



---

## 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** [STATCAN.infostats-infostats.STATCAN@canada.ca](mailto:STATCAN.infostats-infostats.STATCAN@canada.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, 2018

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*

---

# The 2015 to 2017 revisions of the Income and Expenditure Accounts

## Introduction

This article describes revisions to the Gross Domestic Product (GDP) by Income and by Expenditure Accounts for the 2015 to 2017 period. These data are released at the same time as the 2017 Provincial and Territorial Economic Accounts estimates, which include revisions to the time series.

The first two quarters of 2018 are also revised. However, in accordance with standard revision practice, these estimates will continue to be revised during upcoming cycles. Therefore, they are not included in the analysis in this article.

## Revision process

GDP estimates by Income and by Expenditure Accounts are subject to three types of revisions. The first involves incorporating the latest benchmark from the supply and use tables. The second involves incorporating data from the latest annual surveys and administrative sources. The third type of revision, which is performed less frequently, entails the incorporation of new concepts, methods, accounting standards and classification systems.

The 2015 to 2017 GDP revisions by Income and by Expenditure Accounts include all three types of revisions. In general, the first two, which are statistical in nature, are carried out annually and impact only the last three years of the time series.

The statistical revisions to GDP reflect the incorporation of the most current data sources, including survey results, administrative data, public accounts, and the annual supply and use tables. These tables integrate data from the highest-quality sources available to Statistics Canada in a rigorous, detailed 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. In this release, new benchmark values from the supply and use tables for the 2015 reference year have been incorporated into the GDP by Income and by Expenditure Accounts. New benchmark information (from annual surveys and administrative data) is also included for the last two years (2016 and 2017).

The third type of revision, which was conducted during this cycle, is particularly noteworthy, as it includes an update of the reference year for real estimates from a 2007 base year to a 2012 base year. In addition, updates were made to the international trade classification to align with the North American Product Classification System (NAPCS) 2017 product classification and the introduction of a new price basket applied to calculate price indices.

This article briefly describes and explains the impact of the 2015 to 2017 revisions on annual and quarterly GDP, on both a nominal and a real basis. It also examines the revisions to the various components of GDP by Income and by Expenditure Accounts.

## Revisions to the growth of nominal GDP

The revision to the annual growth rate of nominal GDP decreased the rate by 0.5 percentage points in 2015, and by 0.1 percentage points in 2016. The revisions to 2015 were due to the incorporation of new benchmark data from the 2015 supply and use tables. Revisions to income-based GDP in 2015 resulted primarily from decreases to gross operating surplus and to a lesser extent from decreases to gross mixed income. Expenditure-based 2015 downward revisions resulted from broader based declines in gross fixed capital formation, government final consumption expenditure, non-farm inventories and lower exports of goods. These were moderated slightly by higher household final consumption expenditure and lower imports.

Income-based revisions to 2016 resulted from large declines in compensation of employees based on the integration of final T4 tax data for wages, which showed that total wages declined in 2016 and did not increase as the survey indicators suggested. Smaller revisions were observed in gross operating surplus and gross mixed income. Expenditure-based revisions for 2016 were widespread, with the exception of small upward revision to exports of services.

For the 2015 to 2017 period, the mean absolute revision to the annual growth rate of nominal GDP was 0.1 percentage points.

**Table 1**  
**Revisions to the growth of nominal gross domestic product, annual**

	Revised average growth in annual GDP	Previously published average growth in annual GDP	Mean absolute revision to the growth in annual GDP
	percent		percentage points
2015 to 2017	2.44	2.55	0.11
2015	-0.22	0.24	0.46
2016	1.91	2.03	0.12
2017	5.62	5.39	0.23

Source: Statistics Canada, "The 2015 to 2017 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts (13-605-X)*, 2018.

On a quarterly basis, the revisions to the growth rates of nominal GDP resulted in little change relative to the previous estimates. The magnitude of the revisions for the 12 quarters covered by the revision period (2015 to 2017) ranged between an upward revisions of 0.3 percentage points to a downward revision of 0.3 percentage points. These revisions are consistent with historical averages. Overall, there are upward revisions for six quarters, downward revisions for five quarters, and no changes for one quarter. Throughout the period, the quarterly trend remained similar to the trend based on the previously published estimates.

**Table 2**  
**Revisions to the growth of nominal gross domestic product, quarterly**

	Revised average growth in quarterly GDP	Previously published average growth in quarterly GDP	Mean absolute revision to the growth in quarterly GDP
	percent		percentage points
2015 to 2017	0.67	0.69	0.02
2015	-0.27	-0.11	0.16
2016	0.98	0.98	0.00
2017	1.29	1.20	0.09

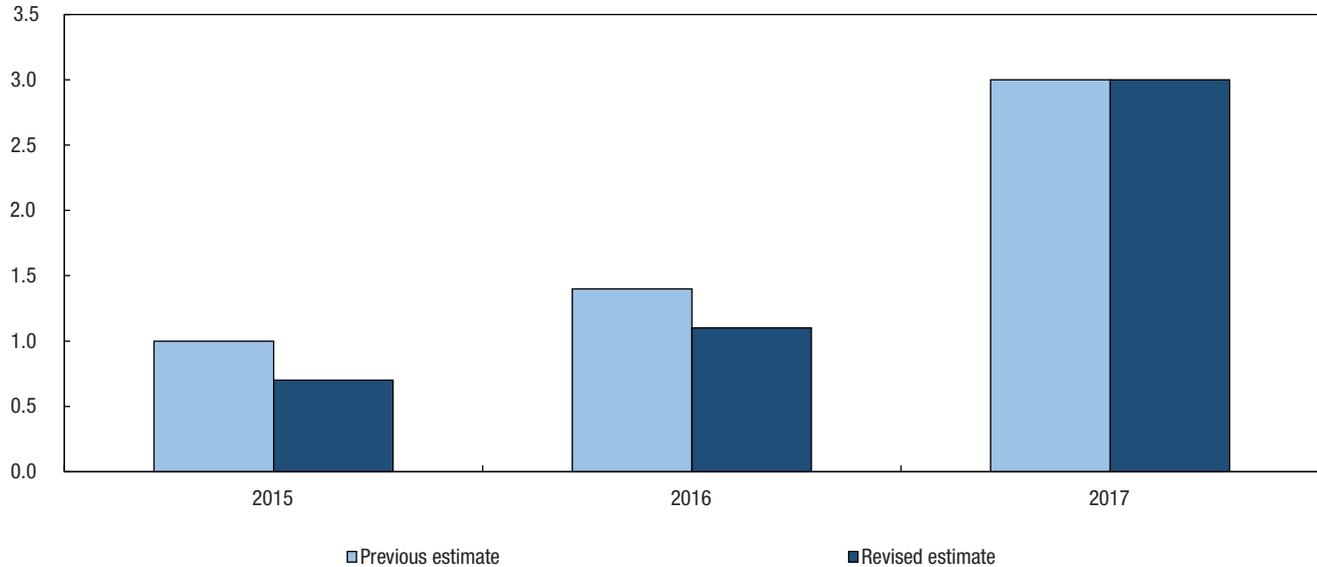
Source: Statistics Canada, "The 2015 to 2017 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts (13-605-X)*, 2018.

## Revisions to the growth of real GDP

The annual growth rate of real GDP was revised from 2013 onward as a result of the rebasing/re-referencing to 2012 as well as the implementation of the updated trade classification and price basket. Real GDP was revised down by 0.3 percentage points in 2015 and 0.3 percentage points in 2016.

**Chart 1**  
Revisions to real gross domestic product by year, chained (2012) dollars

percent change



Source: Statistics Canada, "The 2015 to 2017 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts (13-605-X)*, 2018.

The mean absolute percentage point revision to the annual growth rate of real GDP for the 2015 to 2017 period was 0.2 (Table 3).

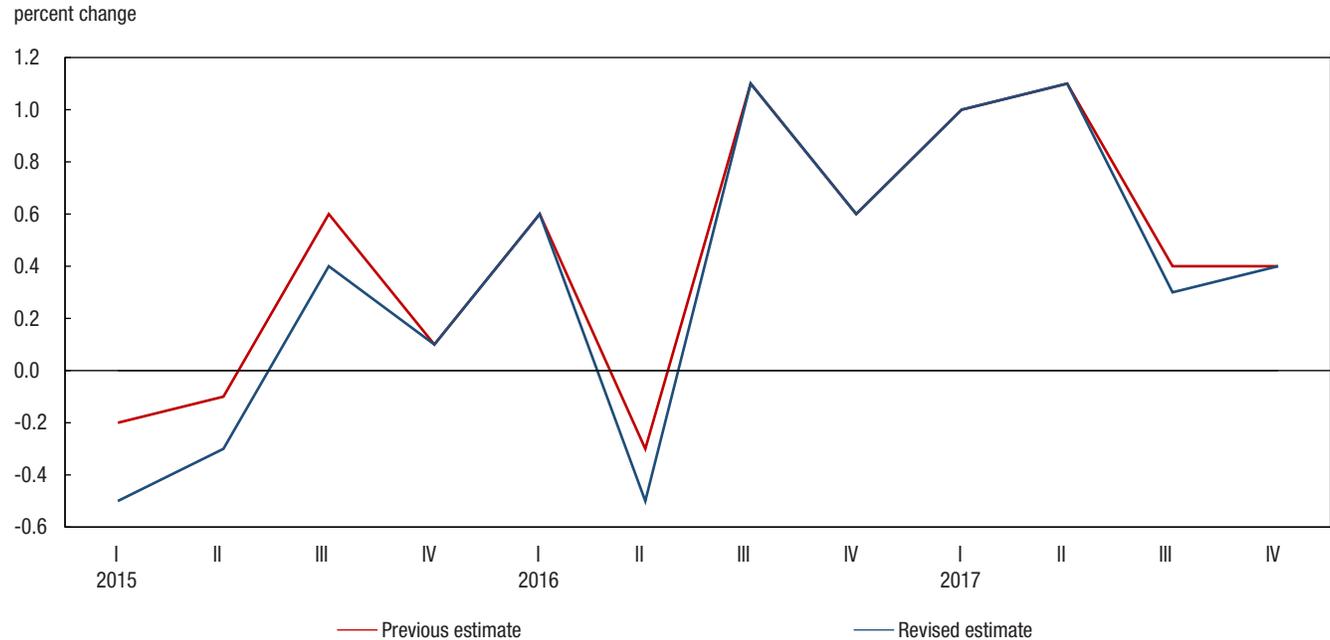
**Table 3**  
Revisions to the growth of real gross domestic product, annual

	Revised average growth in annual real GDP	Previously published average growth in annual real GDP	Mean absolute revision to the growth in annual real GDP
	percent	percent	percentage points
2015 to 2017	1.59	1.82	0.23
2015	0.67	1.00	0.33
2016	1.10	1.41	0.31
2017	2.99	3.05	0.06

Source: Statistics Canada, "The 2015 to 2017 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts (13-605-X)*, 2018.

On a quarterly basis, the movement of real GDP between 2015 and 2017 differed slightly from the previously published estimates (Chart 2).

**Chart 2**  
**Revisions to real gross domestic product by quarter, chained (2012) dollars**



Source: Statistics Canada, "The 2015 to 2017 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts (13-605-X)*, 2018.

In 2015, the real GDP estimates on a quarterly basis underwent a downward revisions as a result of the annual downward revision. The first quarter was revised down by 0.3 percentage points, and both the second and third quarters revised down by 0.2 percentage points.

For 2016, real GDP growth was revised only in the second quarter, down by 0.2 percentage points.

For 2017, revisions of real GDP growth were negligible, with the third quarter being revised down 0.1 percentage points.

Overall, the mean absolute revision to the quarterly growth rate of real GDP for the entire period was 0.1 percentage points.

**Table 4**  
**Revisions to the growth of real gross domestic product, quarterly**

	Revised average growth in quarterly real GDP	Previously published average growth in quarterly real GDP	Mean absolute revision to the growth in quarterly real GDP
	percent	percent	percentage points
2015 to 2017	0.35	0.44	0.09
2015	-0.10	0.08	0.18
2016	0.45	0.49	0.04
2017	0.71	0.74	0.03

Source: Statistics Canada, "The 2015 to 2017 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts (13-605-X)*, 2018.

## Revisions to the level of annual nominal GDP

For the 2015 to 2017 period, the revisions to the GDP by income and by expenditure accounts were mainly attributable to the new supply-use benchmarks for the 2015 reference year and to the incorporation of updated source data in all subsequent years.

These statistical revisions resulted in a downward movement of the GDP for the period. Overall, relative to the previously estimated GDP values, the level of nominal GDP was revised downward in all three years: by \$9.1 billion for 2015, by \$11.7 billion for 2016, and by \$7.7 billion for 2017.

In each of these years, revisions were made to various components of GDP. The main contributors on the income side were decreases in the value of compensation of employees, gross operating surplus and gross mixed income. On the expenditure side, the main contributors were declines in gross fixed capital formation, exports of goods and investment in business inventories. In 2015, the supply-use tables utilized the detailed information in the annual business surveys and the final estimates of the capital repairs and expenditure survey. In 2016, the contributing components to the downward revisions were general government and household final consumption expenditure, gross fixed capital formation, investment in business inventories and higher imports of services. In 2017, there were declines in all major components including higher imports. This was mitigated slightly by higher exports of services.

## Revisions to the components of the GDP by income account

The main source of revisions for 2015 was gross operating surplus, the value of which was adjusted downward by \$11.1 billion, almost exclusively in non-financial corporations' surplus. In 2016, the main source of revision was the value of compensation of employees, which was reduced by \$17.5 billion. In 2017, the main contributor was a \$13.5 billion reduction in compensation of employees. There were small declines in gross mixed income in all three years.

These large revisions are mainly due to the new supply-use system benchmarks in 2015, the incorporation of operating surplus estimates for the financial or non-financial corporations sector based on 2017 tax data and the incorporation of new data from the Canada Revenue Agency, particularly for wages and salaries.

**Table 5**  
**Revisions to income-based gross domestic product components**

	Revised average level	Previously published average level	Average revision
millions of dollars			
<b>Average 2015 to 2017</b>			
Compensation of employees	1,041,387	1,051,761	-10,374
Gross operating surplus	534,183	534,198	-15
Gross mixed income	240,550	241,558	-1,007
Taxes less subsidies on production	91,760	91,402	358
Taxes less subsidies on products and imports	140,315	139,533	782
GDP at market prices	2,049,060	2,058,544	-9,483
<b>2015</b>			
Compensation of employees	1,026,846	1,026,914	-68
Gross operating surplus	504,645	515,737	-11,092
Gross mixed income	230,755	232,366	-1,611
Taxes less subsidies on production	88,570	87,853	717
Taxes less subsidies on products and imports	133,622	133,099	523
GDP at market prices	1,985,829	1,994,911	-9,082
<b>2016</b>			
Compensation of employees	1,026,483	1,044,005	-17,522
Gross operating surplus	524,953	518,979	5,974
Gross mixed income	240,322	241,415	-1,093
Taxes less subsidies on production	90,686	90,507	179
Taxes less subsidies on products and imports	140,222	139,443	779
GDP at market prices	2,023,824	2,035,506	-11,682
<b>2017</b>			
Compensation of employees	1,070,831	1,084,363	-13,532
Gross operating surplus	572,951	567,877	5,074
Gross mixed income	250,574	250,892	-318
Taxes less subsidies on production	96,024	95,845	179
Taxes less subsidies on products and imports	147,101	146,056	1,045
GDP at market prices	2,137,528	2,145,214	-7,686

Source: Statistics Canada, "The 2015 to 2017 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts (13-605-X)*, 2018.

## Revisions to the components of the GDP by expenditure account

Table 6 summarizes the revisions to the main components of the GDP by expenditure account. The estimates for household final consumption expenditure were revised upward by \$799 million in 2015 from increases to both goods and services. In 2016, estimates were revised down \$1.6 billion as a result of a decrease of \$1.7 billion in goods consumption. This was partly offset by a \$105 million upward revision to the consumption of services. Again in 2017, there were offsetting revisions, consumption of goods was revised down by \$1.4 billion, while consumption of services was revised upward by \$1.4 billion.

From 2015 to 2017, government final consumption expenditures were revised to a lower level than previously reported: -\$1.5 billion, -\$3.3 billion, and -\$3.9 billion, respectively. These revisions reflect data from the new supply and use benchmarks for 2015 and new public accounts data for provincial, territorial, and local governments.

Business gross fixed capital formation was revised downward for each year in the 2015 to 2017 period. The revisions for 2015 were -\$3.0 billion, in 2016 -\$2.9 billion, and -\$3.8 billion in 2017. In all three years, the main factors in these downward revisions were machinery and equipment and intellectual property products. The revisions reflect final estimates of capital investment data from the supply and use tables, which incorporate new data from the Capital and Repair Expenditures Survey. These were offset slightly in 2015 by a \$1.7 billion increase to general government gross fixed capital formation. In 2016 and 2017, general government gross fixed capital formation decreased by \$4.7 billion and \$2.7 billion, respectively.

The revisions to the estimates of business inventories were most pronounced in 2015 and 2017, decreasing by \$4.0 billion and increasing by \$2.3 billion, respectively. These revisions reflect new data from the Annual Survey of Manufacturing, the Annual Wholesale Trade Survey, and the Annual Retail Trade Survey.

Exports of goods and services were revised down in 2015 by \$1.1 billion, up in 2016 by \$876 million, and up again in 2017 by \$935 million. The downward revisions to 2015 were primarily in exports of goods, while the increases to 2016 and 2017 were the result of higher services. These revisions reflect new data from the Annual Survey of International Trade in Services, which were incorporated into the GDP by expenditure accounts. These upward revisions were predominantly due to the revision of exports of commercial services.

International imports of goods and services were revised upward in 2016 and 2017— \$1.3 billion and \$2.6 billion, respectively. Again, the major portion was due to increases to imports of services, particularly, commercial and transportation services.

**Table 6**  
**Revisions to expenditure-based gross domestic product components**

	Revised average level	Previously published average level	Average revision
millions of dollars			
<b>Average 2015 to 2017</b>			
Household final consumption expenditure	1,160,059	1,160,312	-253
Government final consumption expenditure	428,225	431,113	-2,888
Non-profit institutions serving households' final consumption expenditure	30,680	29,558	1,122
Business gross fixed capital formation	394,958	398,170	-3,212
Government gross fixed capital formation	77,427	79,311	-1,885
Non-profit institutions serving households' gross fixed capital formation	2,979	3,054	-75
Inventories	5,621	6,215	-594
Exports	640,918	640,684	235
Imports	690,941	689,780	1,161
Gross domestic product at market prices	2,049,060	2,058,544	-9,483
<b>2015</b>			
Household final consumption expenditure	1,118,489	1,117,690	799
Government final consumption expenditure	415,561	417,011	-1,450
Non-profit institutions serving households' final consumption expenditure	28,575	28,535	40
Business gross fixed capital formation	395,432	398,389	-2,957
Government gross fixed capital formation	76,344	74,618	1,726
Non-profit institutions serving households' gross fixed capital formation	2,956	2,981	-25
Inventories	-46	3,940	-3,986
Exports	627,848	628,955	-1,107
Imports	677,939	678,265	-326
Gross domestic product at market prices	1,985,829	1,994,911	-9,082
<b>2016</b>			
Household final consumption expenditure	1,153,256	1,154,829	-1,573
Government final consumption expenditure	426,282	429,594	-3,312
Non-profit institutions serving households' final consumption expenditure	30,975	29,492	1,483
Business gross fixed capital formation	386,668	389,592	-2,924
Government gross fixed capital formation	75,064	79,762	-4,698
Non-profit institutions serving households' gross fixed capital formation	2,905	3,065	-160
Inventories	-606	-487	-119
Exports	631,229	630,353	876
Imports	680,791	679,538	1,253
Gross domestic product at market prices	2,023,824	2,035,506	-11,682
<b>2017</b>			
Household final consumption expenditure	1,208,432	1,208,417	15
Government final consumption expenditure	442,831	446,734	-3,903
Non-profit institutions serving households' final consumption expenditure	32,490	30,647	1,843
Business gross fixed capital formation	402,774	406,528	-3,754
Government gross fixed capital formation	80,872	83,554	-2,682
Non-profit institutions serving households' gross fixed capital formation	3,077	3,117	-40
Inventories	17,515	15,192	2,323
Exports	663,678	662,743	935
Imports	714,094	711,538	2,556
Gross domestic product at market prices	2,137,528	2,145,214	-7,686

Source: Statistics Canada, "The 2015 to 2017 revisions of the Income and Expenditure Accounts", *Latest Developments in the Canadian Economic Accounts (13-605-X)*, 2018.

## **Revisions as a result of the rebasing/re-referencing to 2012 and the updates to the merchandise trade program**

The update of the merchandise trade program to the NAPCS 2017 classification and the incorporation of a new price basket did not cause notable revisions to nominal trade or GDP, but did result in small revisions to annual real growth rates in 2013 and 2014. In 2013, the annual real GDP declined by 0.2% from 2.5% to 2.3%, owing almost entirely to a 0.1% decline in exports of goods and a 0.1% increase in imports of goods. New trade prices had only a negligible effect on inventories, gross fixed capital formation, and final household consumption, as many commodities in these other GDP components are traded internationally.

The impact in 2014 was minimal, as the annual real GDP growth rate rose less than 0.1%, resulting mainly from a 0.1% increase in exports of goods.

The new trade classification was not applied before 2012, as the historical time series back to 1981 was preserved by linking to the prior classification at higher levels of aggregation, which resulted only in rounding changes to the historical growth rates.