



---

## 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](http://www.statcan.gc.ca).

You can also contact us by

**Email at** [infostats@statcan.gc.ca](mailto: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 |

### Depository Services Program

- |                  |                |
|------------------|----------------|
| • Inquiries line | 1-800-635-7943 |
| • Fax line       | 1-800-565-7757 |

## 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](http://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

© Her Majesty the Queen in Right of Canada as represented by the Minister of Industry, 2022

All rights reserved. Use of this publication is governed by the Statistics Canada [Open Licence Agreement](#).

**An [HTML version](#) is also available.**

*Cette publication est aussi disponible en français.*

---

## Table of contents

Introduction .....	4
Revision process and phases .....	4
Revisions to growth of nominal gross domestic product.....	5
Revisions to growth of real gross domestic product.....	6
Appendix A.....	8
Appendix B.....	9

# The 2018 to 2020 Revisions of the Income and Expenditure Accounts

## Introduction

This article presents revisions to the Gross Domestic Product (GDP) by Income and by Expenditure from the Income and Expenditure Accounts (IEA) for the 2018 to 2020 period. These revisions were reflected in the 2020 Provincial and Territorial Economic Accounts estimates, released on November 9, 2021.

The first and second quarters of 2021 have also been revised. In accordance with standard revision practice, these estimates will continue to be revised in upcoming cycles, and therefore, are excluded from the analysis in this article.

## Revision process and phases

GDP estimates by IEA are subject to various types of revisions that take place with each quarterly release depending on the availability of data and the practicality of implementation. The first-quarter release includes revisions to all quarters of the previous year; the second-quarter release revises only the first quarter of the same year; the third-quarter release (the annual revision) includes revisions to all quarters back three years; and the fourth-quarter release includes revisions to all quarters of the same year.

Occasionally, substantial changes that are made to incorporate new concepts or methods (for example, integration of new SNA concepts) result in comprehensive revisions (back to 1961), and can occur with the annual revision. Appendix A illustrates the revision cycle for GDP, including an explanation of the open period and the vintages.

In this release, new benchmark values from the supply-use tables (SUTs) for the 2018 reference year have been incorporated into the GDP by IEA. SUTs integrate data from a wide range of sources into a balanced accounting framework. They represent the most detailed, coherent accounting system for the structure of the Canadian economy and are considered the most accurate benchmarks on which to base estimates.

Revisions for the 2019 and 2020 reference years incorporated up-to-date information from the Annual Survey of Manufacturing and Logging, the Annual Survey of Research and Development in Canadian Industry, the Annual Census of Mines, government public accounts, and administrative data. These revisions also reflect incorporation of T4 data for 2019 and preliminary T4 data for 2020. Appendix B contains the timeline for data source integration into the IEA by major component of income-based GDP and expenditure-based GDP, using 2018Q1 as an example.

Revisions for the 2020 reference year also reflect pandemic-related disruptions. The pandemic meant suspension of several surveys and other data sources in the spring of 2020, with gradual resumption starting in the summer. As a result, some initial estimates contained assumptions about data, and revisions were necessary in subsequent releases.

This article summarizes the combined impact of revisions from all sources on annual and quarterly GDP, on a nominal and a real basis.

## Revisions to growth of nominal gross domestic product

**Table 1**  
**Revisions to the growth in nominal GDP, annual**

	Previously published	Revised nominal GDP	Revision	Previously published average growth in annual GDP	Revised average growth in annual GDP	Mean absolute revision to the growth in annual GDP
	billions of dollars			percentage		percentage points
2018 to 2020	2,248.93	2,251.24	2.31	1.07	1.10	0.03
2018	2,231.17	2,235.68	4.51	4.23	4.44	0.21
2019	2,310.71	2,311.29	0.58	3.57	3.38	0.19
2020	2,204.91	2,206.76	1.85	-4.58	-4.52	0.06

Source: Statistics Canada, "The 2018 to 2020 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2021.

With incorporation of new benchmark data from the supply-use tables, the level of nominal GDP was revised up by \$4.5 billion in 2018. The nominal GDP growth rate was revised up 0.21 percentage points, largely because of revised business gross fixed capital formation, household spending, and inventories.

In 2019, nominal GDP was revised down by 0.19 percentage points. Upward revisions in business gross fixed capital formation and exports were largely offset by downward revisions in government fixed capital formation and upward revisions in imports.

In 2020, the decline in revised nominal GDP (-4.52%) was slightly less than the previously published decline (-4.58%); nominal GDP was revised up by \$1.8 billion. Upward revisions from higher business gross fixed capital formation and exports were partly offset by downward revisions in household spending and government gross fixed capital formation.

The absolute revision to the growth rate—the difference between the revised average growth rate and the previously published average growth rate—was 0.03 percentage points for the 2018-to-2020 period.

**Table 2**  
**Revisions to the growth in nominal GDP, quarterly**

	Previously published average growth in quarterly GDP	Revised average growth in quarterly GDP	Mean absolute revision to the growth in quarterly GDP
	percentage		percentage points
2018 to 2020	0.62	0.62	0.00
2018	0.57	0.62	0.05
2019	1.22	1.21	0.01
2020	0.06	0.02	0.04

Source: Statistics Canada, "The 2018 to 2020 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2021.

On a quarterly basis, the absolute revision to the growth rate was near zero percentage point for the 2018-to-2020 period, as upward revisions in some quarters offset downward revisions in other quarters. These revisions are consistent with historical averages. Throughout the period, the quarterly trend remained similar to the trend based on previously published estimates.

## Revisions to growth of real gross domestic product

**Table 3**  
Revisions to the growth in real GDP, annual

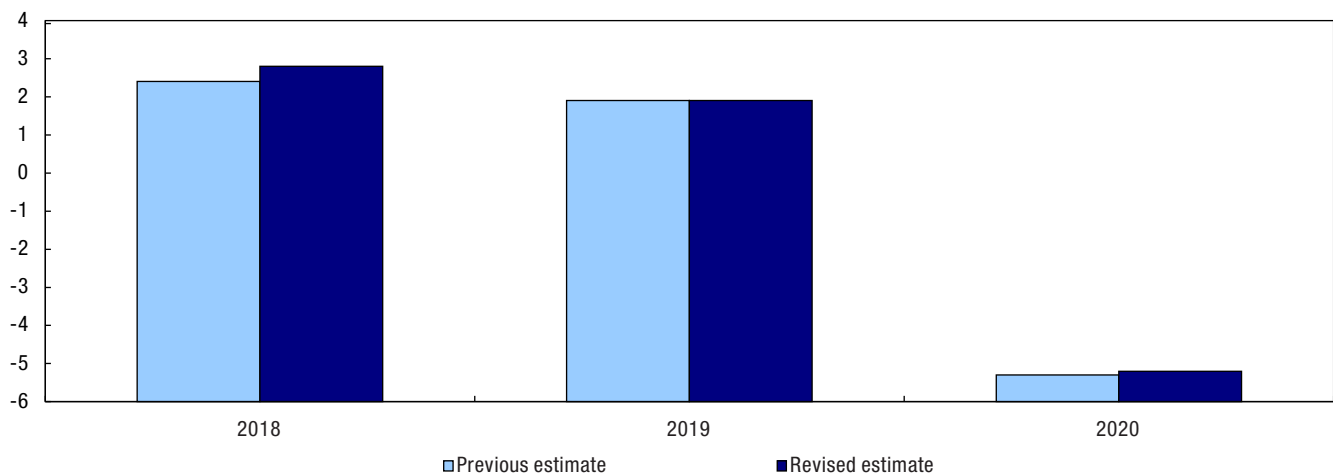
	Previously published average growth in annual real GDP	Revised average growth in annual real GDP	Mean absolute revision to the growth in annual real GDP
	percentage	percentage	percentage points
2018 to 2020	-0.34	-0.19	0.15
2018	2.43	2.78	0.35
2019	1.86	1.88	0.02
2020	-5.31	-5.23	0.08

Source: Statistics Canada, "The 2018 to 2020 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2021.

The mean absolute percentage-point revision to the annual average growth rate of real GDP for the 2018-to-2020 period was 0.15. The revision was lowest in 2019 (+0.02 percentage points) and highest in 2018 (+0.35 percentage points). The growth rate was revised up (+0.08 percentage points) in 2020.

**Chart 1**  
Revisions to real gross domestic product by year

percent change, chained (2012) dollars



Source: Statistics Canada, "The 2018 to 2020 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts*, (13-605-X), 2021.

Based on chained dollars, the growth rate of real GDP was revised up 0.40 percentage points in 2018; unchanged in 2019 and up by 0.10 percentage point in 2020.

**Table 4**  
Revisions to the growth in real GDP, quarterly

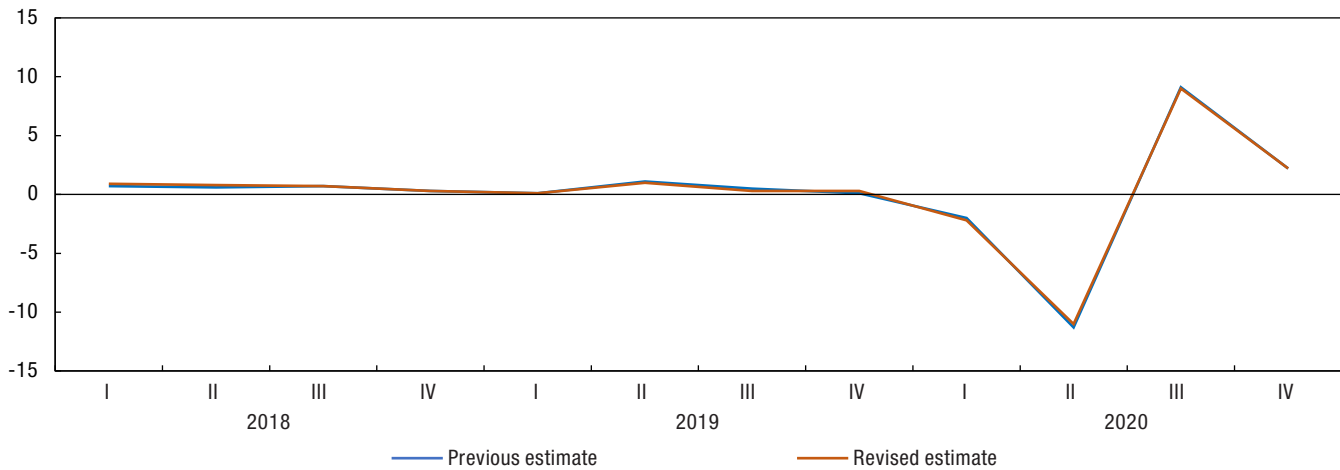
	Previously published average growth in quarterly real GDP	Revised average growth in quarterly real GDP	Mean absolute revision to the growth in quarterly real GDP
	percentage	percentage	percentage points
2018 to 2020	0.17	0.20	0.03
2018	0.57	0.68	0.11
2019	0.43	0.43	0.00
2020	-0.50	-0.51	0.01

Source: Statistics Canada, "The 2018 to 2020 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2021.

The mean absolute percentage-point revision to the annual average growth rate of quarterly real GDP for the 2018-to-2020 period was 0.03. The largest revision was in 2018 (+0.11 percentage points) and the smallest in 2019 (+0.00 percentage point). The growth rate was revised down (-0.01 percentage point) in 2020. The extent of these revisions was minimal and well within historical limits, ranging from -0.33 to 0.43 percentage points over the last decade.

**Chart 2**  
**Revisions to real gross domestic product by quarter**

percent change, chained (2012) dollars



**Source:** Statistics Canada, "The 2018 to 2020 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts*, (13-605-X), 2021.

Based on chained dollars, the movement of real GDP between 2018 and 2020 was very similar to the previously published estimates. In 2018, real GDP was revised up in the first (+0.02 percentage points) and second quarters (+0.02 percentage points) and remained unchanged in the next two quarters.

In 2019, real GDP growth rates underwent slight revisions: no revision in the first quarter and a minor (-0.1 percentage points) in the second quarter, down 0.2 percentage points in the third quarter and up 0.2 percentage points in the fourth quarter. In 2020, the real GDP growth rate was revised down (-0.2 percentage points) in the first quarter, followed by an upward revision of 0.3 percentage points in the second and a downward revision (-0.1 percentage point) in the third quarter. The growth rate was unchanged in the fourth quarter. At this point in the revision cycle for 2020, revisions are within range of the historical average.

## Appendix A

Figure 1  
GDP revision cycle

Reference year Reference quarter	Year-3				Year-2				Year-1				Current year				Year+1				Year+2				Year+3								
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
Main production period													May	Aug	Q3 Apr to Nov	Feb																	
May release									[ v1 ]				[ v2 ]	[ v1 ]																			
August release												[ v2 ]	[ v1 ]																				
November release	[ ]										v3	v3	v2	v1																			
February release												[ v4 ]	[ v3 ]	[ v2 ]	[ v1 ]																		
												[ v5 ]	[ v4 ]	[ v3 ]	[ v2 ]	[ v1 ]																	
																[ v2 ]	[ v1 ]																
					[ ]						v4	v6	v5	v4	v3	v3		[ v1 ]															
																[ v4 ]		[ v1 ]															
																[ v5 ]			[ v1 ]														
									[ ]		v5	v7	v6	v5	v4	v6				[ v1 ]													
																			[ v1 ]														
																			[ v1 ]														
																				[ v1 ]													
																					[ v1 ]												
																						[ v1 ]											



## Appendix B

### Revisions due to different vintages of source data

**Table A1**  
**GDP by income components, example reference period 2018q1**

	<b>Initial quarterly estimate</b>	<b>First annual revision</b>	<b>Second annual revision</b>	<b>Third annual revision</b>	<b>Fourth annual revision</b>
Release	2018q1 (May 2018)	2018q3 (November 2018)	2019q3 (November 2019)	2020q3 (November 2020)	2021q3 (November 2021)
<i>General notes</i>	<i>Incorporation of monthly surveys</i>	<i>Revisions to monthly surveys</i>	-	<i>Incorporation of annual surveys</i>	<i>Incorporation of Supply-use table</i>
Compensation of employees	Survey of Employment, Payroll and Hours (SEPH), Labour Force Survey (LFS), Employment and Social Development Canada data	-	T4 preliminary (RY2018) for provincial/territorial (PT) aggregates	T4 final (RY2018) by PT and by industry	SUT industry refinements (RY2018)
Gross operating surplus	Quarterly Survey of Financial Statements (QSFS), Regulatory data (for banks); GFS for Government Business Enterprises	-	Third party data	Annual Financial and Taxation Statistics	SUT benchmark
Gross mixed income:	SEPH, LFS, Monthly Retail Trade Survey, Monthly Survey of Manufacturing, gross output by industry	-	Tax data (T1 and T5013)	Tax data updates	SUT benchmark
Rent portion	Consumer Price Index, Stock in units	-	-	-	-
Farm portion	Farm cash receipts	Crop data	-	-	SUT benchmark
Taxes less subsidies <sup>1</sup>	Government Finance Statistics (GFS): preliminary/modelled	Updated GFS: late filers, Public Accounts (PA)	Revised GFS: late PA, local government first estimate	Revised GFS: local government updates	SUT benchmark

1. Indigenous general governments are estimated using Financial Statements, the estimates are refined as more statements become available

Source: Statistics Canada, "The 2018 to 2020 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2021.

**Table A2**  
**GDP by expenditure components, example reference period 2018q1**

	Initial quarterly estimate	First annual revision	Second annual revision	Third annual revision	Fourth annual revision
Release	2018q1 (May 2018)	2018q3 (November 2018)	2019q3 (November 2019)	2020q3 (November 2020)	2021q3 (November 2021)
<i>General notes</i>	<i>Incorporation of monthly surveys</i>	<i>Revisions to monthly surveys</i>	-	<i>Incorporation of annual surveys</i>	<i>Incorporation of Supply-use table</i>
<b>Household Final consumption expenditure:</b>					
Goods	Monthly retail trade (MRTS), New motor vehicle survey, trade in goods, vehicle registrations	Retail commodity survey	-	Survey of Household Spending (SHS) <sup>1</sup>	SUT benchmark by product
Services	GST remittances, trade in services, Canadian Radio-television and Telecommunications Commission, monthly GDP by industry	-	-	SHS; Food services & drinking places; accommodation services	SUT benchmark by product
Government Final Consumption	Government Finance Statistics (GFS): preliminary/modelled	Updated GFS: late filers, Public Accounts (PA)	Revised GFS: late PA, local government first estimate	Revised GFS: local government updates	SUT benchmark
NPISH Final Consumption	Forecast	-	-	Tax data (T3010 and Non-Profit Organizations)	-
<b>Business Capital Investment:</b>					
Residential: new, renovations, ownership transfer costs	Labour estimates, Investment in Building Construction (IBC), CMHC, Wholesale/retail sales, Survey of Building Permits, Canadian Real Estate Association (CREA)	-	-	SHS <sup>2</sup> , Real Estate Agents and Brokers survey	-
Non-residential buildings	IBC, CREA	Annual Capital and Repair Expenditures (CAPEX) intentions	CAPEX preliminary	CAPEX actual	SUT benchmark by asset
Non-residential engineering	Quarterly Oil and Gas CAPEX, labour indicators, drilling and rigging activities, financial reports				
Machinery and equipment	Imports, inventories, Monthly Survey of Manufacturing (MSM)				
Intellectual Property Products	Labour estimates, Research and development intentions, imports, drilling and rigging activities	-	Gross Domestic Expenditures on Research and Development	Research and Development in Canadian Industry	
Government capital investment	Similar to business for first vintage, by asset	CAPEX intentions: provincial government	CAPEX preliminary: provincial government; GFS: federal	CAPEX actual: provincial; GFS local government; Provincial housing corporations	
<b>Change in inventories:</b>					
Non-farm	MSM, MRTS, Monthly Wholesale Trade, energy surveys, QSFS	-	-	Annual Survey of Manufacturing and Logging, Annual Wholesale Trade Survey, Annual Census of Mines, Annual Retail Trade Survey	SUT benchmark
Farm	Farm cash receipts	Crop data	-	-	SUT benchmark
<b>International trade:</b>					
Goods	Canadian International Merchandise Trade, Canadian Energy Regulator	-	-	-	SUT benchmark
Services	Preliminary Balance of Payments (BOP) surveys	BOP commercial services surveys	Tourism/education surveys	-	

1. For reference years that SHS is available

2. For reference years that SHS is available

Source: Statistics Canada, "The 2018 to 2020 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2021.