Potential output growth in several industrialised countries a comparison

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Abstract In this paper, we present international comparisons of potential output growth among several economies—Canada, the euro area, France, Germany, Italy, Japan, the Netherlands, the United Kingdom, and the United States—for the period 1991–2004, for which we construct consistent and homogenous capital stock series.

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The main estimates rely on a structural approach where output of the whole economy is described by a Cobb–Douglas function and Total Factor Productivity (TFP) is estimated allowing for possible breaks in the deterministic trend. The results confirm that over the considered period the potential gross domestic product growth has been faster in the United States than in other studied countries, reflecting a combination of higher labour contribution and faster TFP growth. Overall, this paper might help to shed some light on cross-country differences in economic performance over the recent period.

**Keywords**  
Potential growth · Production function · Total factor productivity · Age of equipments

**JEL Classification**  
C51 · E32 · O11 · O47

1 Introduction

For a central banker, potential growth estimates are of major interest for several reasons. First, they provide a quantitative assessment of inflationary pressures on product and labour markets at the aggregate level. Measurements of the output gap, defined as the difference between actual and potential output, may be used for such an assessment. Second, for monitoring purposes, quarterly measurements of output gap can be drawn upon as a composite and simple indicator of the economy’s position in the business cycle. Finally, potential growth estimates may also be used for macroeconomic forecasts. For all these reasons, several research projects have been carried out in central banks on potential growth estimates.1 Recent developments in Europe have also stimulated fresh interest in potential output growth measures, particularly those based on structural approaches. In fact, international comparisons suggest that potential growth in Europe remained below other areas or countries over the past two decades, especially as compared to the United States. From this point of view, the breakdown of potential growth between labour and capital contributions is a simple but accurate way to ascertain cross-country differences in growth performance.

In this paper, we present estimates of potential growth for several economies, namely: Canada, the euro area, France, Germany, Italy, Japan, the Netherlands, the United Kingdom, and the United States. Our main findings rely on a structural approach. Following Baghli et al. (2006), we use Solow’s neoclassical model and the so-called production function framework. In the Solow’s model, economic growth is a function of standard factors of production (labour and capital stock) and an unobserved technological change. More precisely, this approach consists in choosing a technical relationship supposed to represent the productive capacity of the economy, calibrating key parameters on the basis of the relevant data, determining the level of potential output by means of this calibrated function and modelling the resulting Solow residual in order to explain its developments using econometric techniques. Among them, we systematically tested the existence of trend breaks in the technological change, using

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1 See, for instance, Banque de France (2002) and de Bandt et al. (2006).