The use of GDP in fiscal ratio statistics

Introduction

Public sector fiscal statistics are often presented as ratios of national income.

In the United Kingdom (UK) public sector current budget deficit, net investment, net borrowing and net debt are all expressed as ratios of Gross Domestic Product (GDP).

The Government's mandate for fiscal policy includes *an aim for public sector net debt as a percentage of GDP to be falling in 2016-17*.

The Office for Budget Responsibility and other commentators often discuss changes over time to fiscal aggregates in terms of GDP ratios.

The European Union's equivalent statistical measures, for the Excessive Deficit Procedure under the Maastricht Treaty and the Stability and Growth Pact, are also presented as ratios between the measures and GDP.

The GDP figures used are based on the latest published estimates from the UK's National Accounts (ONS series identifier BKTL); while ratios of public sector current budget deficit, net investment and net borrowing are presented against the published values of GDP, the GDP denominator for the net debt ratio is reworked so that it represents the 12 months centred around the observation (the six months before it and six months after it).

This article explains the methodology used for the presentation of GDP ratios in UK public sector finances and in particular for the public sector net debt where a centred approach (requiring forecasts) is used.

Current budget deficit, net investment, net borrowing

Ratios of public sector current budget deficit, net investment and net borrowing are published against GDP in the UK monthly public sector finances. The GDP measure used in these ratios is non-seasonally adjusted GDP measured at current prices (i.e. not adjusted for inflation). This is consistent with the current budget deficit, net investment and net borrowing values which are also not seasonally adjusted and presented in current prices. The GDP figures used are the latest estimates from the UK's National Accounts (ONS series identifier BKTL).

Complications arise when the latest financial year has just been completed. At this point the financial year outturn for current budget deficit (along with the net investment and net borrowing) is available but only three of the four quarterly GDP observations are published. Until this remaining quarter becomes available (towards the end of June) a forecast of GDP is used.

The procedure for deriving GDP forecasts for periods when National Accounts outturn GDP is not available is described below.

The Office for Budget Responsibility (OBR) produces forecasts of the public finances twice a year (normally in March and December) within their Economic and Fiscal Outlook (EFO) publications. The EFO contains forecast financial year growth rates in nominal GDP (i.e. GDP in current prices).

These financial year growth rates are applied to ONS' published GDP outturn data for the corresponding quarters of the previous financial year to create forecasts for periods where there is no outturn available. So, for example;

The OBR forecast growth rate in nominal GDP for the financial year 2014/15 is applied to the outturn 2014q1 to produce a GDP estimate for 2015q1:

2015q1 = 2014q1 + (OBR forecast 2014/15 x 2014q1) /100

This GDP estimate for 2015q1 can then be used with GDP outturn data for 2014q2, 2014q3 and 2014q4 to produce an estimate of the GDP in 2014/15. This 2014/15 GDP estimate is then used in the fiscal ratios published in the monthly public sector finances in April, May and June 2015.

Net debt

Debt is a measure of how much the government owes at a point in time, whereas GDP is a measure of the country's economic activity during a period of time. Debt, represented as a proportion of a country's GDP, can be thought of as a measure of that country's ability to pay back their debt.

The ratio between public sector net debt and GDP is published in the UK monthly public sector finances. As with current budget deficit, net investment and net borrowing the GDP measure used is not seasonally adjusted and at current price (ONS series identifier BKTL), however, the GDP denominator for each observation of the debt ratio in the time series is reworked so that it represents the 12 months centred around the observation (the six months before it and six months after it).

As GDP is only published as a quarterly time series, monthly GDP is calculated by simply dividing the quarterly data by three.

The procedure for deriving GDP forecasts for periods when National Accounts outturn GDP is not available is again based on the OBR forecasts.

As an example consider the Public Sector Finances, December 2014 statistical bulletin published in January 2015. This release published an estimate of public sector net debt for end-December 2014 for the first time and alongside this an estimate of this public sector net debt as a percentage of GDP.

The GDP estimate required for the December 2014 net debt ratio covers the period from July 2014 to June 2015. In January 2015 the published outturn GDP was only available up until the third quarter (September) of 2014. In this case forecasts were needed for the fourth quarter (December) of 2014 and the first two quarters of 2015 (March and June).

The OBR forecast growth rate in nominal GDP for the financial year 2014/15 is applied to the outturn 2013q4 to produce an estimate for 2014q4:

2014q4 = 2013q4 + (OBR forecast 2014/15 x 2013q4) /100

Similarly,

2015q1 = 2014q1 + (OBR forecast 2014/15 x 2014q1) /100

And,

2015q2 = 2014q2 + (OBR forecast 2015/16 x 2014q2) /100

As a result of this estimation procedure, the debt ratio is provisional when first published and subject to later revision when outturn GDP becomes available.

European comparisons

The European Union's two key fiscal statistical measures are general government (central and local government in the UK) net borrowing (deficit) and consolidated general government gross debt.

These measures are required to be reported as part of the Excessive Deficit Procedure. Article 104 of the 1992 Maastricht Treaty obliges Member States to avoid excessive budgetary deficits. The Protocol on the Excessive Deficit Procedure, annexed to the Maastricht Treaty, and the related Stability and Growth Pact legislation, defines the measures of deficit and debt and the reference values required for compliance. These reference values are presented as ratios between the measures and GDP.

The Protocol on the Excessive Deficit Procedure defines the GDP series to be used as Gross Domestic Product at current prices which is the same GDP valuation as used in the ratios in the UK monthly public sector finances. There are, however, two differences. Firstly, the GDP data used in the Excessive Deficit Procedure statistics is seasonally adjusted (ONS series identifier YBHA). Secondly, the GDP data used in the Excessive Deficit Procedure statistics is that for the year in question and in the case of debt is not centred on the end of the year (which is the point in time to which the debt figure relates).