Whither Productivity?

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If ever there was a time for a productivity revival, it's now. With the labour-starved U.S. and Canadian economies threatening to overheat, sustaining both solid growth and low inflation will demand doing more with less. While recent productivity data are promising, the **prospect of further progress is far from certain**.

After surging at the turn of the century due to the internet boom, **output per hour worked slowed in the mid-2000s** and never regained vigour (*Chart 1*). Annual productivity growth is now trending slightly above 1% in the U.S. and Canada. While that's a modest step up from recent years, it's not significantly different from the past decade's rate, and well below the 3%-plus pace at the turn of the century.[1] Even manufacturing, which should have seen a resurgence due to advanced automation, has failed to impress, with the U.S. *level* unchanged from eight years ago (i.e., zero growth), and Canadian growth, though positive, slowing sharply of late.

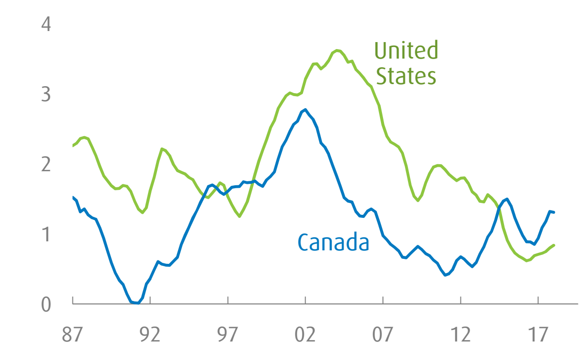
Still, the recent modest upturn in overall productivity provides **reason for optimism**. Here are three more. **First, capacity strains** are pushing business leaders to reorganize processes to meet demand with current resources. Finding operational efficiencies is one way to enhance multi-factor productivity growth, at least temporarily. **Second**, **lower corporate taxes** and stellar earnings are incenting U.S. firms to spend more on machines and automation, another wellspring of efficiency. Nonresidential investment grew 6.7% y/y in the first half of the year, led by a 11.2% jump in computing gear and a 9.0% leap in software (*Chart 2*). Facing competitiveness pressures, Canadian companies are also investing heavily despite trade policy concerns, raising computer spending 12.7% y/y in Q1 and software purchases 6.8%. One caveat, however, is that if the supply of labour is constrained, adding more capital eventually leads to diminished productivity returns.

The IT spending boom reinforces a **third** reason for optimism: increased use of **advanced robotics and AI systems**. Despite the lack of recent evidence linking IT spending with productivity, some studies see big gains from AI usage in coming years.[2] More fast-food restaurants are replacing cashiers with automated kiosks, while companies are using improved logistics software to corral freight charges in the face of extreme driver shortages. More versatile robots with advanced sensors, and 3-D printing technology to produce custom parts, promise to speed up assembly lines. However, finding qualified IT workers to keep the lines running smoothly remains a challenge.

Chart 1
Productivity Fizzles...

(20-qtr m.a. : y/y % chng; business sector)

Labour Productivity

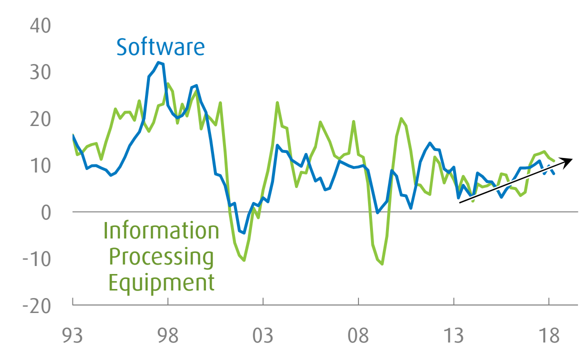


Sources: BMO Economics, Haver Analytics

Chart 2
...Yet IT Spending Sizzles

United States (y/y % chng)

Private Nonresidential Investment



Sources: BMO Economics, Haver Analytics

[1] A recent study suggests the slowing in productivity likely does not stem from mismeasurement of prices and real GDP due to the growing digital economy. https://www.brookings.edu/research/the-measurement-of-output-prices-and-productivity/

[2] https://preview.thenewsmarket.com/Previews/PWC/DocumentAssets/476830.pdf; and, https://www.accenture.com/t20170927T080049Z__w__/us-en/_acnmedia/PDF-33/Accenture-Why-AI-is-the-Future-of-Growth.PDF

In fact, a shortage of skilled workers casts doubt on a sustained productivity revival. Output per hour worked tends to rise early in a recovery when demand improves but firms are wary of hiring (*Chart 3*). In the U.S., it has averaged 4.7% in the first year of recovery from the past 11 recessions, compared with 2.5% in the year preceding the downturn, which is close to the long-run norm (2.4%). A smaller sample using Canadian data shows a similar disparity before and after recessions. There are few productivity home runs in the late innings of a cycle because firms are forced to draw from the bottom of the batter line-up. More skillful workers step up to the plate early, while less-qualified help arrives later when companies are not as picky due to shortages. Indeed, in the past two years, the U.S. jobless rate has declined the fastest for persons lacking a high school diploma, returning their employment rate to pre-recession levels (*Chart 4*). As less-skilled workers gain on-the-job experience, efficiency may improve. As well, the late 1990s was also a period of rapid technology adoption, and it bucked the trend of slowing late-cycle productivity.

An aging population won't help, however. Baby boomers are retiring to the tune of 4 million Americans each year, replaced by younger, less experienced workers. The construction industry has long lamented the loss of skilled tradespeople and the dearth of newcomers eager to fill their steel-toed shoes. While it's encouraging that more seniors are delaying full retirement, their labour force participation rate (20%) is one-quarter that of prime-age workers (*Chart 5*).

The trade war is likely the biggest threat to productivity. Tariffs imposed by the U.S. government, retaliatory measures by other nations and NAFTA-related uncertainty will delay investment decisions, disrupt supply chains and misallocate scarce resources. While the tariffs to date are too small to derail the expansion, those under consideration (notably for autos) could seriously warp the tracks. Their adverse impact on trade, investment and personal spending will be immediate, while the effect on productivity will endure for years, if not decades.

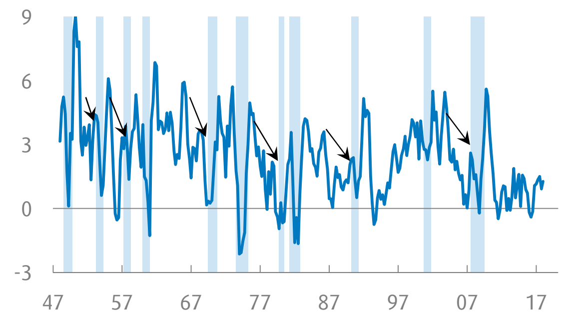
Bottom Line: Some recent productivity pickup in the U.S. and Canada, though promising, provides no guarantee of future progress. While U.S. tax reforms, capacity constraints and advanced automation could spur further gains, a potentially harmful trade war and growing dependence on low-skilled workers to drive the expansion suggest caution. Barring a ceasefire on the trade front, the economy's long-run speed limit could stay below 2%, as judged by the Fed and Bank of Canada. If so, then driving the economy faster, as per the U.S., risks hitting an inflation pothole down the road.

Chart 3

Ninth Inning Slump

United States (y/y % chng, business sector)

Labour Productivity



Shading marks periods of U.S. recession

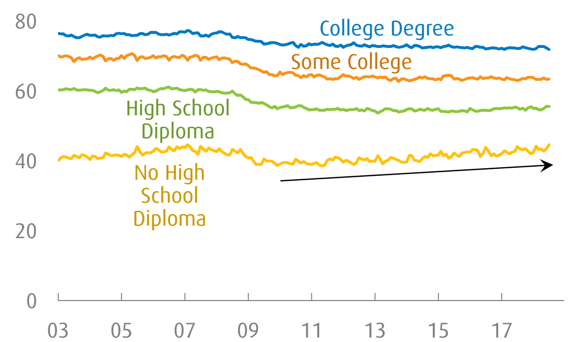
Sources: BMO Economics, Haver Analytics

Chart 4

Studying Less, Working More

United States (% of population age 25 years or older)

Employment Rate by Education Level



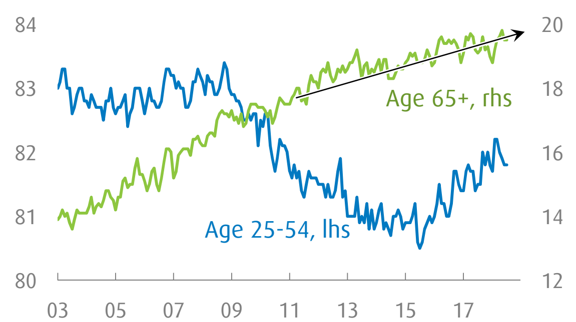
Sources: BMO Economics, Haver Analytics

Chart 5

More Active Seniors

United States (percent)

Participation Rate



Sources: BMO Economics, Haver Analytics