Box 5

THE RELATIONSHIP BETWEEN LISTED COMPANIES' EARNINGS GROWTH AND OUTPUT GROWTH IN THE ECONOMY AS A WHOLE

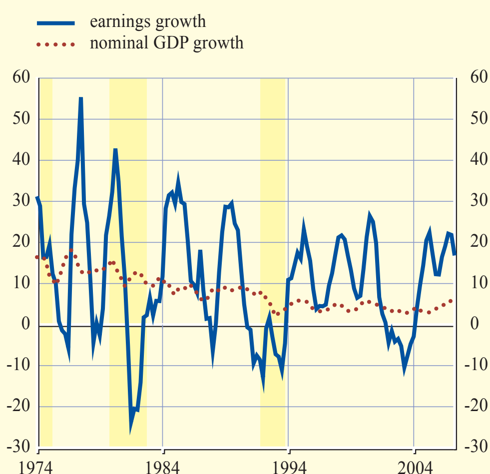
Until the recent turmoil, stock prices in most major markets had been on an overall upward trend since the trough reached in 2003. The main driver of the positive stock market sentiment over this period was very strong profitability among the largest firms typically included in benchmark stock market indices. Indeed, since 2003, listed companies in the euro area and the United States have delivered earnings that have far exceeded their respective areas' economic growth rates associated, inter alia, with a notable ratcheting up of the profit share in GDP. Given that corporate earnings and aggregate economic activity should be expected to develop broadly in line over longer horizons, some analysts have warned that the recent decoupling may not be sustainable. This box examines empirically the relationship between nominal earnings for listed companies and nominal growth in the euro area and the United States over relatively long periods. In addition, it also illustrates that accounting differences and firm-specific measures can cause both short and long-term deviations between the two measures.

The sources of listed firms' revenues mirror, to some extent, the composition of GDP.[1] First, consumption of households and the public sector form the basis of income for numerous firms.

1 Corporate earnings can also be directly measured from the National Accounts. The gross operating surplus is the most standard proxy for measuring absolute profits in the economy. The gross operating surplus is defined as GDP less compensation of employees less taxes (minus subsidies) on production. For more details, see the article entitled "Measuring and analysing profit developments in the euro area" in the January 2004 issue of the Monthly Bulletin.

Chart A Earnings and nominal GDP growth for the euro area

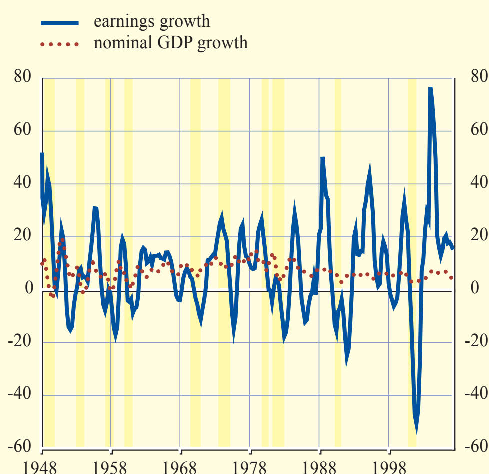
(annual percentage changes; quarterly data)



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

Chart B Earnings and nominal GDP growth for the United States

(annual percentage changes; quarterly data)



Sources: Bureau of Economic Analysis, Federal Reserve Bank of St. Louis, Robert Shiller's homepage (http://www.econ.yale.edu/~shiller/), Thomson Financial Datastream and ECB calculations.
Note: Earnings from Robert Shiller's dataset are used up to Q4 2006. For Q1 2007, earnings from Thomson Financial Datastream's total market index are used. Shaded areas represent economic recessions as defined by the National Bureau of Economic Research.

Second, some earnings of firms reflect the production and sale of investment goods.[2] Third, in the wake of increased globalisation and the fact that large firms are mostly multinational companies, their earnings are also heavily dependent on income generated abroad. This, in turn, partly finds its way to GDP through the net exports item. Given the commonalities between stock market earnings and GDP they can thus be expected to follow a similar trend growth over the long term. To examine the strength of this relationship, Charts A and B show annual nominal growth rates of earnings and GDP over long periods for the euro area and the United States.

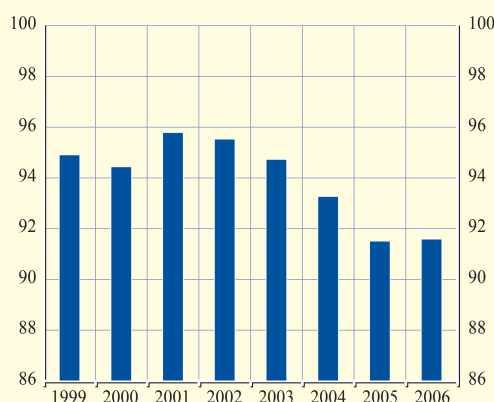
The charts reveal three interesting features. First, over the samples under consideration, both nominal earnings and GDP growth seem to fluctuate around long-term trends in the two economies.[3] Second, both US and euro area listed firms' earnings experienced a sharp downturn during the recessions in their respective economies, although the earnings growth rates display a much more volatile pattern as compared with the fluctuations in GDP growth rates. Third, the size of the observed positive gaps between earnings and GDP growth over the past few years does not appear unusual on both sides of the Atlantic by historical standards.

There are a number of reasons why the two measures can grow at different rates for long periods. First, the set of firms included in most stock market indices is not constant over time. In this respect, the overriding criteria for inclusion in stock market indices are usually based on firms' market capitalisation (measured as firms' stock prices multiplied by the number of

2 See F. Lequiller and D. Blades: "Understanding National Accounts", OECD 2006.
3 Mean nominal GDP and earnings growth rates for the euro area over the sample period 1974-2005: 8% and 10% respectively; for the United States over the sample period 1948-2006: 7% and 8.5% respectively.

Chart C Ratio of operating expenses to net sales for listed firms in the euro area

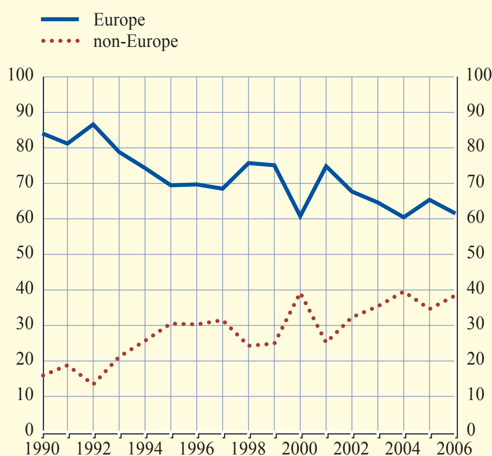
(annual data)



Sources: Thomson Financial Datastream and ECB calculations.
Note: Calculations are based on aggregated annual financial statements of listed non-financial corporations in the euro area.

Chart D Euro area firms' income generated within and outside Europe

(in percentages; annual data)



Sources: Thomson Financial Datastream and ECB calculations.
Note: The operating income data for EURO STOXX 50 firms are sorted according to the geographical segmentations as provided to Thomson Financial Datastream.

shares outstanding). Thus, on a regular basis, stock market indices are adjusted by the respective index providers to include only the largest companies in terms of market capitalisation. The effect of this, however, is that aggregate earnings calculated for stock market indices have an upward bias, as only those companies which were successful enough to survive are included. By contrast, the GDP measure does not suffer from this "survivorship bias", as it represents the performance of the economy as a whole.

Second, reflecting corporate restructuring after the bust of the IT boom in the early years of this decade, cost-cutting measures such as labour shedding, efforts to eliminate excess capacity and reducing inventories have probably played an important role in the recently observed decoupling of listed companies' earnings and GDP growth on both sides of the Atlantic. However, since such one-off measures tend to boost earnings only temporarily, their impact should by nature be relatively short-lived. Providing some evidence of improved cost-efficiency during those years, the ratio of operating expenses to sales for euro area firms fell at a relatively rapid pace between 2001 and 2005 (see Chart C).

Third, firms in most mature economies have become more multinational, which may blur the earnings-GDP relationship. In this context it is important to note that the GDP measure follows the national accounts principle, i.e. it captures only the operating profit of firms carrying out their activities within the respective economic territory and thus does not include the profit of multinationals' overseas subsidiaries. However, estimated data on the geographical breakdown of the largest euro area listed firms' earnings suggest that earnings generated abroad have gained in importance over the past 15 years or so. To this end, in 2006 the largest listed euro area firms' operating income generated outside European countries accounted for close to 40% of total income, compared with 15% in the early 1990s (see Chart D). Thus, it is likely that the particularly strong growth dynamics in some parts of the world outside Europe (in particular

non-Japan Asia, India and Latin America) contributed to the higher level of growth in the earnings of euro area listed firms than in euro area GDP.[4]

To sum up, seen over longer horizons the growth rates of listed firms' aggregated earnings and of GDP tend to share similar trends. Reflecting the fact that earnings growth cycles regularly display much larger amplitudes than GDP growth cycles, the size of the strong gaps in favour of earnings growth recently observed both in the euro area and in the United States does not appear unusual. Focusing on the euro area, although earnings growth is likely to slow down from the high double digit rates witnessed over the past few years, earnings can still be expected to grow faster than GDP, at least over the near term, in particular owing to strong growth in income from overseas against the background of buoyant world economic growth.

4 Similarly, estimates conducted by Bruegel suggest that the home markets of Europe's 100 largest listed companies are increasingly Europe as a whole rather than any particular country within it. The share (relative to total revenues) of companies' revenues from the headquarter zone declined from around 50% in 1997 to about 37% in 2005. See the Bruegel policy brief entitled "Farewell national champions", issue 2006/04.