1.13. Labour productivity growth over the business cycle

Labour productivity is a key economic indicator commonly used to measure economic performance. It is closely associated with standards of living. In most OECD countries, labour productivity tends to increase over economic booms and decrease during recessions.

Trend patterns for value added and labour productivity growth in OECD countries have been roughly similar over 1981-2007, with growth in value added nonetheless showing larger fluctuations. Over the period, the range for growth of value added in the OECD area was from 0.3% to 5.0% while that for growth of labour productivity was from 1.1 to 3.1%. Both growth in labour productivity and growth in value added experienced a steep decline in 1982, reaching 1.1% and 0.3%, respectively, but grew fairly rapidly thereafter. During the first half of the 1990s, labour productivity grew faster than production, owing to a slowdown in the growth in hours worked. It was then dampened somewhat before collapsing to 1.3% in 1998, at the time of the financial crisis which affected Korea, among other Asian countries. Labour productivity growth recovered shortly thereafter to around 2.7%, led by rapid output growth, but dropped again to 1.7% during the recession in 2001. Right after the beginning of the new millennium, productivity growth in the OECD area accelerated noticeably but from 2004, it declined more rapidly than growth of value added to 1.7% in 2007.

A breakdown of labour productivity growth between manufacturing and services indicates that much of the OECD labour productivity growth cycle has been driven by the manufacturing sector. Over 1981-2007, the growth cycles for labour productivity in manufacturing and services were broadly similar to the cycle at the level of the total economy, but the cycle was smoother for services than for manufacturing, with growth ranging from 0.4% to 2.3% and 1.1% to 7.1%, respectively.

A look at the detail by country shows that the current crisis is likely to affect some nations more than others. Over 1981-2007, Italy, Japan and Norway appear to have been more responsive to the business cycle. If this pattern is maintained, the current crisis is likely to affect labour productivity severely in these countries. In contrast, the United Kingdom and Spain were less responsive to the economic cycle. In these countries, therefore, the crisis is likely to result in a smaller decrease in labour productivity.

Labour productivity

Labour productivity is defined as the volume of output divided by the volume of labour input. For the indicator presented here, the output measures used are value added volumes from the OECD STAN Database and the labour input measures are estimates of total hours worked derived from STAN and the OECD Productivity Database. STAN annual hours worked series by industry were extended using OECD Productivity estimates of annual hours worked at the total economy level and adjusted using the employment structure by industry from STAN. To calculate value added for the OECD area, STAN value-added volumes were converted using the purchasing power parities for the total gross domestic product, available in the OECD Annual National Accounts Database. Series have not been adjusted for cyclical effect.

Sources

OECD, STAN Database for Structural Analysis, *www.oecd.org/sti/stan*.

OECD, Productivity Database, *www.oecd.org/statistics/productivity*.

Going further

OECD (2008), "Compendium of Productivity Indicators", *www.oecd.org/statistics/productivity/compendium*.

Ahmad, N. *et al.* (2003), "Comparing Labour Productivity Growth in the OECD Area: The Role of Measurement", *OECD Science, Technology and Industry Working Papers* 2003/14, OECD, Paris, *www.oecd.org/sti/working-papers*.

OECD (2001), *Measuring Productivity: OECD Manual on Measurement of Aggregate and Industry-level Productivity Growth*, OECD, Paris, *www.oecd.org/dataoecd/59/29/2352458.pdf*.

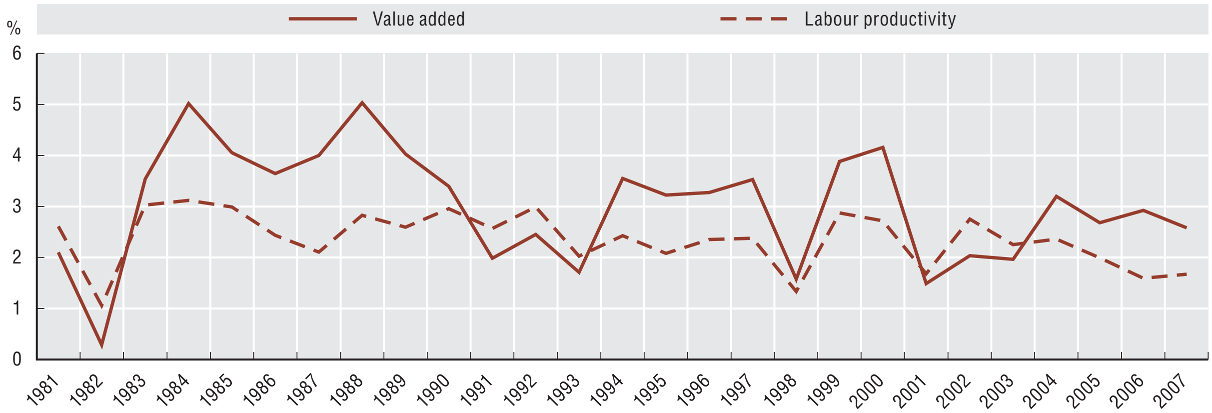
Figure notes

OECD aggregate includes 15 countries for which the time-period covered in STAN Database was optimal: Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Italy, Japan, Korea, the Netherlands, Norway, Spain, the United Kingdom and the United States.

Responsiveness is measured as the estimated elasticity of labour productivity to value added. The estimation is based on an OLS regression on the first-order differences of natural logs. Only coefficients significant at the 10% level and below are reported.

Labour productivity growth in OECD, 1981-2007

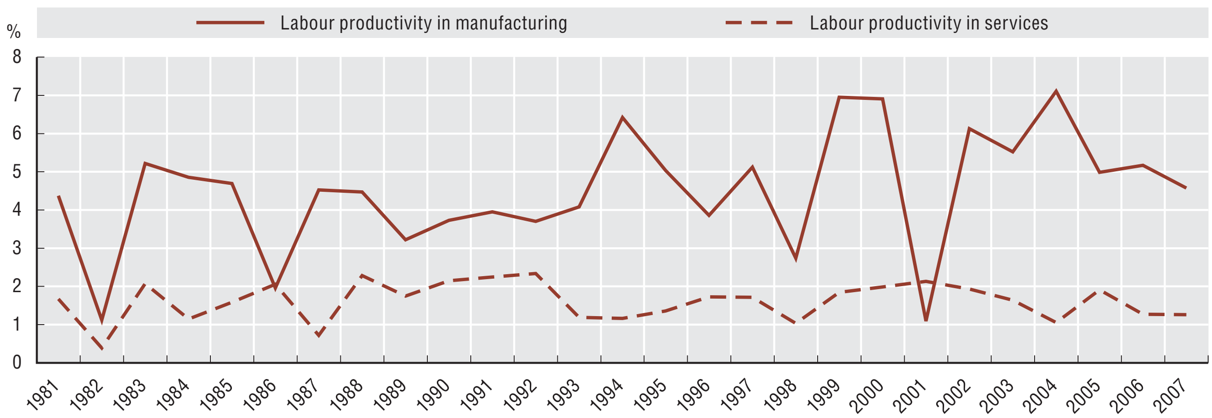
Annual growth rate, percentage



StatLink http://dx.doi.org/10.1787/742638015748

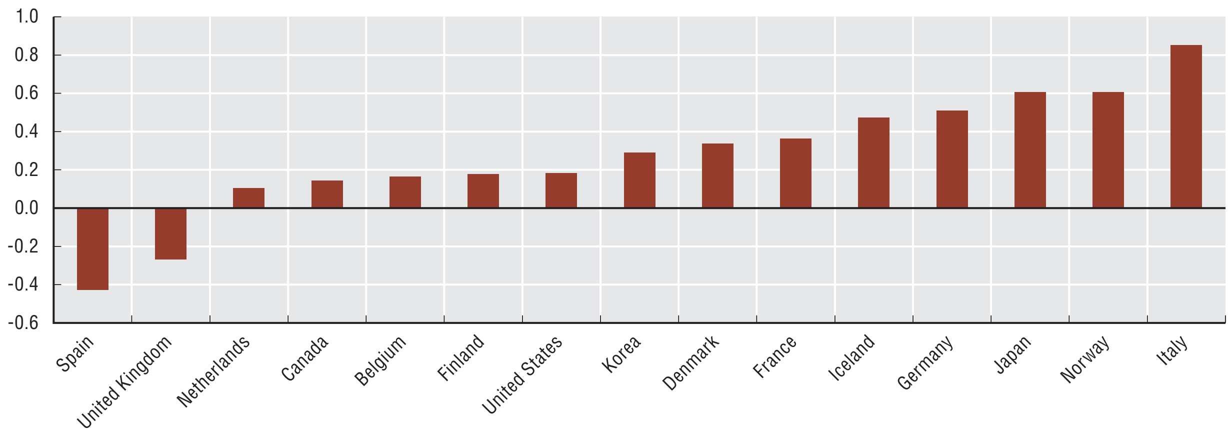
Labour productivity growth in OECD by industry, 1981-2007

Annual growth rate, percentage



StatLink http://dx.doi.org/10.1787/742647122000

Responsiveness of labour productivity to the business cycle, 1981-2007



StatLink http://dx.doi.org/10.1787/742653863517

From:
OECD Science, Technology and Industry Scoreboard 2009

Access the complete publication at:
https://doi.org/10.1787/sti_scoreboard-2009-en

Please cite this chapter as:

OECD (2009), "Labour productivity growth over the business cycle", in *OECD Science, Technology and Industry Scoreboard 2009*, OECD Publishing, Paris.

DOI: https://doi.org/10.1787/sti_scoreboard-2009-16-en