ireland | Italy | Portugal | Spain | UK | US |
|--|--------|---------|-------|----------|-------|------|------|
| Debt ratio 2010 | 142 | 96 | 119 | 83 | 60 | 77 | 92 |
| Primary balance 2020–2030 for a debt ratio in 2030 of 60 % | 7.4 | 6.3 | 4.6 | 3.3 | 1.9 | 3.4 | 5.1 |
| Average primary balance 2000–2007 | -0.1 | 2.2 | 2.2 | -1.2 | 2.3 | -0.4 | -3.1 |
| Increases in pension and healthcare expenditure 2010–2030 | 3.5 | 2.0 | 1.4 | 4.2 | 2.1 | 4.2 | 6.2 |
| External debt share (percentage of total public debt) 2010 | 62 | 59 | 47 | 66 | 50 | 27 | 32 |

Note. The average primary balance refers to the years 2001–2007 for the United States. The external proportion of debt applies to the foreign-based share of the ownership of the country's public debt in the third quarter of 2010. In Greece's case, this refers to the share of marketable bonds, for other countries both marketable and non-marketable bonds.

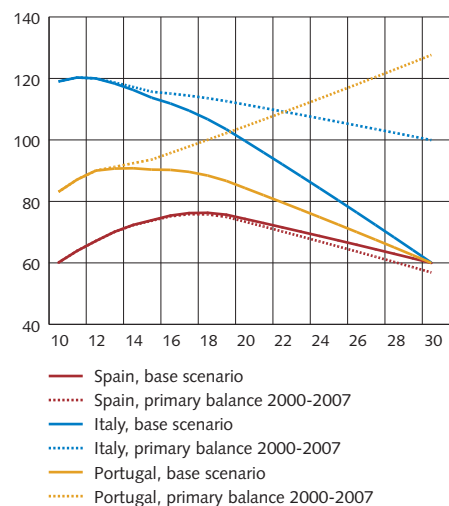
Sources: Joint BIS-IMF-OECD-World Bank External Debt Hub, IMF and the Riksbank

The calculations of the fiscal tightening requirements do not include the increases of pension and healthcare expenditure that can be expected in most developed economies over the decades ahead (see Table A1). Spain and Italy are also in better positions than Portugal in this regard, with differences of between 2 and 3 percentage points in estimated further fiscal tightening requirements.

Figure A3 shows the development of debt for Portugal, Spain and Italy, under the assumptions of the primary balance's development that form the basis of Figure A2, as well as the assumption that only the average primary balance will be achieved during the years 2000–2007 (see Table A1). As a benchmark, Figure A4 shows the corresponding debt development paths for the euro area as a whole, the United States and the United Kingdom. Spain's relatively strong historic primary balance indicates that a return to this level would give a lower debt ratio than in the base scenario, while Italy would have to face a significantly higher debt ratio. However, unlike in Portugal, the primary balances in Spain and Italy are strong enough to stabilise and, in the medium term, reduce the debt ratio from the initial position in 2010.

However, should unease on the financial markets result in a higher interest-growth differential, the sustainability of the development of debt would also be jeopardised in Spain and Italy. This is illustrated in Figure A5, where an interest-growth differential of 3 percentage points, instead of 1 percentage point, is combined with the average primary balance in the period 2000–2007 (see Figure A6 for the equivalent development of the euro area as a whole, the United States and the United Kingdom).

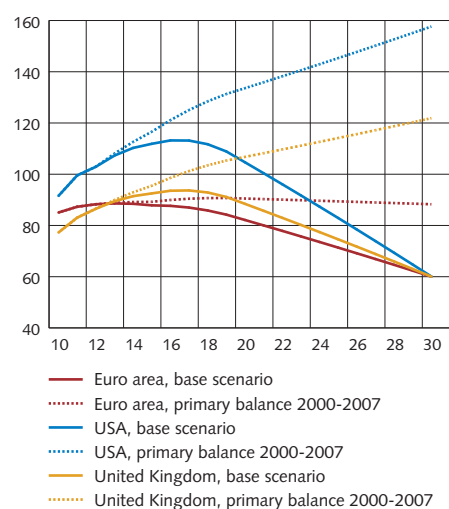
Figure A3. Development of debt with different primary balances
Per cent of GDP



Note. Base scenario according to the IMF's budget consolidation strategy to reach a debt ratio of 60 per cent by 2030. The broken lines represent the debt ratios if the base scenario's assumptions regarding the level of the primary balance to be achieved by 2020 are replaced by the average for 2000–2007.

Sources: The IMF and the Riksbank.

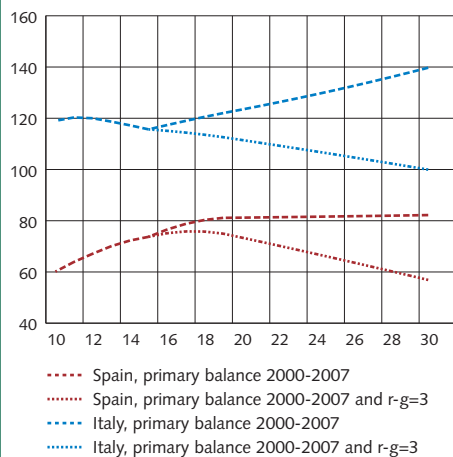
Figure A4. Development of debt with different primary balances
Per cent of GDP



Note. Base scenario according to the IMF's budget consolidation strategy to reach a debt ratio of 60 per cent by 2030. The broken lines represent the debt ratios if the base scenario's assumptions regarding the level of the primary balance to be achieved by 2020 are replaced by the average for 2000–2007.

Sources: The IMF and the Riksbank.

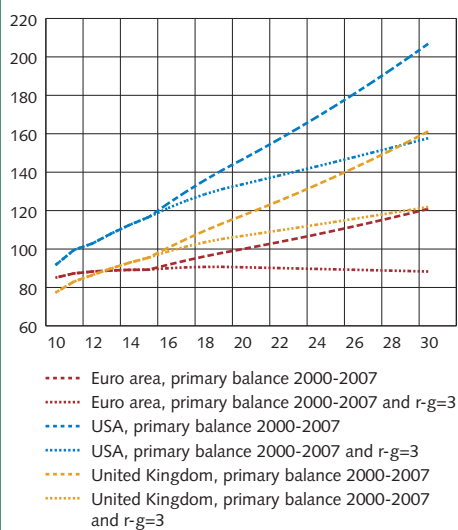
Figure A5. The development of debt with a higher interest-growth differential
Per cent of GDP



Note. The debt ratio of the base scenario's assumption of the level of the primary balance in 2020 is replaced by the average for 2000–2007, together with an interest-growth differential from 2016 of 3 percentage points instead of 1 percentage point.

Sources: The IMF and the Riksbank.

Figure A6. The development of debt with a higher interest-growth differential
Per cent of GDP



Note. The debt ratio of the base scenario's assumption of the level of the primary balance in 2020 is replaced by the average for 2000–2007, together with an interest-growth differential from 2016 of 3 percentage points instead of 1 percentage point.

Sources: The IMF and the Riksbank.

However, there is reason to expect that the interest-growth differential would fall below this high level if a credible budget consolidation strategy could be successfully launched.

At the same time as the tighter policy needed to achieve the sustainable development of debt may decrease borrowing costs and increase efficiency in the use of public resources, these measures may be expected, in the short term, to slow real growth down by restraining domestic demand. An important contribution to real growth would then have to come from exports, and this requires low price increases, which would limit nominal growth. With nominal interest rates that are determined by circumstances in the euro area as a whole, in addition to risk premiums, this would thus lead to the risk of a relatively large interest-growth differential. This should have a greater impact on countries with higher initial debts, that is a greater impact on Italy than on Portugal, and least on Spain, which has a more modest initial debt ratio.

For export-led growth to contribute to a low interest-growth differential, the fiscally weak countries of the euro area need to reverse the negative trend in competitiveness as regards other euro area countries, as shown by the development of unit labour costs (see Figure A7). As yet, such a reversal can only be seen in Ireland and, to some extent, in Spain.

In the political considerations that determine whether an indebted country moves towards debt write-offs of some kind, the proportion of the public debt held outside the country can also play a role. The higher this external indebtedness is, the lower the proportion of the direct capital and interest income losses that would impact that country's voters in the event of a debt write-off.²² In comparison, those countries that already have support programmes stand out with their relatively high proportions of external debt (see Table A1). The external proportion of debt in Portugal, Ireland and Greece is about 60 per cent or more, while it is just below 50 per cent in Spain and Italy and even lower in the United Kingdom and United States.

To sum up, a number of important differences between the countries that have so far had to apply for support from the EU and IMF and other countries with fiscal problems argue against a widening of the group of countries requiring assistance. For Spain and Italy, a return to the average primary balance for the period from the introduction of the euro to the year before the financial crisis would be enough to make their debt ratios start to decrease, while, for Portugal, this would mean that the debt ratio would continue to rise.²³ The expected increases of pension and healthcare expenditure in the decades ahead are also significantly smaller in Spain and Italy.

All in all, there are thus slightly better conditions for Spain and Italy to manage the development of debt than there are in the countries that have already had to apply for support from the EU and IMF. However, the

²² D. Gros, "External versus domestic debt in the euro crisis", Policy Brief nr 243, Centre for European Policy Studies, 2011.

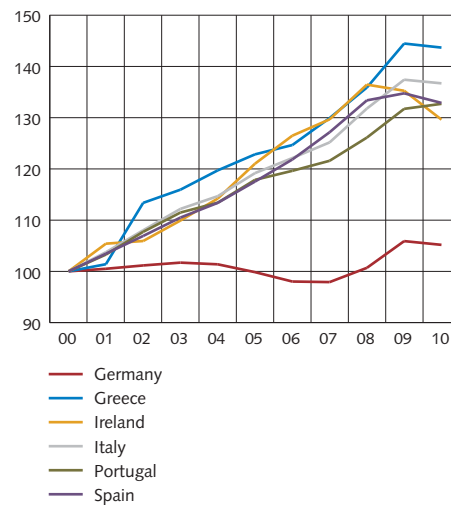
²³ However, for Spain and Italy, a return to a primary balance equivalent to the levels seen in 2000–2007 would not be enough to comply with the required level of debt under the growth and stability pact until after 2030.

significance of borrowing costs means that persistent demands for higher interest rates as a result of unease over the sustainability of a country's debt development may become self-fulfilling.

Reforms will be necessary to reduce the risk of future fiscal crises

For those countries that already are or will become subject to debt write-offs, support programmes or other measures, it should be clear that these measures are solely intended to manage the acute problems, and cannot replace the structural and institutional reforms needed to improve long-term growth and fiscal discipline. Only through such reforms will it be possible to reduce the risk of new fiscal crises in the future.

Figure A7. Unit labour costs
Index 2000 = 100



Source: OECD