Box 4

## VOLATILITY AND CROSS-COUNTRY DISPERSION OF CORPORATE EARNINGS IN THE EURO AREA

Corporate profitability has a close and mutually dependent relationship with aggregate economic activity, notwithstanding the fact that globalisation might, over time, have weakened somewhat the links between profit and domestic output. However, earnings cycles tend to display much larger amplitudes and volatility than cycles in GDP, the broadest measure of aggregate economic activity. This, in turn, makes it relatively difficult to extract reliable signals about the business cycle from developments in the earnings of listed corporations, for which almost real-time data are available. This box extends the analysis of the relationship between listed firms' earnings and GDP growth in the euro area as presented in a box in the previous issue of this publication.[1] It shows that the decline observed in fluctuations in euro area nominal GDP growth over the past few decades has been mirrored by a similar trend decline in the volatility of euro area firms' listed earnings growth. Furthermore, it provides evidence that euro area firms' recent strong earnings performance is broadly based across the countries of the euro area and that cross-country differences in earnings growth appear to be related to differences in GDP growth.

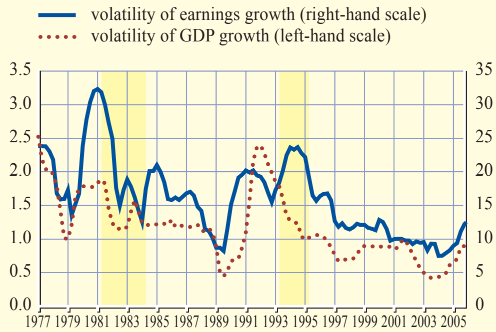
The reduction of output and inflation volatility, often dubbed the "Great Moderation", is one of the most notable macroeconomic changes of recent decades for developed economies, including the euro area. It has been argued that more price stability-oriented central banks have contributed to the more stable macroeconomic environment. In addition, given the positive influence that earnings exert on economic activity, it is also possible that developments in the corporate sector have supported the more stable macroeconomic conditions. Most notably, improved management of inventories and financial innovation have been put forward as potential explanations for this phenomenon.[2] Moreover, it cannot be ruled out that increased economic and financial integration within the euro area has brought about greater similarities in business conditions and thus earnings developments.[3] As a consequence, although the causality between the two measures can work in both directions, the functioning of the financial market can play a vital role also for developments in the real economy.

With these perspectives in mind, Chart A shows a measure of the volatility of annual nominal GDP growth and corporate earnings for the euro area over the past three decades. Two interesting features can be seen in the chart. First, it is clear that the smoother fluctuations observed in euro area output growth are indeed mirrored by a similar evolution in euro area profitability. Second, both earnings volatility and GDP volatility have tended to increase sharply ahead of

1 See Box 5, entitled "The relationship between listed companies' earnings growth and output growth in the economy as a whole", in the September 2007 issue of the Monthly Bulletin.
2 See, for example, M. McConnell and G. Peréz-Quiros, "Output fluctuations in the United States: what has changed since the early 1980s?", *American Economic Review,* Vol. 90, No 5, 2000, pp. 1464-1475.
3 See L. Baele, A. Ferrando, P. Hördahl, E. Krylova and C. Monnet, "Measuring financial integration in the euro area", ECB Occasional Paper No 23, May 2004.

## Chart A Volatility of earnings and nominal GDP growth in the euro area

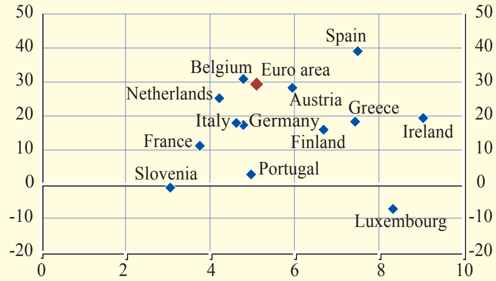
(standard deviation of three-year centred moving average; quarterly data)




Sources: Thomson Financial Datastream and ECB calculations.
Note: Shaded areas represent recessions as defined by the Centre for Economic Policy Research.

## Chart B Growth rates of nominal GDP and listed companies' earnings

(annual percentage changes; x-axis: GDP growth, y-axis: earnings growth)




Sources: Thomson Financial Datastream and ECB calculations.
Note: Average growth rates for the first and second quarters of 2007.

economic downturns (using the Centre for Economic Policy Research's definition of a recession), as depicted by the shaded areas in the chart. As data on corporate earnings are available more quickly than national account statistics, earnings volatility may provide early warning signals regarding potential turning points in the business cycle.

In addition to the increased persistence observed in euro area corporate earnings growth (which also implies lower volatility), another notable feature witnessed in recent years is the continued high level of corporate earnings growth, displaying double-digit growth rates significantly above the long-term historical averages.[4] Using earnings data based on the Thomson Financial Datastream total stock market index, the annual growth rates of euro area corporate earnings averaged almost 30% in 2007, compared with an average of around 12% over the period 1991-2006.[5] This development has raised concerns about a slowdown in earnings growth, at least over the medium term as the eventual outcome of a maturing earnings cycle, especially in view of the fact that nominal earnings growth in the first two quarters of 2007 exceeded nominal GDP growth by around 25 percentage points in the euro area.

Turning to a cross-country perspective, two issues are examined: first, the extent to which corporate earnings growth rates have differed across the euro area countries both in the recent past and historically; and second, the question of whether recent differences in national earnings growth are also mirrored in the relevant countries' current economic growth rates. The table below shows that corporate earnings growth in 2007 (up to June) has been above its long-term average (since 1991) in the majority of euro area countries. Although the recent strong earnings performance has been somewhat more pronounced in some euro area countries, it has thus been a relatively broad-based phenomenon.

4 Other measures of profitability derived from annual reports have also stood at record levels in recent years, as found, for example, in Box 5, entitled "Financial statement information on listed non-financial corporations", in the June 2007 issue of the Monthly Bulletin.

5 Estimates are derived from the price-earnings ratio and the price index of the Thomson Financial Datastream total market index for the euro area, which contains a sample of 1,313 firms. While these data should be regarded with some caution, in particular owing to an upward bias resulting from the non-recording of losses, more micro-based earnings derived from annual reports and hence including losses are not readily available for an equally large sample and such a long time period.

**Corporate earnings growth in the euro area countries**

(annual percentage changes; percentage points)

| | Average earnings growth in 2007 | Average earnings growth in the period 1991-2006 | Difference |
|---|---|---|---|
| BE | 30.9 | 7.6 | 23.3 |
| DE | 17.4 | 7.5 | 9.9 |
| IE | 19.4 | 11.7 | 7.7 |
| GR | 18.4 | 14.0 | 4.4 |
| ES | 39.1 | 5.8 | 33.2 |
| FR | 11.3 | 7.1 | 4.1 |
| IT | 18.0 | 7.4 | 10.6 |
| LU | -7.3 | 12.7 | -20.0 |
| NL | 25.2 | 9.3 | 16.0 |
| AT | 28.3 | 10.8 | 17.5 |
| PT | 2.8 | 5.6 | -2.8 |
| SI | -1.0 | 14.9 | -15.9 |
| FI | 16.0 | 18.2 | -2.3 |
| Euro area | 29.4 | 11.9 | 17.5 |

Source: Thomson Financial Datastream and ECB calculations.
Note: 2007 data refer to the period Jan.-June. Luxembourg data refer to the period Jan. 1993-June 2007 and Slovenian data refer to the period Apr. 2001-June 2007.

To further understand the (albeit quite modest) differences observed in earnings performance, it is helpful to remember that corporate earnings growth can be expected to be related to economic activity, as strong earnings growth should generally be reflected in high levels of GDP growth and vice versa. In view of this fact, Chart B indicates that the dispersion observed in earnings performance across the euro area countries in 2007 may, to some extent, reflect differences in nominal GDP growth. In particular, the link between nominal GDP growth and corporate earnings appears strong for the largest euro area countries.

To sum up, the analysis in this box shows that despite the impressive growth rates of euro area corporate earnings in recent years, the volatility of profits has in fact declined to an extent consistent with the "Great Moderation" hypothesis. Moreover, a cross-country analysis suggests that the recent high rate of profit growth is, by and large, a broad-based phenomenon across the euro area countries, and that the dispersion observed in levels of earnings growth is fairly closely related to differences in output growth.