Catalogue no. 36-28-0001
ISSN 2563-8955

Economic and Social Reports

Inflationary pressures, wages and profits

by Hassan Faryaar and Danny Leung

Release date: June 28, 2023

Statistics Canada Statistique Canada

Canada

How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada, visit our website, www.statcan.gc.ca.

You can also contact us by

Email at infostats@statcan.gc.ca

Telephone, from Monday to Friday, 8:30 a.m. to 4:30 p.m., at the following numbers:

- Statistical Information Service 1-800-263-1136
- National telecommunications device for the hearing impaired 1-800-363-7629
- Fax line 1-514-283-9350

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, Statistics Canada has developed standards of service that its employees observe. To obtain a copy of these service standards, please contact Statistics Canada toll-free at 1-800-263-1136. The service standards are also published on www.statcan.gc.ca under "Contact us" > "Standards of service to the public."

Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

Published by authority of the Minister responsible for Statistics Canada

An HTML version is also available.

Cette publication est aussi disponible en français.

Inflationary pressures, wages and profits

by Hassan Faryaar and Danny Leung

DOI: https://doi.org/10.25318/36280001202300600005-eng

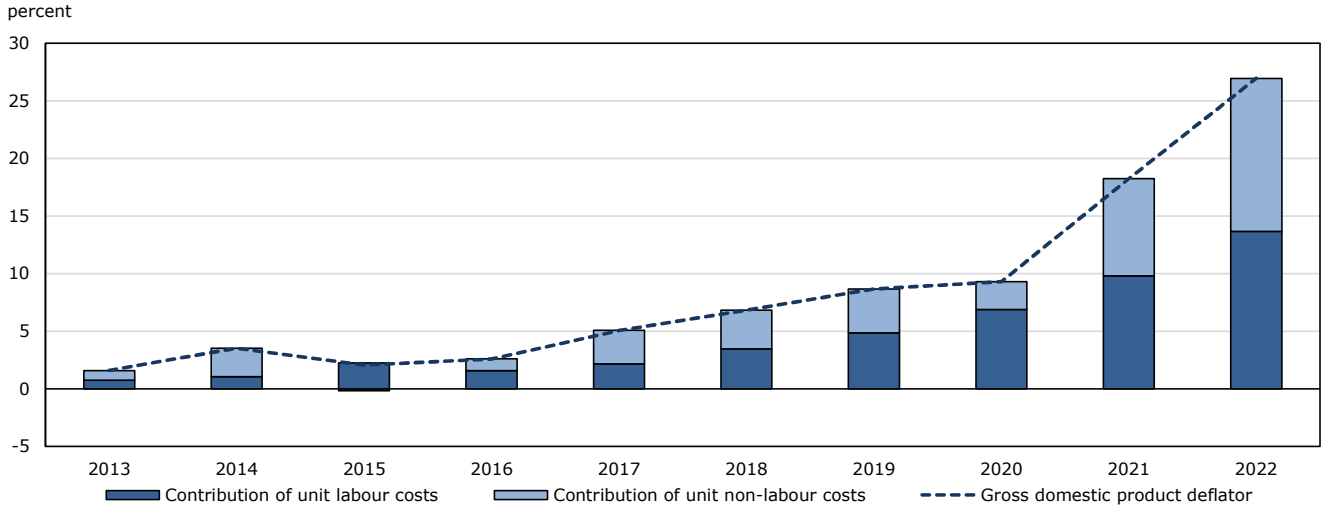
At 6.8% on an annual average basis, Consumer Price Index (CPI) inflation in 2022 reached a 40-year high.[1] Survey data from Statistics Canada suggest that rising prices have affected many Canadians' ability to meet day-to-day expenses and have led to a need to adjust spending habits to cope with inflation.[2] To better understand the nature of high inflation and how it may evolve in the future, studies have looked at potential driving sources. For example, in Canada, Wang (2023) estimated the impact of import prices on inflation. Chen and Tombe (2023) examined the relative importance of supply and demand shocks in a perfectly competitive market. Faryaar et al. (2023) studied the impacts of rising markups on inflation in an imperfectly competitive market. In the United States, Stiglitz and Regmi (2022) and Jarsulic (2022) argued that the negative supply shock was the main driver of inflation but sectoral demand shifts and market power also fuelled the problem. Thus, there are different ideas in the literature on the main driver of inflation.

An important area of investigation is how labour costs (where labour costs are primarily wages and salaries, but also employers' social contributions for employees and imputed labour income for self-employed workers) and non-labour costs (where non-labour costs are primarily corporate profits and profit income of proprietors, but also interest, depreciation, rent and indirect business taxes) are evolving relative to inflation. For example, at the beginning of 2022, businesses that expected labour shortages reported they were likely to increase wages of new and existing employees (Morissette, 2022). It is unclear to what extent increases in costs attributable to labour shortages or supply chain pressures or increased demand were passed on to consumers or absorbed by businesses. Gumiel and Hahn (2018) argued that depending on the nature of the shock, labour and non-labour costs adjust differently. The term "greedflation" has been used in the literature to describe the situation where businesses are taking the opportunity in a high inflation environment to increase their prices above their underlying costs of production to garner higher profits. Some evidence has shown that profits and profit margins have risen, but much of that has been in the oil and gas extraction, mining and quarrying, and petroleum and coal product manufacturing sectors or because of rising volumes rather than rising prices.[3] Stanford (2023, January 20) provided a different view, showing that unit non-labour costs (non-labour costs per unit of output) have risen faster than unit labour costs (labour costs per unit of output) since the first quarter of 2019 and that there has been a strong correlation between unit non-labour costs and the growth in the CPI. Economic theory does not give definitive direction on how the markups of firms (price over marginal costs) should react to a combination of demand and supply shocks. Depending on the model, increasing margins could be a part of normal profit-maximizing behaviour of firms. Faryaar et al. (2023) estimated that markups (among non-financial corporations excluding those in mining and oil and gas extraction) rose by 2.6% between the two years before the COVID-19 pandemic and the second quarter of 2022, a relatively small increase compared with the increase of inflation over the same period.

1. See Statistics Canada (2023, January 17).
2. See Statistics Canada (2022, June 9).
3. See Tombe (2022, October 14).

This article focuses on the relative contribution of unit labour costs and unit non-labour costs to the growth of the gross domestic product (GDP) deflator.[4] In contrast to the previous analyses that focused on one or two of the elements at a time, this article examines inflation, and labour and capital costs per unit of output under a unified framework.[5] Conceptually, the growth in the GDP deflator is different from the growth in the CPI. The CPI reflects the price of a basket of goods and services purchased by households, whereas the GDP deflator reflects a broader range of prices in the economy.[6] Despite the difference, over the period of analysis their movements are similar, with the GDP deflator rising more quickly than inflation in consumer prices because of faster growth in the price of exports (see Faryaar et al. [2023] in this volume for a chart that compares the two).

Chart 1
Contribution of unit labour costs and unit non-labour costs to cumulative growth in the gross domestic product deflator between 2012 and 2022



Sources: Statistics Canada, authors' calculations, Labour productivity and related measures by business sector industry and by non-commercial activity consistent with the industry accounts tables 36-10-0480-01, 36-10-0207-01, and 36-10-0104-01.

The results are presented in Chart 1. Between 2012 and 2022, the cumulative growth in the GDP deflator was 26.9%, where 13.7 percentage points of the increase came from the increase in unit labour costs and 13.3 percentage points came from unit non-labour costs. Unit labour costs contributed 50.7% of the cumulative growth in the GDP deflator, smaller than the labour share of GDP in 2019 of 57.0%.[7]

The results are similar when the focus is on the period after the start of the pandemic. Between 2019 and 2022, the cumulative growth in the GDP deflator was 16.8% (Table 1). Unit labour costs accounted for 8.1 percentage points of that growth (or 48.3%), and unit non-labour costs accounted for the remaining

4. GDP is a measure of value-added output and can be determined in a number of ways. This article focuses on the income approach. That is, GDP is the sum of the incomes for the primary factors of production. Alternatively, GDP can be measured using the production approach, the difference between the value of output and the value of intermediate goods and services used in production. Since this article considers the income approach, the impact of the price of intermediate inputs is not explicitly identified but is instead embedded in the contributions of labour and non-labour costs. For example, an increase in intermediate input costs reduces value added, other things constant. This reduced value added is then split between labour and non-labour costs by firms and households.
5. Starting with the identity that nominal GDP equals total compensation of labour and total compensation to capital, an equation that relates growth in the GDP deflator to the change in unit labour costs and change in unit non-labour costs can be derived.
6. The gap between the two was examined by Leung and Macdonald (2022). In brief, unlike the CPI, which relates more to prices faced by households, the GDP deflator is much broader in scope. The GDP deflator also captures price developments in, for example, trade and gross fixed capital formation.
7. Statistics Canada. Table 36-10-0480-01 Labour productivity and related measures by business sector industry and by non-commercial activity consistent with the industry accounts. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=36100480001&request_locale=en.

8.7 percentage points (or 51.7%). In each year, the contribution of labour and non-labour costs varied. At the beginning of the pandemic in 2020, the contribution of unit non-labour costs was -1.3 percentage points, compared with 1.9 percentage points for unit labour costs. In 2021, the contribution of unit non-labour costs became more dominant, at 5.5 percentage points, compared with 2.7 percentage points. In 2022, the contributions were more equal, but the contribution of unit non-labour costs was still larger (4.1 percentage points versus 3.3 percentage points).

Table 1

Contribution of unit labour costs and unit non-labour costs to growth in the gross domestic product deflator in 2020, 2021 and 2022 and to cumulative growth in the gross domestic product deflator between 2019 and 2022

	Growth in gross domestic product deflator	Contribution of unit labour costs	Contribution of unit non-labour costs
	percent	percentage points	
2020	0.6	1.9	-1.3
2021	8.2	2.7	5.5
2022	7.3	3.3	4.1
Cumulative growth 2019 to 2022	16.8	8.1	8.7

Sources: Statistics Canada, authors' calculations, Labour productivity and related measures by business sector industry and by non-commercial activity consistent with the industry accounts tables 36-10-0480-01, 36-10-0207-01, and 36-10-0104-01.

In summary, the contributions of labour and non-labour costs to inflation vary from year to year. They are relatively balanced over longer periods. At the beginning of the pandemic, labour costs contributed more to inflation, but non-labour costs became more important in 2021 and 2022. This is partly attributable to higher prices in the mining and oil and gas extraction industry, where prices are determined globally. Furthermore, interest rates (and the required return on capital) and depreciation have also been rising—not only profits.[8] A more comprehensive assessment can be performed if the higher growth in unit non-labour costs persists and when more detailed data are available.[9]

Authors

Hassan Faryaar and Danny Leung are with the Economic Analysis Division, Analytical Studies and Modelling Branch, at Statistics Canada.

8. The long-term real return on bonds has increased from an average of 0.00% in 2020 to 0.11% in 2021 and 0.99% in 2022 (Bank of Canada, 2023). Moreover, it is more likely that the depreciation rate has also increased during the recovery period because of a higher rate of capacity utilization. For example, industrial capacity utilization in the second quarter of 2022 was 83.8%, the highest rate since the second quarter of 2018 (Statistics Canada, 2022, September 9). For more details on how to estimate the cost of capital, see Barkai (2020).
9. While the GDP deflator for the entire economy is already available, prices at the industry level are less timely. It is therefore not yet possible to remove the effect of the mining and oil and gas extraction sector in the most recent years.

References

Bank of Canada (2023, April 25). Selected bond yields, Bank of Canada. https://www.bankofcanada.ca/rates/interest-rates/canadian-bonds/.

Barkai, S. (2020). Declining labor and capital shares. *The Journal of Finance*, 2421–2463.

Chen, Y., & Tombe, T. (2023). The Rise (And Fall?) of Inflation in Canada: A Detailed Analysis of Its Post-Pandemic Experience. *Canadian Public Policy*. Forthcoming.

Faryaar, H., Leung, D., & Fortier-Labonté, A. (2023). Markups and inflation: Evidence from firm-level data. *Economic and Social Reports*. 3(6).

Gumiel, J., & Hahn, E. (2018). The role of wages in the pick-up of inflation. *Economic Bulletin Boxes*, *5*.

Jarsulic, M. (2022). *Effective Inflation Control Requires Supply-Side Policy.* Center for American Progress. Retrieved from https://www.americanprogress.org/article/effective-inflation-control-requires-supply-side-policy.

Leung, D., & Macdonald, R. (2022). Real Wages and Productivity During the COVID-19 Pandemic. *Economic and Social Reports*. 2(10). https://www150.statcan.gc.ca/n1/pub/36-28-0001/2022010/article/00002-eng.htm.

Morissette, R. (2022). Employer Responses to Labour Shortages. *Economic and Social Reports*. 2(7). https://www150.statcan.gc.ca/n1/pub/36-28-0001/2022007/article/00001-eng.htm.

Stanford, J. (2023, January 20). Profits, Not Wages, Have Driven Canadian Inflation. *Commentary – Centre for Future Work*. https://centreforfuturework.ca/2023/01/20/profits-not-wages-have-driven-canadian-inflation/.

Statistics Canada. (2022, June 9). Rising prices are affecting the ability to meet day-to-day expenses for most Canadians. *The Daily*. https://www150.statcan.gc.ca/n1/daily-quotidien/220609/dq220609a-eng.htm.

Statistics Canada. (2022, September 9). Industrial capacity utilization rates, second quarter 2022. *The Daily*. https://www150.statcan.gc.ca/n1/daily-quotidien/220909/dq220909c-eng.htm.

Statistics Canada. (2023, January 17). Consumer Price Index: Annual review, 2022. *The Daily*. https://www150.statcan.gc.ca/n1/daily-quotidien/230117/dq230117b-eng.htm.

Stiglitz, J., & Regmi, I. (2022). *The Causes of and Responses to Today's Inflation.* Roosevelt Institute. Retrieved from https://rooseveltinstitute.org/publications/the-causes-of-and-responses-to-todays-inflation/.

Tombe, T. (2022, October 14). Are Rising Profits Fueling Inflation? *The Hub.* https://thehub.ca/2022-10-14/trevor-tombe-are-rising-profits-fueling-inflation/#:~:text=In the second quarter of,to just under 9 percent.

Wang, W. (2023). Import Prices and Inflation in Canada. *Economic and Social Reports*. 3(6).