Study: The impact of Canada's firm-size disadvantage on the labour productivity gap between Canada and the United States

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The gap between the levels of labour productivity in Canada and the United States is due primarily to the larger share of employment in small firms in Canada and their comparatively lower labour productivity vis-a-vis large firms. Labour productivity is defined as gross domestic product (GDP) per hour worked.

While small firms are often regarded as dynamic and innovative, in many cases, they may not be able to exploit the scale economies associated with size and, therefore, possess a productivity disadvantage relative to their larger counterparts. A country with a large proportion of employment in small firms, it has therefore been suggested, is likely to have relatively lower levels of aggregate business-sector productivity.

Analysis of the importance of this explanation for the Canada / United States gap in labour productivity levels requires comprehensive and comparable data on firm-size distributions in Canada and the United States and on differences in productivity levels across firm size classes.

Two papers released today provide new comprehensive data on labour productivity differences across size classes in the two countries. They also analyze whether differences in industrial structure between Canada and the United States, along with differences in productivity performance of small firms relative to large firms, can explain the productivity gap between the two countries.

Differences in size distributions between Canada and the United States

The first study, "The Distribution of Gross Domestic Product and Hours Worked in Canada and United States across Firm Size Classes," examines and compares labour productivity levels in Canada and United States in the business sector for small and large firms from 2002 to 2008. It quantifies the relative importance of small and large firms in Canada and the United States using measures of both output (GDP) and labour input (hours worked) and compares the relative labour productivity levels of small versus large firms. For this study, small firms are defined as having 0 to 499 employees while large firms are those possessing 500 or more.

Over the 2002 to 2008 period, the importance of large firms in the business sector, as measured by their share of GDP and hours worked, was smaller in Canada than the United States. In 2008, large Canadian firms generated 46.6% of business sector GDP and 29.2% of hours worked. Large firms in the United States, in turn, produced 53.9% of GDP and 44.4% of hours worked.

At a detailed industry level, the large-firm share of GDP in the United States was greater than 50% in more individual industries than in Canada. The cross-country differences were particularly large in the service sector. The large-firm share of the services sector was 40.2% in Canada in 2008, compared with 52.8% in the United States. The large-firm share was 55.4% in the goods-producing industries in Canada that year, compared with 56.8% in the United States.

Overall, the gap in labour productivity levels between small and large firms was larger in Canada than in the United States. Canadian labour productivity levels in small firms were about half those of large firms. In the United States, small firms were 67% as productive as large firms.

Impact of the small-firm disadvantage on the Canada–United States productivity gap

The second study, "Canada–United States Labour Productivity Gap across Firm Size Classes," examines whether having a larger share of hours worked in small firms that were relatively less productive than large firms accounts for the gap in aggregate labour productivity levels between Canada and the United States.

Since aggregate productivity is just the weighted sum of the productivity of the underlying enterprises that make up the economy, changes in size distributions or relative productivity (all else being equal) will result in changes in aggregate productivity levels. For example, increasing the proportion of the more productive large firms, while holding constant their relative productivity, will increase aggregate productivity. Increasing the relative productivity of small compared with large firms, while holding constant their relative importance as measured by the share of hours worked, will also increase aggregate productivity.

The paper provides estimates of the impact on Canadian aggregate labour productivity levels of increasing the share of hours worked in Canadian large firms to US levels. It then quantifies the impact of increasing the relative productivity of small-to-large firms in Canada up to the relative productivity ratio of small firms to large firms that exists in the United States.

The study finds that an increase in the share of hours worked of large firms in Canada to US levels would have increased Canadian labour productivity levels by about 6% in 2002 and reduced the productivity gap. Bringing the relative labour productivity of small compared with large firms up to US levels would have increased Canadian labour productivity levels by another 11% in 2002 and would have had a greater impact on reducing the productivity gap.

Together, decreasing the relative importance of small firms in the economy and increasing their relative productivity compared with large firms accounts for most of the gap in productivity levels between Canada and the United States in 2002.

Changes in the economy that occurred between 2002 and 2008 reduced the relative contribution of the small-firm sector to 67% **(correction)** by 2008.

The studies "The Distribution of Gross Domestic Product and Hours Worked in Canada and the United States Across Firm Size Classes" in the *Economic Analysis Research Paper Series*, no. 88 (11F0027M), and "Canada-United States Labour Productivity Gap Across Firm Size Classes" in *The Canadian Productivity Review*, no. 33 (15-206-X), are now available from the *Browse by key resource* module of our website under *Publications*.

The related studies "Canadian Labour Productivity Differences Across Firm Size Classes, 2002 to 2008" in *The Canadian Productivity Review*, no. 32 (15-206-X), and "The Contribution of Small and Medium-sized Businesses to Gross Domestic Product: A Canada-United States Comparison" (no. 70) and "Small, Medium-sized, and Large Businesses in the Canadian Economy: Measuring Their Contribution to Gross Domestic Product from 2001 to 2008" (no. 82) in the *Economic Analysis Research Paper Series* (11F0027M) are also available.

Other related studies on productivity are available on our website (www.statcan.gc.ca/economicanalysis).

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