Box 10

GOVERNMENT DEBT DYNAMICS AND PRIMARY BUDGET BALANCE DEVELOPMENTS IN THE EU MEMBER STATES

The Treaty on the Functioning of the European Union (Article 126(2) and Protocol No 12) require EU Member States to maintain a ratio of government debt to gross domestic product at market prices below the 60% reference value, unless the debt ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace. As a consequence of the recent financial and economic crisis, government debt ratios have increased rapidly since 2007 in nearly all EU Member States, reaching levels in excess of the 60% reference value in 14 Member States in 2010. According to the European Commission[1], for 13 of these Member States, the government debt ratio is projected to rise further until 2012, albeit at a slower pace that reflects the recovery and some planned fiscal consolidation measures.

The primary budget balance, defined as the budget balance net of interest payments, is a key determinant of government debt dynamics. Stabilising the government debt-to-GDP ratio and subsequently putting it on a declining path towards the reference value requires a sufficiently large primary surplus to be generated over an extended period of time if the interest rate-growth differential is positive, as conventionally assumed.[2] The expected substantial rise in age-related public expenditure over the coming decades will make this objective challenging, but also increasingly urgent.

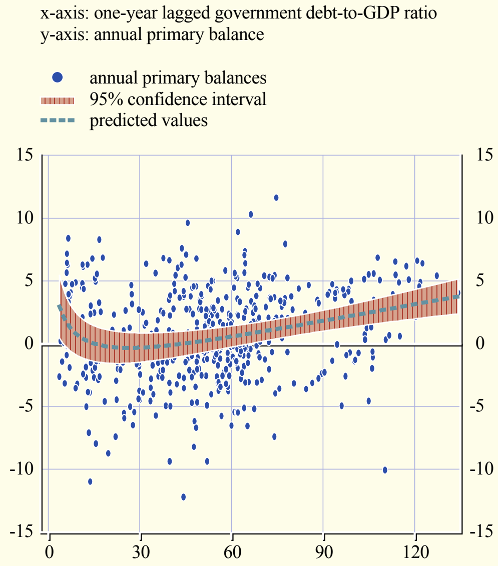
To put this challenge into perspective, this box takes a closer look at the historical behaviour of primary budget balances in EU Member States. Many EU Member States have indeed achieved significant primary surpluses over extended periods.[3] Several uninterrupted episodes of high annual primary surplus stand out: Finland maintained an average annual primary surplus of 5.7% of GDP over 11 years (1998-2008); Belgium sustained one at 5.4% of GDP over 11 years (1994-2004); the average primary surplus for Denmark was 5.3% of GDP over 26 years (1983-2008) and in Italy it stood at 5.1% of GDP over six years (1995-2000). Overall, ten EU Member States (Belgium, Bulgaria, Denmark, Ireland, Spain, Italy, Luxembourg, Netherlands, Finland and Sweden) recorded uninterrupted episodes of primary surplus for ten or more years, the lowest average annual surplus per episode being 1.6% of GDP. In cumulative terms up to 2009, the primary balance surplus stood at over 50% of GDP in seven EU Member States (Belgium, Bulgaria, Denmark, Ireland, Luxembourg, Netherlands and Finland).

As is the case today, some of these episodes of annual primary surplus were triggered by the need to reduce high government debt burdens in the aftermath of crises. Nevertheless, it is noteworthy that these EU Member States were successful in maintaining high primary surpluses over long periods. This signals that the strong commitment to sound fiscal policies needed to achieve such adjustments rested on broad political support. Moreover, the long duration of such

1 European Commission, "European Economic Forecast – Autumn 2010", *European Economy*, No 7, 2010.
2 For a discussion on measuring fiscal sustainability, as well as an overview of the impact of the financial crisis on the sustainability of euro area public finances, see Chapter 5 in van Riet, A. (ed.), "Euro area fiscal policies and the crisis", *Occasional Paper Series*, No 109, ECB, Frankfurt am Main, 2010.
3 Based on consistent time series across countries according to the European Commission's new AMECO definition. The longest available time series is for a period of 40 years, i.e. 1979-2009, in the case of Belgium, the United Kingdom and the Netherlands.

Chart A Primary balances and government debt across EU Member States

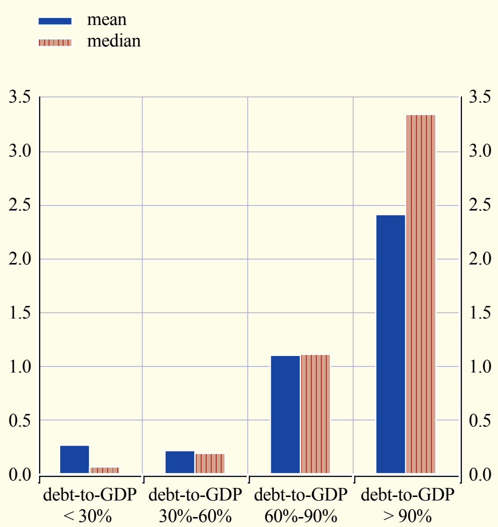
(as a percentage of GDP)



Source: ECB calculations based on the European Commission's AMECO data.

Chart B Annual primary balances by lagged debt ranges across EU Member States

(as a percentage of GDP)



Source: ECB calculations based on the European Commission's AMECO data.

episodes of primary surplus suggests that they were not the result of unsustainably high GDP growth rates. Indeed, in cyclically-adjusted terms, these episodes were even longer and the efforts made to achieve this were slightly larger (the lowest average annual surplus per episode was 2.1% of GDP).

In the current environment, the extent to which high debt ratios induce governments to adjust primary balances is an important question. The empirical work on the topic[4] suggests that governments in advanced economies do take the debt solvency constraint into account, albeit to varying degrees. Holding other relevant factors constant, governments tend to improve primary balances in response to rising debt-to-GDP ratios.

For the EU27, historical data for general government up to 2009 show that, above a low debt-to-GDP threshold, higher debt ratios are associated with higher primary surpluses (or lower primary deficits). Chart A shows actual values of the primary balances of EU Member States and fitted values as a function of one-year lagged debt-to-GDP ratios (the regression line is shown with a 95% confidence interval[5]).

4 See Bohn, H., "The Behaviour of US Public Debt and Deficits", *Quarterly Journal of Economics*, Vol. 113(3), pp. 949-963, 1998 and Mendoza, E.G., and Ostry, J.D., "International Evidence on Fiscal Solvency: Is Fiscal Policy "Responsible"?", *Journal of Monetary Economics*, Vol. 55(6), pp. 1081-1093, 2008.

5 The predicted primary balance is fitted using a fractional polynomial regression, which seeks the best-fitting power or combinations of powers from a set of possible choices. Standard errors are clustered by country. See Royston, P. and Altman, D., "Regression using fractional polynomials of continuous covariates: parsimonious parametric modelling", *Applied Statistics*, Vol. 43, pp. 429-467, 1994. Moreover, a regression analysis controlling for other factors driving primary balances across EU Member States (e.g. output gap, lagged expenditure/revenue ratios, nominal GDP growth rate, long-term interest rate, country and/or time-fixed effects) finds a similar reaction function of primary balances to lagged debt.

For this historical sample, the mean annual primary balance across EU Member States is 0.2% of GDP for debt-to-GDP ratios between 30% and 60%, and 2.4% of GDP for debt ratios above 90% of GDP (see Chart B for mean and median annual primary balances across various debt ranges). The much higher median for the high-debt group reflects the impact on the mean of a negative outlier, namely a one-off primary deficit of around 10% of GDP recorded by Greece in 2009. The median primary balance (not influenced by outliers) is 3.3% of GDP for the highest debt group compared with 0.1% of GDP for the lowest debt group.

Looking ahead, given higher government debt ratios and lower potential growth after the crisis, the primary surpluses necessary to stabilise and reduce debt ratios would need to be higher than in the past. Overall, the past experiences of EU Member States suggest that governments should be expected to rise to the challenge of moving to and sustaining high primary surpluses over an extended period, in particular, if the right incentives for fiscal discipline and a strengthened EU budgetary surveillance framework are put in place.