Trends in labour productivity growth

Labour productivity is a key driver of economic growth and living standards. Understanding whether the slowdown in productivity growth has been driven by structural factors and/or by reactions to the economic cycle is hence important for policy makers. This requires decomposing the time series of actual annual labour productivity growth into a trend (or structural) component and a cyclical component.

Key facts

The slowdown in labour productivity growth is a common feature of all major advanced economies and underlying long-term trends suggest that it was underway prior to the crisis. Indeed, over the 10 years preceding the crisis, trend labour productivity growth declined in all G7 countries, particularly in France, Italy and the United Kingdom. In the case of Canada, the United Kingdom and the United States, the decline since the end of the 1990s marked a reversal of growth that coincided with the IT revolution. In other countries, trend labour productivity growth has shown a gradual decline over the past 40 years from relatively high rates. The volatility in the cycle introduced by the crisis necessitates some caution in interpreting the recent trends.

Definition

Labour productivity is defined as GDP per hour worked and its growth rate is calculated as its first natural-log difference. The decomposition of labour productivity growth into a trend and a cyclical component is done by applying the Hodrick-Prescott (HP) filter (Hodrick and Prescott, 1997), where the trend component is meant to capture the long-term growth of the series and the cyclical component is the deviation from that trend. In the HP filter, the smoothness of the trend depends on a parameter usually identified as λ. The larger the value given to λ, the smoother is the trend.

Comparability

Like other filters, one limitation of the HP filter is that the estimated trend is more sensitive to transitory shocks or short-term fluctuations at the end of the sample period. This results in a sub-optimal performance of the HP filter at the endpoints of the series (Baxter and King, 1999). In view of this property, trend series are not published for the last two years for which data on actual labour productivity growth are available.

An important aspect of the HP filter is the value of the smoothing parameter λ. While for quarterly data it has been typically assumed a value of $\lambda = 1600$ (as recommended by Hodrick and Prescott, 1997), there is less agreement on the value to be used when the filter is applied to other frequencies (e.g. annual, monthly). The value of λ selected here has been determined by calibrating the Hodrick-Prescott filter in such a way that cycles shorter than 9.5 years are attenuated by 90% or more (Annex G).

Official data for Germany after unification are available only from 1991 onwards. In order to estimate data for the whole of Germany back to 1985, the Secretariat has estimated data for the whole of Germany back to 1970 by linking in 1991 the data for Germany to historical data for West Germany.

Sources and further reading

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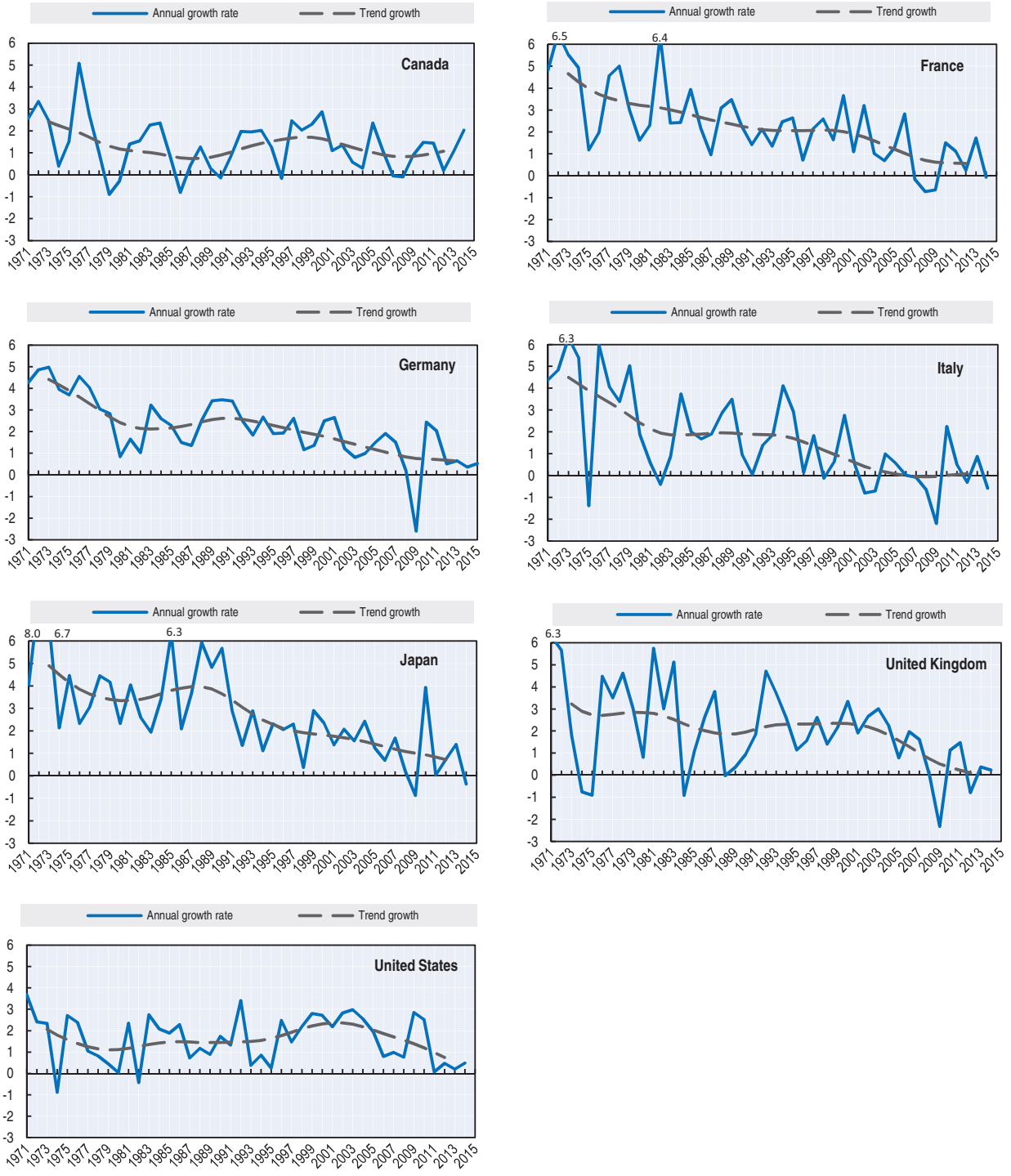
Figure 5.1. **Trend labour productivity growth in G7 countries**

Total economy, percentage change at annual rate



StatLink http://dx.doi.org/10.1787/888933346688

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