Box 8

THE RELIABILITY OF ESTIMATES OF EURO AREA GDP GROWTH AND ITS COMPONENTS

This box analyses the reliability of Eurostat’s first estimates of euro area GDP growth and its expenditure components. The analysis focuses on seasonally and working-day-adjusted quarter-on-quarter volume growth rates. The period under investigation extends from the first quarter of 2000 to the fourth quarter of 2005. Reliability is measured as the proximity of the latest available (current) results to the initial estimate. Three aspects are distinguished: the stability of the first releases (measured by the average absolute difference between the latest and the first releases), the potential bias (the average size of revisions) and the volatility of the first releases (the range of revisions).

The first “flash” estimates of quarter-on-quarter euro area GDP growth – which were introduced by Eurostat in May 2003 – currently have a country coverage of around 96% of euro area GDP and are released some 41 to 46 days after the end of the reference quarter. Expenditure breakdowns are published around 63 and 103 days after the quarter. Regular revisions are due to the incorporation of improved quarterly or annual source data, while benchmark revisions every five years reflect improved multi-year source data or methodological improvements. The last benchmark revision of GDP data based on the ESA 95 was in 2005. Revisions are also due to regular updates of the factors for the correction of seasonal and working-day variations.

The revision analysis leads to a relatively favourable assessment of the reliability of the first estimates of quarterly euro area GDP growth. From 2000 to 2005, the average absolute revision of the first euro area estimates was 0.11 percentage point. These estimates exhibit a small bias of 0.05 percentage point (i.e. there have been slightly more positive than negative revisions), which 1 GDP figures based on the current European System of Accounts (ESA 95) have been released since 1999. Revisions to 1999 data are not considered in the analysis as these were influenced by one-off effects due to the staggered introduction of the ESA 95 in the Member States. For more information on 1999/2000 revisions, see Box 4 – “Revisions to quarterly national accounts for the euro area” – in the August 2001 issue of the Monthly Bulletin.

Source: ECB calculations based on Eurostat data.
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The results for the euro area compare favourably with the United States, for which first estimates of GDP growth are somewhat less stable (an average absolute revision of 0.3 percentage point). However, the average quarterly GDP growth is higher in the United States (0.6%) and first estimates there are released around 30 days after the reference quarter.2

A revision analysis of the expenditure components provides further insight into the reliability of GDP growth estimates (see the table below). The first estimates of the expenditure components are less stable and more volatile than those of GDP. This is most pronounced for gross fixed capital formation (an average absolute revision of 0.6 percentage point) and for exports and imports (including trade between euro area countries). The highest bias is observed for gross

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1 Source: ECB calculations based on Eurostat data. 
2 Source: ECB calculations for the period from the first quarter of 2000 to the second quarter of 2005, based on data from the OECD Quarterly National Accounts (QNA) – Main Economic Indicators (MEI) Revisions Database, September 2005.
fixed capital formation (0.3 percentage point). The large revisions of some of these expenditure components have to be seen against the background of the high quarterly growth rates for those components. Moreover, the higher uncertainty that surrounds the expenditure components is cancelled out at the aggregate GDP level.

In summary, the first estimates of quarterly euro area GDP growth have been quite reliable and have only shown a small positive bias. GDP expenditure components, in particular gross fixed capital formation, as well as exports and imports, have been subject to larger revisions than total GDP. However, the lower reliability with respect to the expenditure components tends to cancel out at the aggregate GDP level, as do the revisions of national data in the euro area aggregates. Furthermore, it can be concluded that the introduction of the GDP flash estimates by Eurostat in 2003 has brought an improvement in timeliness, but not at the expense of any reduced reliability of euro area statistics.