

DEVELOPMENTS IN EURO AREA LABOUR PRODUCTIVITY

Productivity gains are a key factor driving long term economic growth and increases in living standards. In this respect, euro area productivity growth in recent years has been disappointing. For example, euro area labour productivity growth as measured by real GDP per hour worked declined from an average of 2.2% during the period 1990-95 to only 1.3% in the period 1996-2004. This box briefly reviews the factors behind this decline.

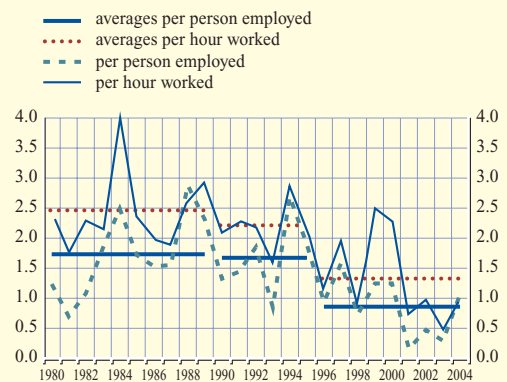
Two measures of productivity are considered. The first and most commonly used measure is labour productivity, i.e. real output per unit of labour input. Labour input is most often measured in terms of total hours worked, but when data for hours worked are not available or are of poor quality it may also be measured by the number of persons employed. The second measure of productivity is total factor productivity (TFP), which measures the efficiency of all (combined) inputs. While it is often assumed that TFP growth reflects technological progress, in practice it is not observable. For this reason it is estimated as a residual item of a standard production function and thus also captures the impact of a number of other factors, such as improvements in the internal organisation of firms and changes in the skills composition of the workforce. It is important to recognise that measurement difficulties are pervasive in the analysis of productivity, in particular as regards the measurement of TFP.¹

A decline in euro area labour productivity growth since the mid-1990s is observed irrespective of whether labour input is measured per hour worked or per person employed (see Chart A). However, owing to the trend decline in average hours worked in the euro area, average productivity growth tends to be lower when measured per person employed.

The standard growth accounting framework is useful for analysing the immediate determinants of labour productivity.² Within this framework, labour productivity growth per hour worked can be decomposed into two components: capital deepening, i.e. growth in the ratio of capital services to total hours worked, and TFP growth. Capital services can be further broken down into information and communication technology (ICT) capital services and non-ICT capital services. The breakdown for the euro area suggests that the

Chart A Labour productivity growth

(annual percentage changes)



Sources: Groningen Growth and Development Centre (GGDC) and ECB calculations.

Note: Averages calculated over the periods 1980-89, 1990-95 and 1996-04 (GGDC estimates for 2004).

¹ Data from the Groningen Growth and Developments Centre (GGDC) were used in this analysis and the source data are available from <http://www.gdc.net>. The GGDC data are based on OECD sources, but also include additional calculations (most importantly accounting for quality adjustment) that improve international comparability. Note that time periods covered in the charts differ due to data availability.

² For a discussion of the framework, see A. Musso and T. Westermann (2005): "Assessing potential output growth in the euro area – a growth accounting perspective", ECB Occasional Paper No 22.

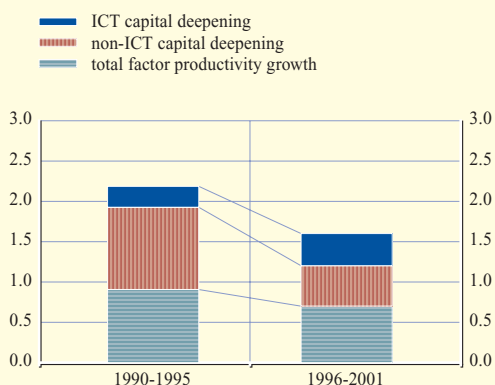
decline in labour productivity growth since the mid-1990s resulted mainly from lower non-ICT capital deepening and, to a lesser extent, lower TFP growth (see Chart B). Lower non-ICT capital deepening may in turn be associated with the improved pace of job creation since the mid-1990s. Stronger employment growth may be related to wage moderation and progress in labour market reforms aimed at increasing labour market participation. Thus, there has been a marked shift towards a more intensive use of labour.

However, productivity developments in the euro area may also reflect a relatively low use of new productivity-enhancing technologies. In particular, while labour productivity growth has increased in sectors that produce ICT, it has declined in other sectors of the economy, including those that use ICT more intensively (see Chart C).³ This contrasts with evidence for the United States, where a few sectors that use ICT more intensively (such as the retail and wholesale trade sectors, and auxiliary services for financial intermediation) saw strong productivity increases, possibly linked to a more intensive use of ICT technology.

This analysis suggests that the fall in euro area productivity growth may be partly due to an increase in labour utilisation. As a rise in labour utilisation also increases real GDP per capita and thus leads to higher living standards, this can be seen as a positive development. At the same time, in order to increase productivity growth over the longer term, economic policies should also aim at stimulating innovation and promoting the use of productivity-enhancing technologies. Policies that contribute to increasing product market competition, facilitating restructuring and increasing human capital are likely to speed up productivity gains from the use of new technologies.

Chart B Decomposition of hourly labour productivity growth

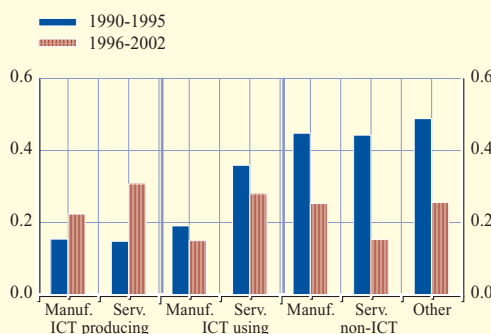
(average annual percentage point contributions)



Sources: GGDC and ECB calculations.
Note: ICT refers to Information and Communication Technology.

Chart C Sectoral contributions to average hourly labour productivity growth

(percentage point contributions)



Sources: GGDC and ECB calculations.
Note: The sectoral breakdown into ICT producing, ICT using and non-ICT is determined according to the share of ICT capital in total capital services of that sector.

³ These results update and confirm those presented earlier in: "New Technologies and Productivity in the Euro Area", July 2001 Monthly Bulletin.