

TRENDS IN EURO AREA POTENTIAL OUTPUT GROWTH

Estimates of potential output, which can be defined as the level of output which does not generate inflationary or deflationary pressures, are important for a number of purposes, including the conduct of monetary and fiscal policy and structural policy analysis.¹

The evolution of potential output depends on developments in a number of supply-side factors, including production inputs, such as capital and labour, and productivity. Potential output growth can change over time. Variations in potential output growth reflect first of all structural developments in supply-side factors, for example linked to demographic trends, institutional reforms or technological innovations. In addition, some supply-side changes can be of a cyclical nature, such as those which result from fluctuations in investment.

In order to assess the long-run rate of monetary growth which is compatible with price stability, the ECB published its estimate of trend potential output growth. This refers to the medium to long-term component of potential output growth, which does not take into account cyclical variations in potential output. The ECB estimated euro area trend potential growth to be in the order of 2-2.5% per annum.² Partly on account of the cyclical nature of potential output growth, it should be expected that potential growth estimates for specific years will fluctuate within or around this range over time.

The level of potential output cannot be measured directly, and in practice its estimation is characterised by a significant degree of uncertainty, reflecting at least in part imperfections in the measurement of the variables underlying the estimation framework. Thus, it is important to take into account alternative estimates of potential growth, as well as to complement the analysis with an assessment of various sources of information, including indicators of developments in the main factors of growth. An additional practical problem when estimating trend potential output growth is that there is no universally accepted approach to identify the structural and cyclical components of potential growth. Estimates of potential output growth tend to vary depending on the techniques used for estimation. For example, methods based on the so-called production function approach, which derives explicit estimates of the structural components of the factors of growth, tend to produce estimates which are significantly different from those based on simple time series methods (also called trend extraction filters), which produce an estimate of the trend component of real output.

Finally, estimates are often revised over time.³ For example, the expectations that prevailed until early 2001, which, in the context of the “new economy” debate, proved over-optimistic, implied estimates and projections for euro area potential growth which were subsequently revised downwards significantly.

1 For a more detailed discussion of the role of potential output measures in macroeconomic analysis, as well as the role they play within the framework of the ECB's monetary policy strategy, see the article entitled “Potential output and output gaps: concept, uses and estimates” in the October 2001 issue of the ECB's Monthly Bulletin.

2 For more details, see Box 3.7 on “The ECB's reference value for monetary growth” in the January 2004 publication “The Monetary Policy of the ECB”.

3 For some evidence of revisions to recent output gap estimates, which largely reflect revisions to potential output, see the box on “The (un)reliability of output gap estimates in real time” in the February 2005 issue of the ECB's Monthly Bulletin.

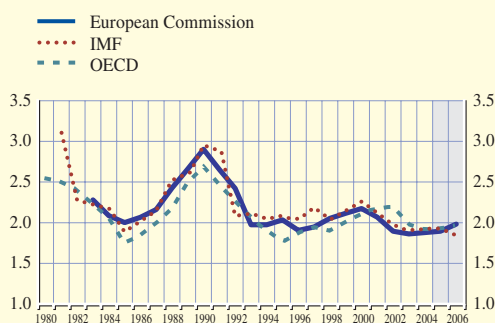
Against this background, this box provides some information on recent estimates of potential growth for the euro area and an assessment of its future evolution.

Estimates of potential output growth in the euro area since 1980

The chart below shows the latest estimates by the European Commission, the OECD and the IMF. All these estimates are based on a production function approach, which in part explains their pronounced cyclical nature.

Estimates of potential output growth in the euro area

(percentage points)



Sources: European Commission: Spring Economic Forecasts (April) 2005; IMF: World Economic Outlook Spring (April) 2005; OECD: Economic Outlook June 2005.
Note: OECD data prior to 1991 have been rescaled on account of a step break in the series. IMF data prior to 1991 have not been updated and are taken from previous publications. The shaded area delimits the projections period.

averages of changes over prolonged periods for all these variables should provide broad indications which are very close to those that would be obtained from an assessment based on the structural component of each variable.

On average, these estimates suggest that potential output growth in the euro area was in the range of 2-2.5% from 1981 to 2004 (see Table A). However, all of these estimates indicate that during the 1980s potential output growth was on average somewhat higher than in the 1990s and early 2000s, with a gradual shift from growth rates closer to 2.5% to rates closer to 2%.⁴ Estimates from the ECB based on various approaches come to similar conclusions.⁵

A growth accounting perspective can provide useful information on the main driving forces of potential output developments.⁶ Typically, growth accounting exercises are based on actual data for real GDP and its supply-side determinants, and not on the structural or trend components of these data. However,

Table A Estimates of potential output growth in the euro area

(average growth rates; percentage points)

	Overall	By decade		Recent periods and projections			
	1981-2004	1981-1990	1991-2000	1990-1994	1995-1999	2000-2004	2005-2006
European Commission	2.2	2.3	2.1	2.4	2.0	2.0	1.9
IMF	2.2	2.4	2.2	2.4	2.1	2.0	1.9
OECD	2.1	2.2	2.0	2.3	1.9	2.1	1.9
Average	2.2	2.3	2.1	2.4	2.0	2.0	1.9

Source: ECB calculations based on data from the European Commission, the OECD and the IMF.

Note: For the period prior to 1991, OECD data have been rescaled on account of a step break in the series, whereas IMF data are taken from previous publications.

4 Note that very similar indications are obtained from averages over cycles rather than over decades.

5 The assessment of euro area potential output growth at the ECB is based on direct estimates as well as complementary sources of information on the factors of growth. As regards direct estimates of potential output, the production function approach plays a prominent role. For details of the methodological aspects of the alternative versions, see also T. Proietti, A. Musso and T. Westermann, "Estimating potential output and the output gap for the euro area: a model-based production function approach", EUI Working Paper ECO 2002/09.

6 For a more detailed growth accounting analysis for the euro area, see A. Musso and T. Westermann, "Assessing potential output growth in the euro area – a growth accounting perspective", ECB Occasional Paper No 22, January 2005.

Labour productivity growth⁷ represents the main source of real GDP growth in the euro area and its gradual decline is the main factor explaining the lower level of real GDP growth during the 1990s as compared with the 1980s (see Table B). A slightly smaller fall in the contribution to economic growth from labour utilisation (defined here as persons employed per head of population) can be observed. Growth in labour utilisation reflects changes in various factors, including the unemployment rate, the participation rate and the dependency ratio (i.e. the ratio of people aged below 15 or above 64 to people of working age, i.e. those aged 15 to 64). While the contributions to output growth from changes in the unemployment rate and the participation rate rose during the 1990s as compared with the 1980s, the higher dependency ratio more than offset these changes. Since the early 1990s, while the overall contribution from labour utilisation growth has fluctuated significantly, the gradual decrease in labour productivity growth has continued. Finally, the contribution of total population growth has remained broadly unchanged over the entire period under review.

Table B Euro area real GDP growth and its determinants

(average growth rates; percentage points)

	Overall	By decade		Recent periods and projections			
	1981-2004	1981-1990	1991-2000	1990-1994	1995-1999	2000-2004	2005-2006
Real GDP growth	2.1	2.4	2.1	1.8	2.3	1.7	1.8
Labour productivity	1.4	1.6	1.4	1.7	1.1	0.7	1.0
Labour utilisation	0.4	0.4	0.3	-0.4	1.0	0.6	0.5
Total population	0.3	0.3	0.3	0.5	0.2	0.4	0.3

Sources: ECB calculations based on data from the European Commission (AMECO database) and Eurostat (ESA 95 database).

Note: Figures may not add up due to rounding. All data are from the European Commission's AMECO database, with the exception of employment data, which is from Eurostat's ESA 95 database. Labour productivity is defined as real GDP per employed person, while labour utilisation is measured here as employed persons per head of population.

The outlook

Estimates of potential output growth over the period 2005-06 are also shown in the chart above and Table A. Such estimates are conditional on the projections of the various institutions for the main macroeconomic variables for the years ahead. Current estimates and projections are based on expectations of a moderate recovery, reflecting a modest increase in labour productivity growth and broadly unchanged or lower contributions from labour utilisation growth and total population growth. As a result, potential growth in the euro area is expected by all three institutions mentioned above to be around 1.9% on average in 2005 and 2006. Only a recovery significantly stronger than expected would imply an upward revision of potential growth to rates significantly above 2% in the short term.

Beyond the short term, developments are more uncertain. In the medium to longer term, unfavourable demographic developments in terms of lower growth in the working age population (as is projected for the euro area) will become a major source of downward pressure on the trend potential output growth. However, some components of labour utilisation are

⁷ For the purposes of the analysis presented in this box, labour productivity is measured in terms of output per person employed. It would be helpful to measure labour productivity in terms of output per hour worked, but for the euro area there are no data for total hours worked covering the whole period under discussion (1981-2004).

likely to partially offset these downward pressures. In particular, participation rates, especially for women, may rise further and the structural unemployment rate could fall further, if recent trends were to continue. This notwithstanding, overall a downward trend in potential growth appears likely unless more progress is made in structural reforms in labour and product markets in future years in order to contribute to a sustained rise in productivity and labour utilisation growth.

To sum up, the analysis shows that the estimate of euro area trend potential growth of 2-2.5%, which was first published by the ECB in 1998, has become subject to downside risks, and it seems that the trend has, over recent years, moved closer to the lower bound of this range. Without a more determined implementation of structural reforms, it will be difficult to avoid demographic trends leading to even lower trend potential output growth for the euro area.