Multifactor productivity growth estimates and industry productivity database, 2020: productivity growth during the COVID-19 pandemic

Released at 8:30 a.m. Eastern time in The Daily, Tuesday, April 5, 2022

Multifactor productivity, measured as output per unit of combined labour and capital inputs, increased 0.5% in the Canadian business sector in 2020. The growth in 2020 reflected a 6.5% decrease in output, and a 7.0% decline in the combined inputs of capital and labour.

Multifactor productivity growth in 2020 was comparable to the average annual growth during the pre-pandemic period from 2010 to 2019. For the period from 2010 to 2019, multifactor productivity increased at 0.5% per year on average in the business sector.

Multifactor productivity measures the extent to which inputs are used efficiently in the production process. Growth in multifactor productivity is often associated with technological change, organizational change or economies of scale.

Multifactor productivity is one of the three components of labour productivity, the other two being capital intensity and labour skill upgrading. An increase in capital intensity arises from investment in equipment, structures and intellectual property that contributes to growth in labour productivity. Skill upgrading is measured by labour compositional changes toward those workers who are more educated and more experienced. It captures the effect of an increase in worker skills from education and experience on labour productivity.

The increases in capital intensity and worker skills are main factors contributing to the sharp increase in labour productivity in 2020

Labour productivity in the business sector rose sharply at 8.0% in 2020. The growth in labour productivity in 2020 was higher than the average annual growth in labour productivity in the business sector since 1980 (+1.5% from 1980 to 2020).

This sharp increase in labour productivity in 2020 reflected an increase in capital intensity (+6.4 percentage points) and skills upgrading (+1.0 percentage points). The growth in multifactor productivity remained modest in 2020 (+0.5 percentage points).

While hours worked declined during the COVID-19 pandemic, capital changed little in the business sector. In 2020, capital rose by 0.5% in the business sector. The large decline in hours worked, combined with little change in capital, caused a large increase in capital intensity.

The decline in economic activities during the pandemic led to strong growth in the effect of labour composition. The contraction in output and employment was particularly large in those service sectors that tend to employ workers who are younger and less educated, such as accommodation and food services. As these sectors contracted, the average experience and education of workers who continued to work rose, contributing to growth in average worker skills and average labour productivity.

The decline in labour productivity in 2021 points to a reversal of the strong increase in capital intensity and worker skills in 2020

The quarterly labour productivity growth estimates shows that labour productivity declined 6.9% in 2021, with an average annual growth of 0.6% in years 2020 and 2021. The two main sources of the strong labour productivity growth in 2020 discussed above are expected to reverse in 2021 as hours worked rose and workers with relatively lower skills returned to work.

Table 1
Sources of labour productivity growth in the business sector (average annual basis)

	1980 to 2000	2000 to 2010	2010 to 2019	2020
	percentage points			
Gross domestic product growth	3.2	1.5	2.4	-6.5
Growth in hours worked	1.5	0.7	1.1	-13.4
Labour productivity growth	1.7	0.7	1.2	8.0
Contribution to labour productivity growth				
Capital intensity	0.9	1.0	0.5	6.4
Labour composition	0.4	0.3	0.2	1.0
Multifactor productivity growth	0.4	-0.6	0.5	0.5

Note(s): The growth rates represent annual compound growth rates. Numbers may not add up due to rounding.
Source(s): Table **36-10-0208-01**.

Note to readers

Multifactor productivity estimates by major business sector for 1961 to 2020 are now available. The detailed industry productivity database for 1961 to 2018 is also now available.

Revisions

Data in this release reflect the latest supply-use tables for 2018, published in The Daily on November 9, 2021; data on fixed capital, published in The Daily on November 17, 2021; data on real gross domestic product, published in The Daily on November 30, 2021; and data on hours worked, published in The Daily on February 11, 2022.

Multifactor productivity measures

Multifactor productivity measures at Statistics Canada are derived from a growth accounting framework that allows analysts to isolate the effects of increases in input intensity and skills upgrading on the growth in labour productivity.

The residual portion of labour productivity growth that is not attributable to gains in input intensity and skills upgrading is called growth in multifactor productivity. It measures the efficiency with which the inputs are used in production. Growth in this area is often associated with technological change, organizational change or economies of scale.

Available tables: 36-10-0208-01 and 36-10-0217-01.

Definitions, data sources and methods: survey number 1402.

For more information, or to enquire about the concepts, methods or data quality of this release, contact us (toll-free 1-800-263-1136; 514-283-8300; **infostats@statcan.gc.ca**) or Media Relations (**statcan.mediahotline-ligneinfomedias.statcan@statcan.gc.ca**).