

## Box 8

## THE CARRY-OVER EFFECT ON ANNUAL AVERAGE REAL GDP GROWTH IN 2005

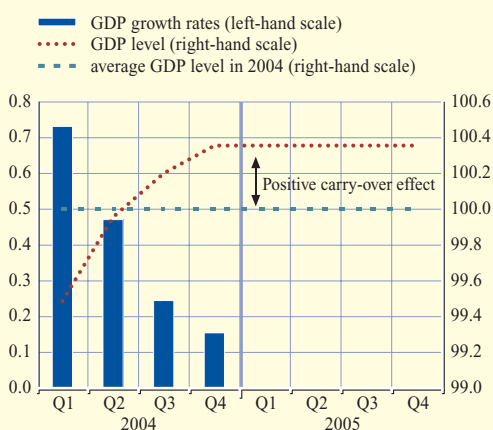
The carry-over effect on annual average real GDP growth refers to the impact of the pattern of growth recorded in the course of one year on the annual average growth rate in the following year. This concept is useful when looking at annual average growth rates, because it allows the dynamics of growth within a given year to be distinguished from the mechanical effect of growth in the previous year. It can also be useful to bear it in mind when interpreting forecasts and projections of annual average real GDP growth. This box briefly describes the concept of these carry-over effects and gives an estimate of the carry-over effect on average real GDP growth in 2005.<sup>1</sup>

Conceptually, carry-over effects denote the annual average rate of growth that would result if the level of GDP reached in the fourth quarter of a given year were to remain constant throughout the subsequent year. This is equivalent to the percentage difference between the

1 A more detailed explanation of the concept of carry-over effects on annual average growth rates of real GDP can be found in Box 6 entitled "Carry-over effects on annual average growth rates of real GDP" in the December 2001 issue of the ECB's Monthly Bulletin.

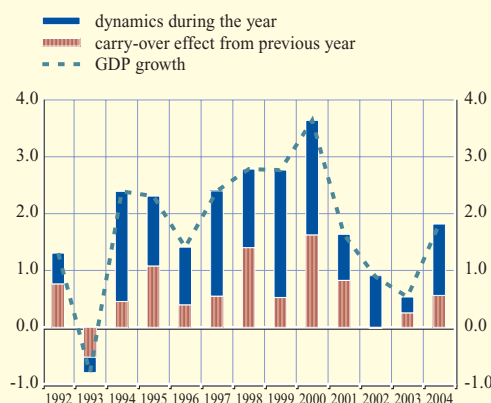
**Chart A The level and development of euro area real GDP in 2004 and carry-over effect in 2005**

(2004 = 100; quarter-on-quarter growth rates; seasonally adjusted)



Sources: Eurostat and ECB calculations.

**Chart B Annual average euro area real GDP growth and its decomposition into carry-over effect and dynamics during the year**



Sources: Eurostat and ECB calculations.

Note: Dynamics during the year is calculated as the difference between GDP growth and carry-over effect.

level of GDP in the fourth quarter of the year and the average level of GDP for the year as a whole. For example, when the level of GDP in the fourth quarter of a year is above the average level of GDP for the year as a whole, the carry-over effect on annual average growth in the next year is positive.<sup>2</sup> In 2004 there was such a positive carry-over effect (see Chart A).

Depending on the pattern of growth, carry-over effects can vary significantly from one year to another. Current estimates of GDP in 2004 point to a carry-over effect of 0.4 percentage point for 2005, which is broadly in line with that recorded in 2003 and is only slightly below that recorded, on average, for the 1990s (see Chart B).<sup>3</sup> The fact that the flash estimate of real GDP growth in the fourth quarter was slightly lower than expected may lead to a downward revision of some forecasts of annual real GDP growth for 2005. For instance, the survey conducted by the Euro Zone Barometer in mid-January, prior to the release of the flash estimate for the fourth quarter, pointed to real GDP growth of 0.4% in the fourth quarter of 2004, leading to a carry-over effect of 0.6 percentage point at the time. Therefore, the rather weak outcome in the fourth quarter of 2004 implies a mechanical downward effect in the order of 0.2 percentage point on most real GDP forecasts for 2005.

<sup>2</sup> Given that real GDP predominantly shows a positive trend, carry-over effects are, on average, positive.

<sup>3</sup> The estimated carry-over effect for 2005 may change, as the forthcoming release of annual accounts could affect the quarterly profile.