The New Economy and Trend Productivity Growth in Canada

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The United States has experienced a very strong productivity revival since 1995. Output per hour in the business sector advanced at a 2.7 per cent average annual rate in the 1995-99 period, up from 1.2 per cent in the 1989-95 period. In contrast, Statistics Canada data show that growth in output per hour in the business sector in Canada actually decelerated in the second half of the 1990s, falling to 1.0 per cent per year in the 1995-99 period from 1.3 per cent in 1989-95. Has the new economy, defined as higher trend productivity growth, pasted Canada by?

This article examines the Canadian productivity experience in the 1990s and asks the question why trend productivity has not picked up. It then discusses the likelihood of Canada entering the "new economy" of higher trend productivity.

Productivity Trends in Canada

The Canadian economy certainly picked up steam in the second half of the 1990s. Real GDP accelerated 1.9 percentage points to a 3.4 per cent average annual growth rate between 1995 and 1999 from only a 1.5 per cent rate in the 1989-95 period. But the increase in output has almost entirely been accounted for by increased employment, not productivity gains. Employment growth accelerated 1.7 percentage points between periods, while productivity growth (GDP per worker) was up only 0.3 points (GDP per hour growth, like business sector per hour growth, fell). This development in itself is not necessarily bad (some might say it is even positive) as employment growth is highly desirable as it reduces the unemployment rate and labour market slack and has marvelous effects of governments' fiscal position. But it does raise the question of why productivity growth was so poor, particularly in contrast to the U.S. experience.

Factors Behind the U.S. Productivity Revival

To understand the failure of productivity to revive in Canada in the second half of the 1990s, and the prospects for productivity in the first decade of the new millenium, it is crucial to understand the U.S. productivity experience. The factors that account for the U.S. productivity revival were largely not present in Canada. These factors are outlined below.

- The United States has a very large high tech sector and this information technology (IT)-producing sector (largely concentrated in manufacturing) has enjoyed extremely rapid productivity growth.

- Machinery and equipment investment, particularly in IT, has been very strong since the early 1990s and since 1995 appears to have given service sector productivity a major boost (see the following article in the *Monitor* on the renaissance of U.S. service sector productivity).
- The unemployment rate has fallen to very low levels in recent years, giving employers an additional incentive to substitute capital for labour to the benefit of labour productivity and resulting in the full utilization of human resources, a recipe for strong productivity growth.
- The Federal Reserve Board policy of probing the limits of the non-accelerating inflation rate of unemployment (NAIRU) has resulted in robust demand growth and allowed the increase in potential output arising from the IT revolution to manifest itself as actual output. In the short-to-medium term tradeoff between low inflation and economic growth, the Fed has given significant weight to robust growth.
- Changes by the Bureau of Economic Analysis in the methodology used to construct the national accounts, especially the decision to treat software as an investment good, have led to significant upward revisions in real output growth (e.g. 0.5 percentage points per year in the 1995-98 period).

Factors Behind Canadian Productivity Stagnation

The five factors enumerated above as contributing to robust productivity growth in the United States in the second half of the 1990s did not obtain in Canada.

- Canada has a much smaller high tech sector than the United States and has paid the price with much weaker productivity growth in manufacturing.
- Canada's machinery and equipment investment was much weaker than investment in the United States in the first half of the 1990s (only 2.1 per cent per year in real terms) and this lackluster performance failed to produce, with a lag, a revival of service sector productivity in the second half of the 1990s.
- The unemployment rate in Canada has remained much higher, giving employers less incentive to substitute capital for labour and thwarting the positive productivity effects of full utilization of resources.
- The Bank of Canada has been less aggressive than the Federal Reserve Board in testing the limits of the NAIRU, with the result that demand growth has been somewhat weaker in Canada since 1995. The economic growth objective appears to receive lower weight relative to the low inflation objective in the conduct of monetary policy in Canada than in the United States.
- Statistics Canada has not adopted the methodology of treating software as part of investment, so measured productivity growth has not had a boost from statistical revision.

Canadian Productivity Prospects for the Next Decade

A strong case can be made that the new economy characterized by strong trend productivity growth is finally arriving in Canada, occasioned by a reversal of most of the factors that have impeded productivity growth in the second half of the 1990s.

- The high technology sector is now enjoying very rapid growth and this growth is expected to continue for the foreseeable future.

Indeed, high tech industries are fueling rapid growth in many urban centres such as Ottawa and Kitchner-Waterloo.

- Real machinery and equipment investment in Canada skyrocketed in the second half of the 1990s, advancing at a 14.3 per cent average annual rate. The productivity payoff from this investment will be felt in coming years throughout the economy.
- Canada's unemployment rate in the first half of 2000 has fallen below 7 per cent and could go significantly lower if the economic growth remains robust. This will foster more productive use of labour.
- Bank of Canada policy remains the wild card as it is not clear it will adopt the successful U.S. policy of aggressively pushing down the unemployment rate until inflation accelerates. A recession or significant growth slowdown precipitated by the Bank of Canada's preoccupation with the attainment of price stability could nip incipient productivity gains in the bud.
- Statistics Canada plans to follow the U.S. lead in the treatment of software as an investment, which would increase both past and future measured productivity growth.

Is A New Productivity Era Upon Us?

No one can be certain about future productivity trends. Rosy scenarios of productivity growth projected by many economists for the 1970s, 1980s, and 1990s have gone down in smoke. It is very possible that the future productivity path will be a continuation of the anemic productivity growth experienced over the last 25 years. Yet economic history moves in cycles, often associated with waves of technological innovation. The wave of innovation associated with information technology finally has increased productivity growth in the United States, although there is of course no assurance that this pace (2.5-3.0 per cent per year for business sector labour productivity) will continue for any length of time. The productivity-enhancing effects of the current technological wave may be less potent that earlier technological waves.

In our view, the balance of evidence now suggests that Canada will see a significant pick-up in productivity growth (to at least the 2-2.5 per cent range for business sector output per hour) over the next decade if not for two decades. Very preliminary evidence of such a revival of productivity growth in Canada is found in the productivity figures for the first half of 2000, showing GDP per worker rising at a 2.2 per cent annual rate.

But the dominant reason for adopting an optimistic view on trend productivity growth is the recent U.S. experience. What happens in the United States spills over to Canada, although often with a lag. Our productivity growth in the past has tracked or even exceeded U.S. growth as the same forces are at play in the two countries. The factors that have produced an acceleration of measured productivity growth in the United States since 1995 (innovation in IT, strong machinery and equipment investment, low unemployment, changes in statistical methodologies) are now beginning to operate in Canada.

Notes

* This article summarizes sections from a much longer paper entitled "The New Economy and Trend Productivity." This paper is available at www.csls.ca under the International Productivity Monitor. Email: csls@csls.ca.