No. 2 | 2010

Economic Commentaries

Public finances – the difficult path back to sustainable levels

*by Unni Larsen and Bente Støholen, both economists in the International department, Norges Bank**

NB NORGES BANK

* *The views in this article are the author's own and do not necessarily reflect the views of Norges Bank..*

Public finances – the difficult path back to sustainable levels

In order to curb falling output and employment resulting from the financial crisis, extensive monetary and fiscal measures were put in place by authorities the world over. Many governments also recapitalised banks to strengthen their financial position. Combined with lower tax revenues and higher spending, partly related to social security payments, this has led to substantial fiscal deficits and a marked increase in public debt as a percentage of GDP in most advanced economies.

A higher debt ratio[1] restricts a government's leeway in fiscal policy as interest expenses will make up a larger share of total expenses. It also reduces a government's ability to use fiscal policy in response to future economic downturns. There is a risk that persistently high debt ratios will push up the long-term interest rate level, as has been the case for Greece, Portugal and Spain in recent months. The current debt situation in advanced economies indicates a need for fiscal consolidation.

The relationship between public debt, fiscal deficits, economic growth and interest rates can be described using the following formula for the accumulation of public debt:

$$D_t = D_{t-1} + r_t \cdot D_{t-1} - BP_t$$

where D is total gross public debt, r is the nominal interest rate and BP is the primary balance, or the fiscal balance excluding interest expenses on debt outstanding[2]. Current debt is increased by interest expenses on previously accumulated debt and is reduced by the surplus on the primary balance.[3] Translated into a debt-to-GDP ratio, the change in the ratio can be expressed as follows:

$$\Delta \frac{D_t}{Y_t} = \frac{(r_t - y_t)}{(1 + y_t)} \cdot \frac{D_{t-1}}{Y_{t-1}} - \frac{BP_t}{Y_t}$$

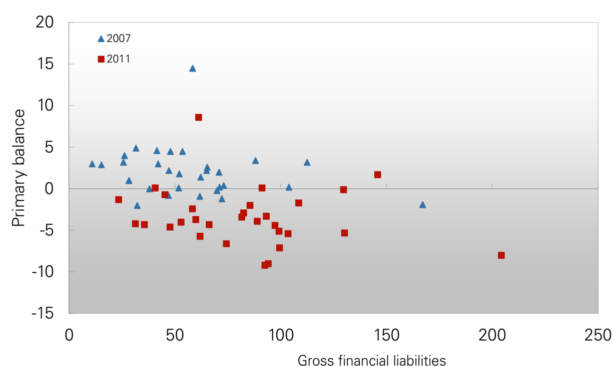
where Y is nominal GDP and y is nominal GDP growth.

1 The debt ratio is defined here as the ratio of public debt to GDP. References to debt levels and debt ratios in this analysis refer to gross debt.

2 The primary balance is thus defined as general government tax revenues minus government consumption and investment spending.

3 In addition, public debt can change as a result of valuation changes, net acquisition of financial assets and changes in the value of debt in foreign currency. These factors are disregarded in this analysis.

Chart 1 General government gross financial liabilities and primary balance in OECD countries in 2007 and 2011. As a percentage of GDP



Source: OECD Economic Outlook 86

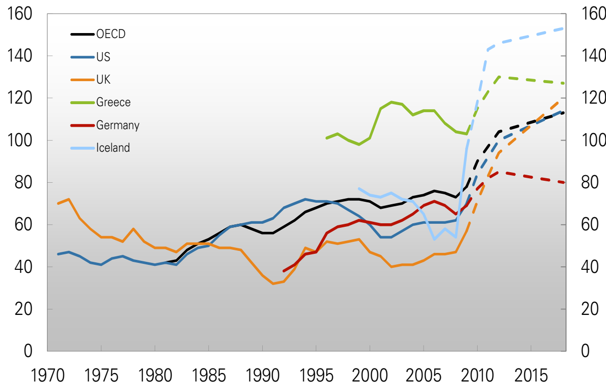
Changes in debt ratios are determined by interest expenses on debt, nominal GDP growth and the surplus or deficit on the primary balance. The component indicated by the circle is known as the snowball effect and depends on the difference between interest rates[4] and the nominal growth rate of the economy. If the interest rate the government has to pay on its debt is higher than the rate of economic growth, the debt ratio may increase even with a primary balance surplus. The higher the initial debt ratio is and the larger the difference between interest rates and the growth rate, the larger the surplus on the primary balance will have to be to compensate for high interest expenses.

Chart 1 shows the primary balance and gross debt as a percentage of GDP in the OECD countries in 2007 and 2011.[5] For the OECD area as a whole, the primary balance is estimated to decrease from a surplus of 0.4% of GDP in 2007 to a deficit of 5.4% of GDP in 2011. Gross debt is expected to rise from 73% of GDP to 104% of GDP in the same period. The interest rate paid by the authorities on debt outstanding is also expected to be higher than the growth rate in the period ahead. If fiscal consolidation is not implemented, the debt ratio will also continue to increase after 2011.

4 In this context, the interest rate level is the yield on long-term government bonds, often assumed to be 10-year government bonds.

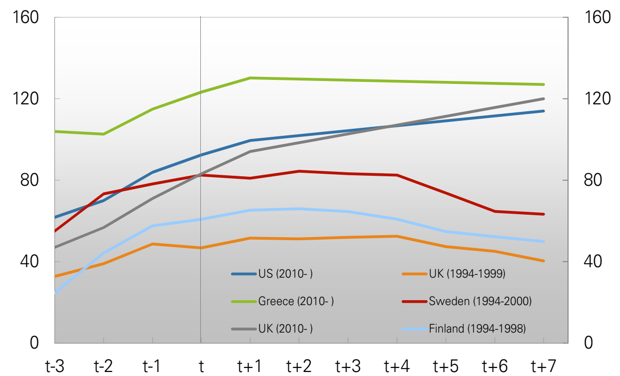
5 Projections from *OECD Economic Outlook* 86.

Chart 2 General government gross financial liabilities as a percentage of GDP. 1970 – 2017. Projections for 2009 – 2011 and 2017



Source: OECD Economic Outlook 86

Chart 3 General government gross financial liabilities as a percentage of GDP in the current consolidation period compared with earlier episodes.[1)]
t is the starting point for the consolidation period. Annual figures



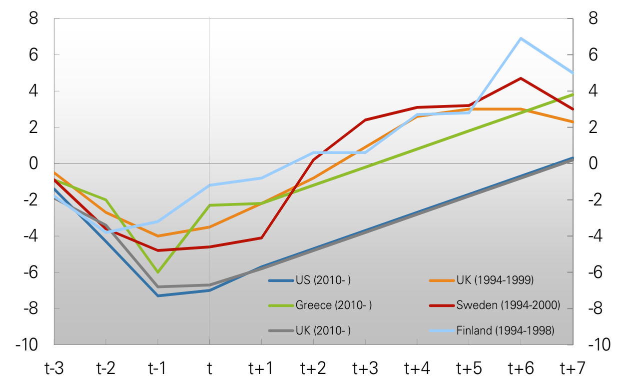
1) Projections for gross public debt in the US, Greece and UK for the current consolidation period follows the OECD's tecnical assumptions for the period up til 2017
Source: OECD Economic Outlook 86

The OECD has presented projections of the path of debt-to-GDP ratios after 2011.[6] The projections are based on a reduction in the structural primary deficit, or the primary balance adjusted for the level of activity in the economy and for one-off measures and temporary measures, of 1 percentage point of GDP per year. The duration of fiscal consolidation will depend on the country's financial position at the outset; for the countries with the largest fiscal deficits in 2011, fiscal consolidation will continue for a longer period.[7] Even with relatively substantial consolidation, the projections show that gross public debt will increase further, to 113% of GDP in 2017 for the OECD area as a whole (see Chart 2).

There are substantial differences across countries. For the UK in particular, it does not appear that the debt ratio will be stabilised with the fiscal consolidation assumed.

Based on the OECD projections, the BIS[8] has estimated the degree of consolidation required in these countries to reduce debt-to-GDP ratios to pre-crisis 2007-levels. A substantial annual improvement in the primary balance will be required to bring debt ratios back to 2007-levels. The US, for example, would require an average surplus on its primary balance of 4.3% of GDP for ten years to bring gross public debt down to 62% of GDP in 2020. This is equivalent to annual consolidation of about 2 percentage points of GDP over the period.

Chart 4 Underlying primary balance as a percentage of potential GDP in the current consolidation period compared with earlier episodes.[1)]
t is the starting point for the consolidation period. Annual figures



1) Projections for gross public debt in the US, Greece and UK for the current consolidation period follows the OECD's tecnical assumptions for the period up til 2017
Source: OECD Economic Outlook 86

An OECD study[9] examines 85 fiscal consolidation episodes[10] among 24 industrialised countries since 1978. The debt ratio was stabilised in about half of the 85 cases. Most of the episodes were of short duration and the total improvement in the structural primary balance was relatively modest[11]. Only three episodes were sustained for at least six consecutive years with an average consolidation of at least one percentage point per year. Two of these took place in Sweden – one in the early 1980s and one after the banking crisis in the 1990s – and one in the UK in the mid-1990s.

6 Se Appendix 1.A1 "A stylised medium-term scenario" in *OECD Economic Outlook* 86.

7 Those countries with a fiscal deficit of more than 6% of GDP are assumed to have a fiscal consolidation of 1 percentage point each year for six years from 2012. Those countries with a fiscal deficit of between 2½ and 6% in 2011 are assumed to have a fiscal consolidation of 1 percentage point of GDP each year for three years. Those countries with a fiscal deficit of less than 2½% of GDP in 2011 are assumed to have no fiscal consolidation beyond that provided by automatic stabilisers.

8 Cecchetti S.G., M.S. Mohanty and F. Zampolli (2010); "The Future of Public Debt", BIS Conference Draft

9 Guichard S., M. Kennedy, E. Wurzel and C. André (2007): "What promotes fiscal consolidation: OECD country experiences", OECD Economics Department Working Papers No. 553.

10 Fiscal consolidation is defined here as improvement in the structural primary balance.

11 The median duration of the episodes was 2 years and the median improvement of the cyclically adjusted primary balance through the period was 2.8% of potential GDP.

We have compared the challenges now facing the US, the UK and Greece with the periods of consolidation in Sweden, Finland and the UK in the 1990s. Fiscal consolidation in these countries was substantial and continued for a relatively long period. In Sweden and Finland, consolidation followed in the wake of banking crises. Sweden, Finland and the UK were able to stabilise debt ratios in the 1990s (see Chart 3). Chart 4 shows that these countries achieved a considerable improvement in the structural primary balance at an early stage in the consolidation period. These countries quickly returned the primary balance to surplus. In the current situation, where the interest rate level ahead is expected to be higher than economic growth, a rapid reduction in fiscal deficits will be required to halt the increase in debt.

Even though the fiscal consolidation in the OECD projections is not as substantial as the episodes in Europe in the 1990s, a number of factors indicate that consolidation in the current situation may be even more demanding. For many countries, debt ratios are higher today than for several decades. Since several countries will have to implement fiscal consolidation at the same time, net exports will probably contribute less to economic growth in this period. Since prospects for growth are moderate, it is unlikely that countries will be able to grow out of debt difficulties. At the same time, rising expenditure related to demographic developments will put additional pressure on government finances in this period[12].

12 According to projections by the EU Commission, age-related expenditure for EU countries as a whole will increase by 1.3 percentage points of GDP in the period 2011-2020 (see European Commission, "European Economic Forecast Autumn 2009").