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The 2015 to 2018 revisions of the National Tourism Indicators

1. Introduction

With the release of the third quarter 2018 estimates of the National Tourism Indicators (NTI) in January 2019, data were revised from the first quarter of 2015 to the second quarter of 2018. Estimates in real terms were also updated to reference year 2012. This change affects the NTI data adjusted for inflation from 1986 to date. New and revised data from the Canadian System of Macroeconomic Accounts (CSMA) were introduced. This article explains the impact of new and revised data on the NTI.

In 2017, tourism spending was revised from \$97.5 billion to \$97.2 billion (in nominal terms), all of which came from revisions to domestic demand. Tourism domestic demand was revised down from \$76.2 billion to \$75.8 billion, while tourism exports increased by \$0.2 billion, to \$21.5 billion. The growth rate of tourism spending (in nominal terms) was revised from +6.4% to +6.6% in 2017. Tourism spending (in nominal terms) was virtually unchanged in 2015 and revised down in 2016. Similarly, the growth rates of tourism spending were virtually unchanged in 2015 and revised down in 2016.

On a quarterly basis between the first quarter of 2015 and the second quarter of 2018, growth in tourism spending (in real terms) was revised down in seven quarters, up in six quarters and unchanged in one quarter (see Table 1.2). Revised quarterly growth rates were within 0.2 percentage points of previously-published estimates in 11 of 14 quarters, and all were within 0.4 percentage points.

2. Sources of revisions

The revisions to the NTI mostly came from updated indicators from the CSMA and indirectly from the 2015 Supply and Use Tables (SUT). These revisions are described below.

2.1 Revisions to the Canadian System of Macroeconomic Accounts

Current revisions to household final consumption expenditure, to gross domestic product (GDP) by industry and to the balance of payments for the first and second quarters of 2018 led to quarterly updates to the NTI for that year.

The regular annual revisions to the same programs, released for the period 2015 to 2017 in November 2018 also led to quarterly updates to NTI estimates for this period.

As a result of these revisions, new benchmark information from other sources, notably the Survey of Household Spending, as well as transportation, food services and drinking places and accommodation industry surveys, was brought into the NTI indirectly. This affected the NTI quarterly movements and annual levels for all open years.

2.2 Supply and Use Tables, 2015

The 2015 SUT benchmarks released in November 2018 were used to benchmark indicators throughout the CSMA, leading to revisions to quarterly supply, demand, GDP and employment of the NTI from the first quarter of 2015 to the second quarter of 2018.

2.3 Updating estimates in real terms to reference year 2012

All NTI estimates in real terms were updated to reference year 2012, leading to revisions to real tourism supply, demand and GDP, as well as to tourism implicit price indices.

3. Impact of revisions on the National Tourism Indicators, 2015 to 2017

3.1 Revisions to components of tourism demand (nominal terms)

Annual revisions to the components of tourism demand (in nominal terms) varied. The largest contributor to the downward revision was in transportation (see Table 2).

Transportation was revised downwards in all years by an average of \$0.4 billion, mainly in passenger air transport. In 2017, transportation was revised down \$0.6 billion. Downward revisions to vehicle fuel also contributed to the lower estimates.

Estimates of accommodation services were lowered by \$0.1 billion in 2015, while 2016 and 2017 were revised up by \$0.1 billion and \$0.4 billion, respectively. Food and beverage services were lowered in all years, by an average of \$0.1 billion, while spending on other tourism goods and services (e.g., recreation and entertainment, and travel services) were revised up marginally in all years.

Spending on non-tourism goods and services (e.g., groceries, urban transit and other miscellaneous products) was revised up by \$0.2 billion in 2015 and virtually unchanged in 2016 and 2017.

3.2 Revisions to components of tourism demand (growth rates in real terms)

Annual growth rates of tourism spending (in real terms) were virtually unchanged in 2015 and 2017, and revised down in 2016 (see Table 3). As a result of the downward revision in 2016, the cumulative growth of tourism demand was revised from +11.4% between 2015 and 2017, to +10.5%.

Growth in transportation and food and beverage services were revised down in all years. In 2017, transportation was revised down 0.5 percentage points, from +6.8% to +6.3%, while growth in food and beverage services (+2.8%) was slightly lower than previously-published estimates.

Accommodation was revised down in 2015, and up in 2016 and 2017. In 2017, growth in accommodation was revised up 2.1 percentage points to +4.0%.

Growth in other tourism goods and services was revised up 0.2 percentage points to +2.4% in 2017, while non-tourism goods and services was revised down 0.5 percentage points to +2.6%.

3.3 Revisions to employment generated by tourism demand

Tourism employment was revised up in 2015 and virtually unchanged in 2016 and 2017 (see Table 4). As a result, growth in tourism employment was revised up 0.3 percentage points in 2015, down 0.3 percentage points in 2016, and was unchanged in 2017. In 2017, tourism employment was slightly revised down to 735,800 from a previously published estimate of 736,100. Cumulatively, growth in tourism employment was unchanged, increasing 5.1% between 2015 and 2017.

Increased tourism employment in transportation and non-tourism industries was offset by downward revisions in food and beverage services industries. Tourism employment in transportation was revised up 0.7% in 2017, mostly stemming from an upward revision in 2015, while tourism jobs in non-tourism industries were revised up in all years, culminating in a +0.4% revision in 2017. Tourism jobs in the food and beverage services industry were revised down 0.4% in 2016 and 2017. Between 2015 and 2017, cumulative growth for transportation, accommodation, food and beverage services, other tourism industries and non-tourism industries were within 0.7 percentage points of previously published estimates.

3.4 Revisions to tourism gross domestic product (growth rates in real terms)

Tourism GDP annual growth rates were revised down in all years, within 1.4 percentage points of the previously published estimates (see Table 6). The mean absolute revision was 0.7 percentage points. In 2017, tourism GDP was revised down 0.1 percentage points to an increase of 4.0%.

New estimates from the 2015 SUT led to larger revisions in growth at the component level for that year. In 2015, tourism GDP growth in transportation, accommodation, food and beverage services and other tourism industries were revised down between 0.3 and 5.1 percentage points. Growth in tourism GDP was revised upwards in non-tourism industries by 0.9 percentage points.

In 2017, growth rates in tourism GDP at the component level were all within 0.3 percentage points of the previously-published estimates. The mean absolute revision at the component level was 0.1 percentage points.

4. National Tourism Indicators revision policy

The NTI revision policy allows for regular incorporation of new and revised data, including regular benchmarking to the Canadian Tourism Satellite Account (CTSA). Revisions to the NTI are the result of new or revised data in the core economic accounts. The revision policy serves to improve the reliability and accuracy of the NTI time series estimates. It is consistent with the policy followed for the CSMA, which governs four types of revisions: current, annual, comprehensive, and updating to reference year 2012. Each of these are described below.

During the current reference year, estimates for any quarter are subject to revision at any subsequent quarter within the same year. For instance, a first-quarter estimate is revised on the release of the second-, third-, and fourth-quarter estimates for the same year. These are called current revisions, and allow improvements to estimates through the incorporation of the most up-to-date information available (including revisions to source data as a result of late reporting).

At the time of first- and third-quarter releases, all estimates for a given number of years back from the current year are subject to revision. These annual revisions allow for the incorporation of the most up-to-date information from censuses, annual surveys, taxation statistics, public accounts, etc., which become available well after the fact. The number of years open to revision mirror the CSMA revision for that year. Furthermore, when a new set of CTSA benchmarks is incorporated into the NTI, the revision period is extended back to the previous CTSA. Thus, the window for revision in the NTI varies according to the frequency of CTSA updates and any revisions to standard macroeconomic indicators in that year.

Estimates are also subject to periodic comprehensive revisions mainly to introduce new concepts, implement refined methods, and incorporate newly available data sources. Comprehensive revisions typically result in changes to the entire time series.

Updating the estimates expressed in real terms to a new reference year, as with the third quarter 2018 release of the NTI, is normally carried out every five years. Updating of constant price series is done to remove bias in measures of inflation-adjusted growth as relative prices in the economy evolve away from those of the reference year. Updating of constant price series involves revisions to only price indices and constant price aggregates, leaving aggregates at current prices unaffected.

Tables

Table 1.1
Revisions to tourism demand, not seasonally adjusted at current prices

	Revised estimate ¹	Previous estimate ²	Revision ³	Revision ⁴	Revised estimate ¹	Previous estimate ²	Revision ³
	millions of dollars			%	% change, year-to-year		% points
First quarter 2015	16,701	16,668	33	0.2	1.9	1.7	0.2
Second quarter 2015	20,936	20,927	9	0.0	1.3	1.2	0.0
Third quarter 2015	31,582	31,587	-5	0.0	1.8	1.8	0.0
Fourth quarter 2015	18,662	18,738	-76	-0.4	1.5	1.9	-0.4
First quarter 2016	17,199	17,232	-33	-0.2	3.0	3.4	-0.4
Second quarter 2016	21,571	21,626	-55	-0.3	3.0	3.3	-0.3
Third quarter 2016	32,774	32,989	-215	-0.7	3.8	4.4	-0.7
Fourth quarter 2016	19,648	19,771	-123	-0.6	5.3	5.5	-0.2
First quarter 2017	18,387	18,380	7	0.0	6.9	6.7	0.2
Second quarter 2017	23,136	23,107	29	0.1	7.3	6.8	0.4
Third quarter 2017	34,775	34,930	-155	-0.4	6.1	5.9	0.2
Fourth quarter 2017	20,936	21,057	-121	-0.6	6.6	6.5	0.1
First quarter 2018	19,436	19,395	41	0.2	5.7	5.5	0.2
Second quarter 2018	24,526	24,446	80	0.3	6.0	5.8	0.2

1. The "revised estimates" are the result of the 2018 third quarter revisions.

2. The "previous estimates" for 2015 and 2016 are the result of the fourth quarter 2016 revisions. The "previous estimates" for 2017 are the result of first quarter 2018 annual revisions. The "previous estimates" for 2018 are the result of current-year revisions.

3. The revision is the revised estimate minus the previous estimate.

4. The percentage revision is the revision as a percentage of the previous estimate.

Source: Statistics Canada, "The 2015 to 2018 revisions of the National Tourism Indicators", *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2019.

Table 1.2
Revisions to tourism demand, seasonally adjusted at 2012 constant prices

	Revised estimate ¹	Previous estimate ²	Revision ³
	% change, preceding quarter		% points
First quarter 2015	0.4	0.3	0.1
Second quarter 2015	0.6	0.7	-0.1
Third quarter 2015	0.5	0.8	-0.3
Fourth quarter 2015	0.4	0.1	0.2
First quarter 2016	1.2	1.5	-0.4
Second quarter 2016	0.8	1.0	-0.2
Third quarter 2016	1.9	2.1	-0.3
Fourth quarter 2016	0.3	0.4	-0.1
First quarter 2017	1.0	0.9	0.2
Second quarter 2017	1.5	1.4	0.1
Third quarter 2017	1.2	1.2	0.0
Fourth quarter 2017	0.3	0.2	0.1
First quarter 2018	0.2	0.2	0.1
Second quarter 2018	1.1	1.2	-0.1

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Source: Statistics Canada, "The 2015 to 2018 revisions of the National Tourism Indicators", *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2019.

Table 2
Revisions to the components of tourism demand

	Revised estimate ¹	Previous estimate ²	Revision ³	Revision ⁴
	millions of dollars			%
Transportation				
2015	32,843	32,987	-144	-0.4
2016	33,666	34,222	-556	-1.7
2017	36,859	37,471	-612	-1.7
Accommodation				
2015	12,218	12,290	-72	-0.6
2016	13,120	12,985	135	1.0
2017	14,118	13,710	408	2.9
Food and beverage services				
2015	14,498	14,536	-38	-0.3
2016	15,284	15,348	-64	-0.4
2017	16,078	16,169	-91	-0.6
Other tourism goods and services				
2015	13,745	13,681	64	0.5
2016	14,132	14,103	29	0.2
2017	14,728	14,674	54	0.4
Total tourism goods and services				
2015	73,304	73,494	-190	-0.3
2016	76,202	76,658	-456	-0.6
2017	81,783	82,024	-241	-0.3
Total other goods and services				
2015	14,577	14,426	151	1.0
2016	14,990	14,960	30	0.2
2017	15,451	15,450	1	0.0
Tourism expenditures				
2015	87,881	87,920	-39	0.0
2016	91,192	91,618	-426	-0.5
2017	97,234	97,474	-240	-0.2

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Source: Statistics Canada, "The 2015 to 2018 revisions of the National Tourism Indicators", *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2019.

Table 3
Revisions to the components of tourism demand (growth rates)

	Current prices			2012 Constant prices		
	Revised estimate ¹	Previous estimate ²	Revision ³	Revised estimate ¹	Previous estimate ²	Revision ³
	annual % change		% points	annual % change		% points
Transportation						
2015	-2.8	-2.4	-0.4	3.8	4.3	-0.6
2016	2.5	3.7	-1.2	5.5	7.2	-1.6
2017	9.5	9.5	0.0	6.3	6.8	-0.5
Accommodation						
2015	4.8	5.4	-0.6	0.1	0.6	-0.6
2016	7.4	5.7	1.7	4.2	3.1	1.1
2017	7.6	5.6	2.0	4.0	1.9	2.1
Food and beverage services						
2015	4.7	5.0	-0.3	2.2	2.4	-0.2
2016	5.4	5.6	-0.2	2.8	3.1	-0.3
2017	5.2	5.3	-0.2	2.8	2.9	-0.1
Other tourism goods and services						
2015	3.6	3.1	0.5	0.9	0.5	0.4
2016	2.8	3.1	-0.3	0.6	0.8	-0.2
2017	4.2	4.0	0.2	2.4	2.2	0.2
Total tourism goods and services						
2015	1.0	1.3	-0.3	2.4	2.6	-0.3
2016	4.0	4.3	-0.4	3.9	4.6	-0.7
2017	7.3	7.0	0.3	4.6	4.5	0.1
Total other goods and services						
2015	4.7	3.6	1.1	2.3	1.5	0.8
2016	2.8	3.7	-0.9	1.5	2.4	-0.9
2017	3.1	3.3	-0.2	2.6	3.1	-0.5
Tourism expenditures						
2015	1.6	1.7	0.0	2.4	2.5	-0.1
2016	3.8	4.2	-0.4	3.5	4.2	-0.7
2017	6.6	6.4	0.2	4.3	4.3	0.0

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Source: Statistics Canada, "The 2015 to 2018 revisions of the National Tourism Indicators", *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2019.

Table 4
Revisions to employment generated by tourism

	Revised estimate ¹	Previous estimate ²	Revision ³	Revision ⁴	Revised estimate ¹	Previous estimate ²	Revision ³
	thousands of jobs			%	annual % change		% points
Transportation							
2015	84.8	84.4	0.5	0.6	0.1	-0.4	0.6
2016	85.8	85.2	0.6	0.7	1.2	1.0	0.1
2017	87.3	86.7	0.6	0.7	1.7	1.7	0.0
Accommodation							
2015	142.7	142.7	0.0	0.0	1.4	1.4	0.0
2016	143.9	143.9	0.0	0.0	0.9	0.9	0.0
2017	146.5	146.6	-0.1	-0.1	1.8	1.9	-0.1
Food and beverage services							
2015	221.1	221.0	0.1	0.0	2.2	2.1	0.0
2016	227.2	228.1	-0.9	-0.4	2.8	3.2	-0.5
2017	233.5	234.5	-1.1	-0.4	2.8	2.8	0.0
Other tourism industries							
2015	111.5	111.4	0.1	0.1	1.9	1.9	0.1
2016	112.4	112.6	-0.2	-0.2	0.8	1.0	-0.2
2017	113.2	113.5	-0.3	-0.3	0.7	0.8	-0.1
Total tourism industries							
2015	560.1	559.4	0.7	0.1	1.6	1.5	0.1
2016	569.3	569.8	-0.5	-0.1	1.6	1.9	-0.2
2017	580.4	581.3	-0.9	-0.2	1.9	2.0	-0.1
Total other industries							
2015	150.3	149.1	1.2	0.8	0.8	0.0	0.8
2016	152.1	151.8	0.3	0.2	1.2	1.8	-0.6
2017	155.4	154.8	0.6	0.4	2.2	2.0	0.2
Tourism activities							
2015	710.4	708.5	1.9	0.3	1.4	1.2	0.3
2016	721.4	721.6	-0.2	0.0	1.6	1.9	-0.3
2017	735.8	736.1	-0.3	0.0	2.0	2.0	0.0

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4. The current percentage revision is the current revision as a percentage of the previous estimate.

Source: Statistics Canada, "The 2015 to 2018 revisions of the National Tourism Indicators", *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2019.

Table 5
Revisions to tourism gross domestic product at current prices

	Revised estimate ¹	Previous estimate ²	Revision ³	Revision ⁴	Revised estimate ¹	Previous estimate ²	Revision ³
	millions of dollars			%	annual % change		% points
Transportation							
2015	8,216	8,564	-348	-4.2	2.4	6.8	-4.3
2016	8,656	9,101	-445	-5.1	5.4	6.3	-0.9
2017	9,399	9,896	-497	-5.3	8.6	8.7	-0.2
Accommodation							
2015	7,403	7,625	-222	-3.0	3.0	6.1	-3.1
2016	7,883	8,123	-240	-3.0	6.5	6.5	0.0
2017	8,462	8,581	-119	-1.4	7.3	5.6	1.7
Food and beverage services							
2015	5,786	5,806	-20	-0.3	4.7	5.1	-0.4
2016	6,107	6,132	-25	-0.4	5.5	5.6	-0.1
2017	6,428	6,463	-35	-0.5	5.3	5.4	-0.1
Other tourism industries							
2015	5,367	5,342	25	0.5	3.6	3.1	0.5
2016	5,493	5,482	11	0.2	2.3	2.6	-0.3
2017	5,619	5,606	13	0.2	2.3	2.3	0.0
Total tourism industries							
2015	26,772	27,337	-565	-2.1	3.3	5.5	-2.2
2016	28,139	28,838	-699	-2.5	5.1	5.5	-0.4
2017	29,908	30,546	-638	-2.1	6.3	5.9	0.4
Total other industries							
2015	9,627	9,546	81	0.8	-5.1	-5.9	0.8
2016	9,654	9,915	-261	-2.7	0.3	3.9	-3.6
2017	10,470	10,729	-259	-2.5	8.5	8.2	0.2
Tourism activities							
2015	36,399	36,883	-484	-1.3	1.0	2.3	-1.3
2016	37,793	38,753	-960	-2.5	3.8	5.1	-1.2
2017	40,378	41,275	-897	-2.2	6.8	6.5	0.3

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3. The revision is the revised estimate minus the previous estimate.

4. The percentage revision is the revision as a percentage of the previous estimate.

Source: Statistics Canada, "The 2015 to 2018 revisions of the National Tourism Indicators", *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2019.

Table 6
Revisions to tourism gross domestic product at 2012 constant prices

	Revised estimate ¹	Previous estimate ²	Revision ³
	annual % change		% points
Transportation			
2015	3.3	8.4	-5.1
2016	6.0	7.5	-1.5
2017	8.5	8.6	-0.1
Accommodation			
2015	-0.9	0.8	-1.8
2016	3.5	3.1	0.4
2017	3.9	3.6	0.3
Food and beverage services			
2015	2.2	2.4	-0.3
2016	2.8	3.1	-0.2
2017	2.8	2.9	-0.1
Other tourism industries			
2015	1.3	1.7	-0.4
2016	0.6	0.8	-0.2
2017	0.5	0.5	0.1
Total tourism industries			
2015	1.5	3.8	-2.3
2016	3.6	4.2	-0.6
2017	4.5	4.6	-0.1
Total other industries			
2015	1.5	0.6	0.9
2016	1.8	2.4	-0.7
2017	2.7	2.5	0.2
Tourism activities			
2015	1.5	2.9	-1.4
2016	3.1	3.7	-0.6
2017	4.0	4.1	-0.1

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3. The revision is the revised estimate minus the previous estimate.

Source: Statistics Canada, "The 2015 to 2018 revisions of the National Tourism Indicators", *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2019.