

What Measure of Canadian Core Inflation is Best?

- Inflation accelerated in line with expectations
- That wasn't good enough for CAD and shorter term rates
- Key is which measure of core inflation should be relied upon...
- ...as common component remains remarkably stable...
- ...but may be sharply underestimating true core inflation
- Our inflation dashboard

Canadian CPI, m/m / y/y %, October:

Actual: 0.7 / 4.7

Scotia: 0.7 / 4.7

Consensus: 0.7 / 4.7

Prior: 0.2 / 4.4

Canadian core CPI, y/y % change, October:

Average: 2.7 (prior 2.7)

Weighted median: 2.9 (prior 2.9 revised up from 2.8)

Common component: 1.8 (prior 1.8%)

Trimmed mean: 3.3 (prior 3.3% revised down from 3.4)

Canadian inflation continued to climb higher and met expectations. The Canadian dollar depreciated and shorter-term interest rates rallied in the wake. I think there were two reasons for this market reaction. One is positioning in that markets may have been braced for hotter than expected readings which has been the pattern elsewhere (US, UK); perhaps Canada's consensus was simply more accurate. Second, I'm not sure market participants have the best handle on core inflation and may be over-weighting one measure among 7 that hasn't budged in many months and that we don't think is the best gauge. I'll come back to this issue.

But first, in terms of highlights, average core inflation was unchanged at 2.67% y/y in October using the BoC's three preferred gauges of trimmed mean CPI, weighted median CPI and common component CPI (chart 1).

Inflation continues to be about far more than just year-ago base effects (chart 2). Month-ago annualized and seasonally adjusted prices have been up by between 6-7% over the past four months and have been running hot since April.

Chart 3 shows the range of all 7 core inflation measures. The lower end of the range arrives with lag (CPI mean standard deviation).

Chart 4 breaks apart the BoC's three preferred measures of core inflation. Note the historic gap between common component CPI at just 1.8% y/y and the others. This issue deserves focused treatment because a common client question is whether common component's low reading is the best one.

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Chart 1

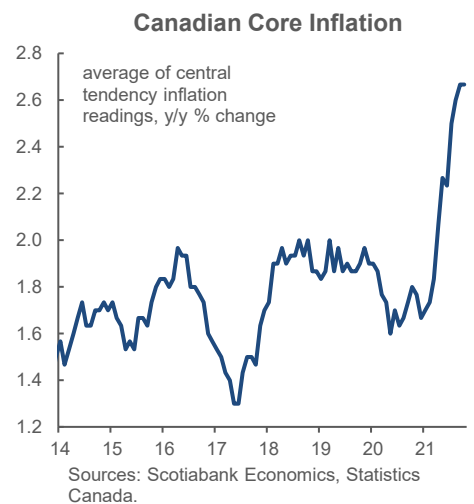
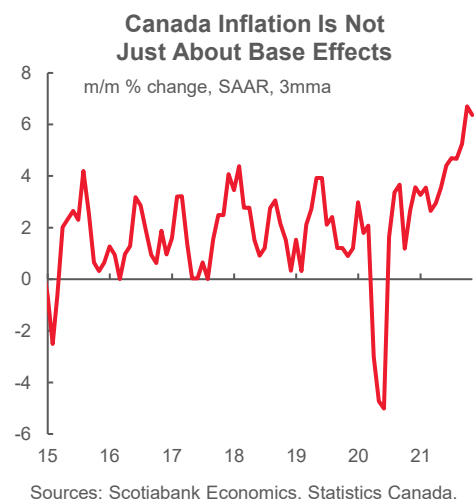


Chart 2



WHAT 'CORE' IS BEST?

CPI-common's advantage is that it uses a factor-based approach to seeking common price changes across multiple categories of the CPI basket. CPI-common tracks spare capacity conditions best when spending patterns don't materially change and yet they clearly have during the pandemic with only partial adjustment for this via rebasing that started in July but left all prior months' weights at 2017 spending patterns. CPI-common is also the most susceptible to year-ago base effects since the other two preferred core measures estimate year-over-year inflation on a compounded monthly weighted basis.

Key, however, is what measure of core inflation *should* the BoC prefer? We haven't heard much from them on that topic in quite a while. Our shop's view is that the BoC *should* have a preference toward going back to the simple CPI excluding food, energy and indirect taxes measure. See the piece [here](#) by René Lalonde and Nikita Perevalov this past summer which they continue to stand by. René and Nikita drew upon analytical efforts to argue that this measure of core is the best one because it is best explained in a Phillips curve framework and has beaten other measures of core inflation at forecasting total inflation by a wide margin over recent years. It would be helpful for the BoC to update its views on which measure(s) of core inflation are preferred given the importance of the matter.

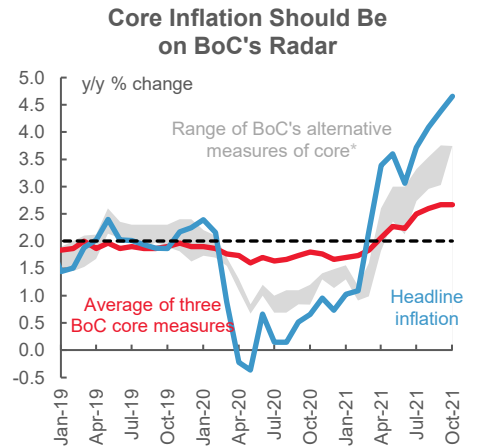
This is not a small issue. If Rene and Nikita are right, then the measure they are pointing to shows core inflation running at 3.8% y/y (chart 5). The rate of change in this core measure on a month-over-month seasonally adjusted and annualized basis is ebbing, but still running hot. That blows common component CPI's reading of 1.8% y/y right out of the water. That, in turn, suggests that the BoC is perhaps not paying enough attention to the best gauge of underlying core inflation and has confused markets on the topic with too many measures of core inflation. Perhaps that's by design amid uncertainty.... Nevertheless, if the BoC is internally emphasizing common component CPI to justify its transitory-for-longer than previously expected stance then it may be making policy vulnerable to emphasizing the wrong measure.

OTHER DETAILS

As for broader details, let's start with a broad decomposition of goods versus services inflation shown in chart 6. Goods inflation accelerated, but only because of food and energy. Services inflation accelerated outright and probably still has further upside ahead.

Chart 7 provides a more detailed breakdown of the CPI basket in terms of weighted contributions to the overall year-over-year inflation rate. Chart 8 does the same thing in unweighted terms. Gasoline is the biggest driver by quite a bit, but homes and vehicles are playing the other biggest roles in driving inflationary pressure. There is substantial breadth to the rest of the gains.

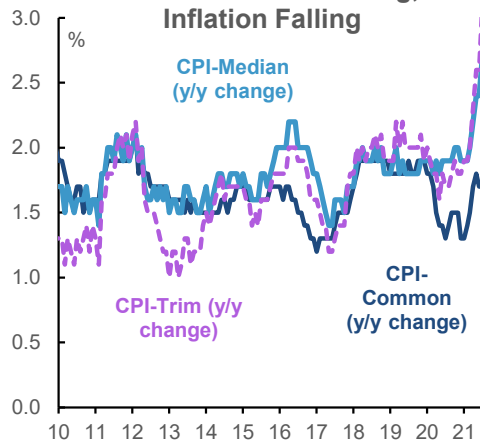
Chart 3



*Includes CPIX, CPIXFET, CPIW measures. Sources: Scotiabank Economics, Statistics Canada.

Chart 4

Canadian Rates Raising, Inflation Falling



Sources: Scotiabank Economics, Statistics Canada.

Chart 5

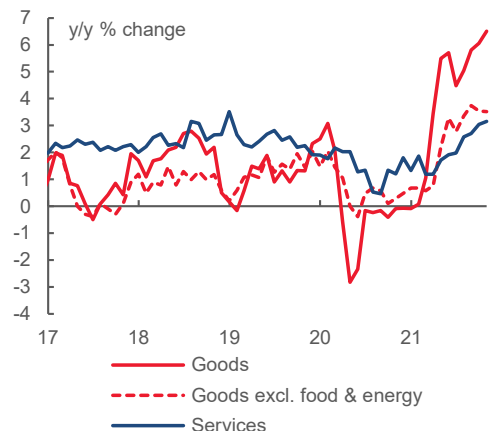
Our Preferred Measure of Core Inflation



Sources: Scotiabank Economics, Statistics Canada.

Chart 6

Canadian Goods & Services Inflation



Sources: Scotiabank Economics, Statistics Canada.

Charts 9 and 10 do the same thing for the month-over-month inflation rates.

Charts 11–17 on the next few pages home in on trends in several specific categories. Homeowners' replacement cost is a big upside driver (chart 11). Rented accommodation is continuing to heat up (chart 12). Chart 13 shows other housing-related components. Property taxes jumped in month-over-month terms during October as per the norm, but relatively stable in year-over-year terms. Mortgage interest remains a transitory downside that continues to see lower mortgage rates pass through in lagging fashion which is probably something that will turn the other way in 2022. Electricity price inflation was roughly stable.

Restaurant price inflation (chart 14) accelerated at full sit-down restaurants but saw an offset in volatile take-out prices.

Auto price inflation (chart 15) ebbed somewhat in year-over-year terms but remains volatile and is still high.

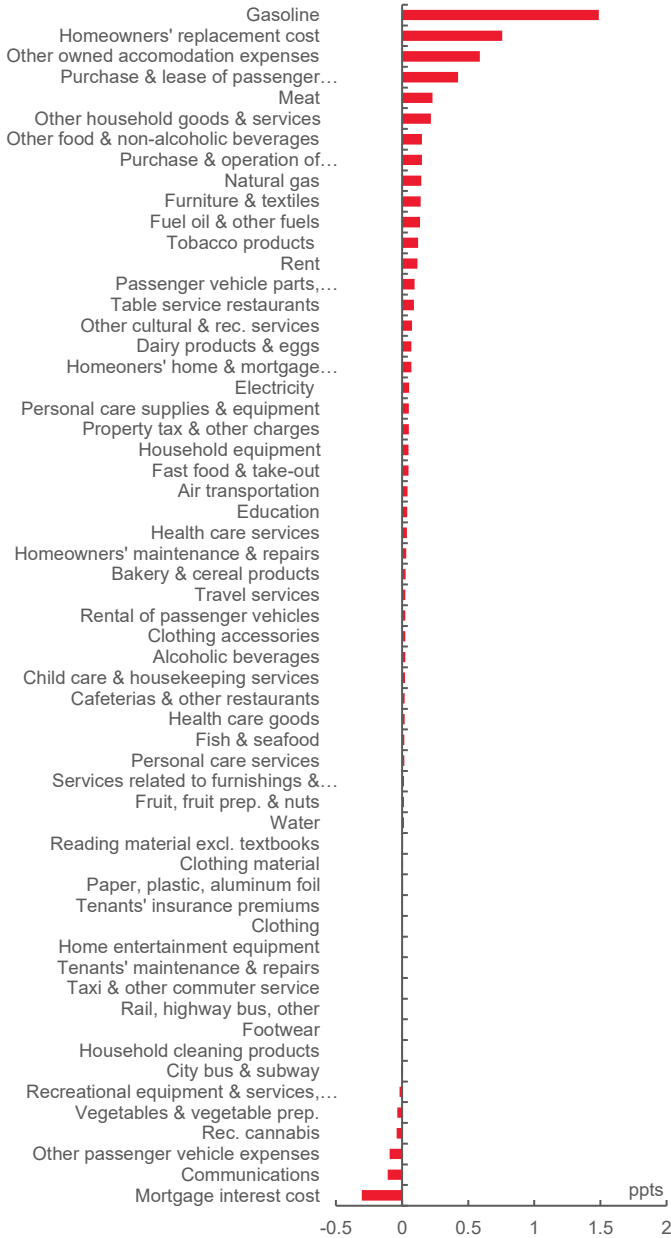
Airfare prices (chart 16) eased somewhat after the large prior gain but are exceptionally volatile.

The breakdown of the recreation/reading/education category is also offered (chart 17).

Please also see the complete inflation dashboard that breaks down individual components and their changes including mini-charts and Z-scores that depict the size of deviations from norms across individual price changes over 5- and 10-year intervals.

Chart 7

October Detailed Category Contributions to 12-Month Change in Canadian CPI



Sources: Scotiabank Economics, Statistics Canada.

Chart 8

October Detailed Categories: 12-Month Change in Canadian CPI



Sources: Scotiabank Economics, Statistics Canada.

Chart 9

October Detailed Category Contributions to Monthly Change in Canadian CPI

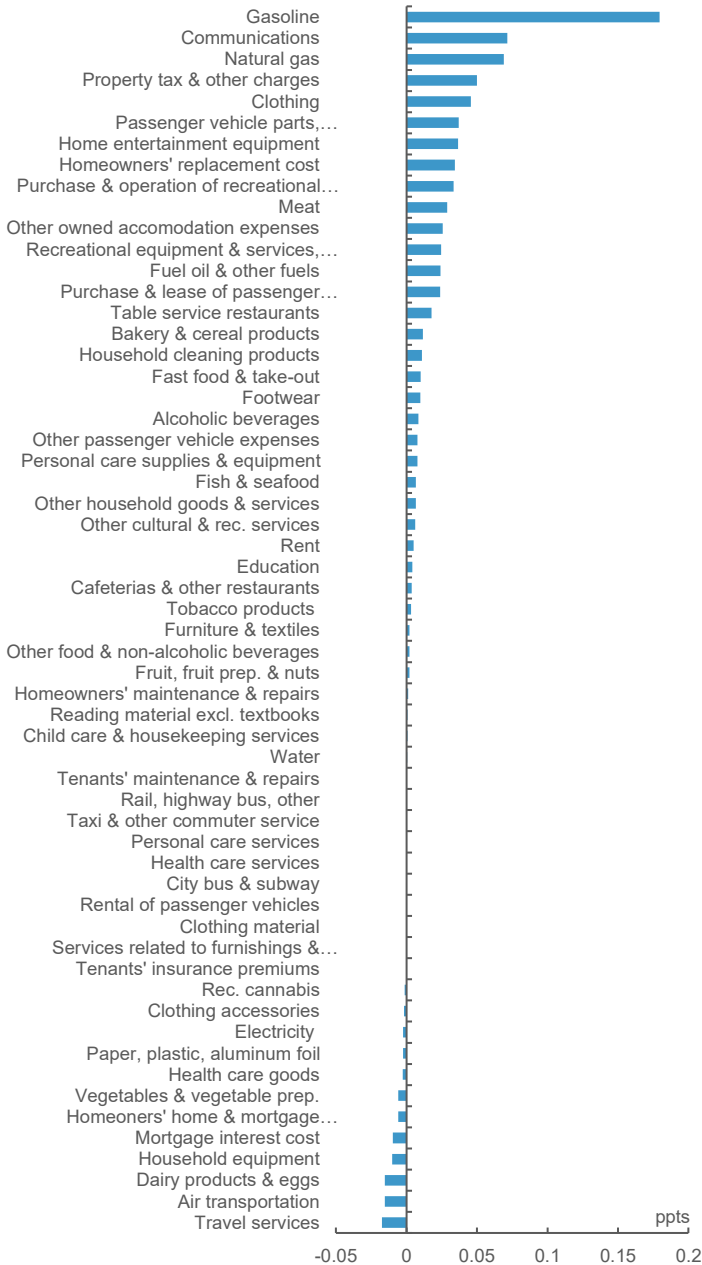


Chart 10

October Detailed Categories: Monthly Change in Canadian CPI

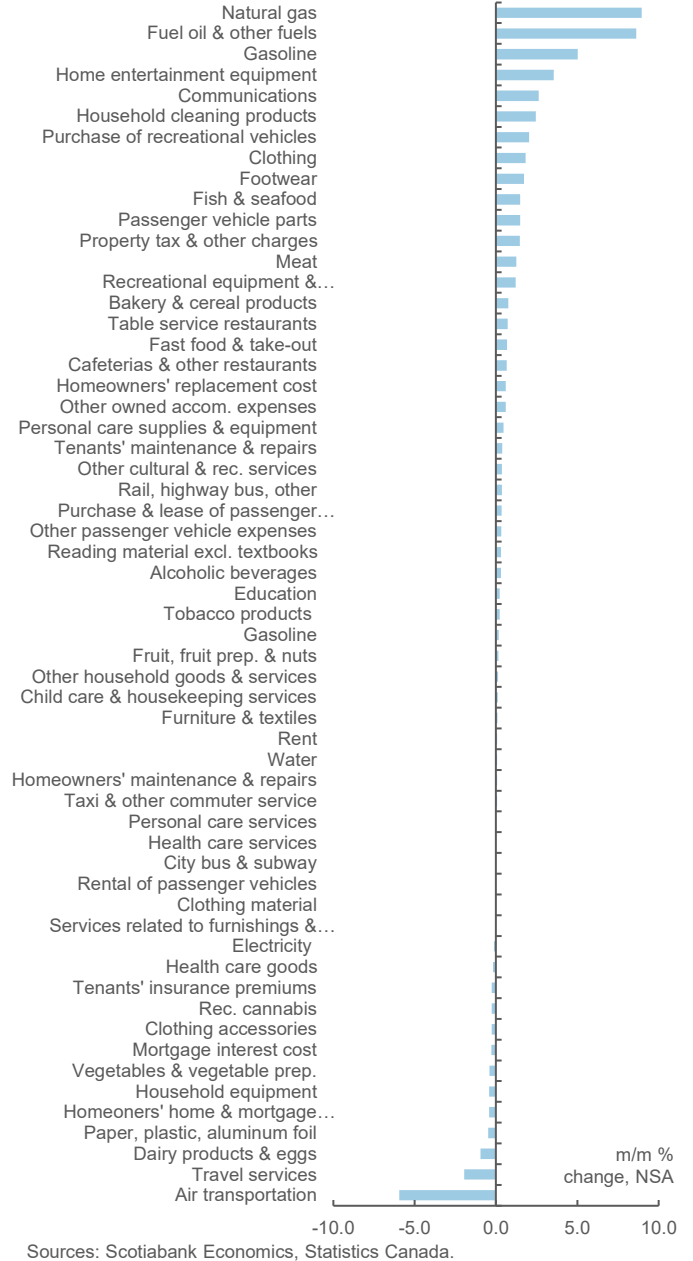
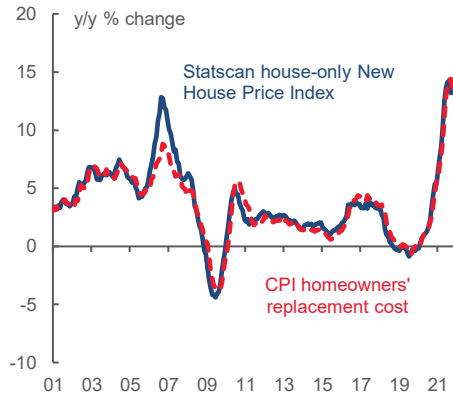
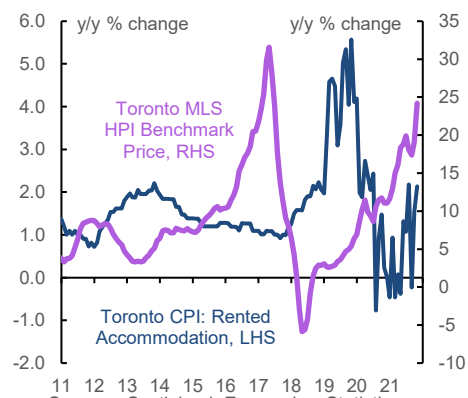


Chart 11
Housing's Direct Contribution to Canadian Inflation



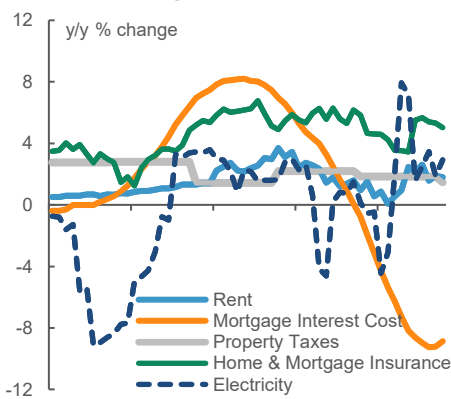
Sources: Scotiabank Economics, Statistics Canada.

Chart 12
Will Rent Inflation Follow Soaring House Prices?



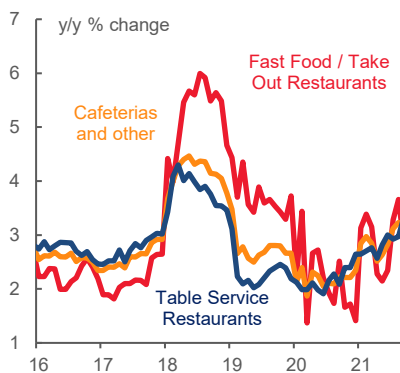
Sources: Scotiabank Economics, Statistics Canada, CREA.

Chart 13
Housing-Related Inflation



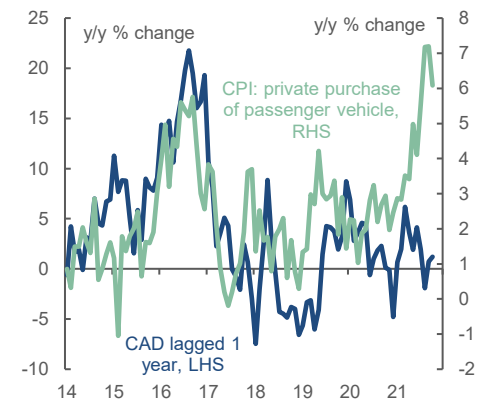
Sources: Scotiabank Economics, Statistics Canada.

Chart 14
Food Purchased from Restaurants Inflation



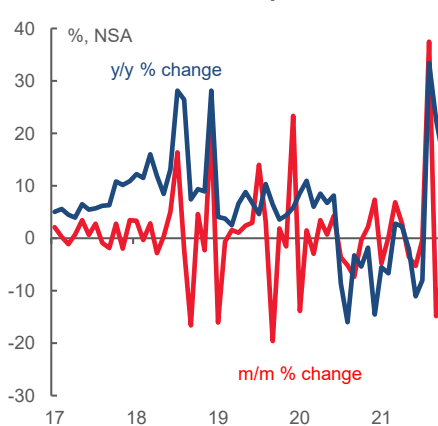
Sources: Scotiabank Economics, Statistics Canada.

Chart 15
Auto Price Inflation and the C\$



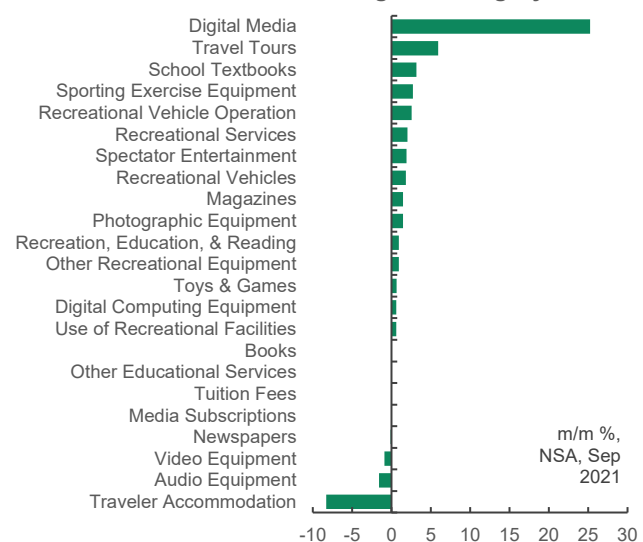
Sources: Scotiabank Economics, Statistics Canada, Bank of Canada.

Chart 16
Canadian Air Transportation CPI



Sources: Scotiabank Economics, Statistics Canada.

Chart 17
Breakdown of Monthly Changes within Recreation Education and Reading CPI Category



Sources: Scotiabank Economics, Statistics Canada.

Oct 2021			Weighted Contributions (ppts)*			5-Year Pre-Pandemic			10-Year Pre-Pandemic					
CA INFLATION COMPONENT BREAKDOWN	y/y % change	10-year trend	Pandemic trend (Jan 2019–Present)	m/m % change, NSA	m/m % change, SA**	Weights (%)	y/y	m/m	2015–2019 avg. y/y	Std. Dev.	Z-Score	2011–2019 avg. y/y	Std. Dev.	Z-Score
Food	3.8			0.4	0.6	16.24	0.63	0.07	2.1	1.7	1.0	2.2	1.5	1.2
Food, stores	3.9			0.3		11.74	0.46	0.03	1.7	2.4	0.9	2.0	2.0	1.0
Meat	9.9			1.2	1.5	2.32	0.23	0.03	2.5	3.6	2.1	3.4	3.6	1.8
Fish & seafood	4.0			1.5	1.3	0.44	0.02	0.01	2.9	1.4	0.7	2.8	2.5	0.5
Dairy products & eggs	4.3			-0.9	-0.3	1.62	0.07	-0.02	0.2	1.5	2.7	0.6	1.5	2.5
Bakery & cereal products	1.7			0.8	-0.3	1.52	0.03	0.01	0.5	2.1	0.6	1.2	2.3	0.2
Fruit, fruit prep. & nuts	1.0			0.1	0.1	1.44	0.01	0.00	1.8	4.4	-0.2	2.0	3.5	-0.3
Vegetables & vegetable prep.	-2.4			-0.4	0.8	1.45	-0.04	-0.01	4.9	6.4	-1.1	3.6	5.8	-1.0
Other food & non-alcoholic beverages	5.1			0.1	0.2	2.96	0.15	0.00	1.0	1.5	2.6	1.3	1.7	2.2
Food, restaurants	3.5			0.7		4.50	0.16	0.03	3.0	0.7	0.7	2.6	0.7	1.2
Table service restaurants	3.6			0.7		2.46	0.09	0.02	2.9	0.6	1.4	2.6	0.6	1.6
Fast food & take-out	3.3			0.7		1.48	0.05	0.01	3.2	1.2	0.1	2.6	1.2	0.6
Cafeterias & other restaurants	3.5			0.7		0.56	0.02	0.00	3.0	0.6	0.8	2.6	0.7	1.2
Shelter	4.8			0.6	0.6	30.03	1.44	0.19	1.8	0.6	5.1	1.7	0.8	3.9
Rented accomm.	1.9			0.2		6.63	0.12	0.01	1.3	0.8	0.8	1.3	0.6	1.0
Rent	1.8			0.1		6.47	0.12	0.00	1.3	0.8	0.7	1.3	0.6	0.8
Tenants' insurance premiums	4.2			-0.3		0.09	0.00	0.00	1.1	1.6	2.0	0.3	1.6	2.4
Tenants' maintenance & repairs	2.7			0.4		0.06	0.00	0.00	2.2	1.0	0.5	2.6	2.2	0.0
Owned accomm.	5.1			0.4		19.73	1.00	0.09	2.3	0.4	6.6	1.7	0.8	4.1
Mortgage interest cost	-8.9			-0.3	-0.3	3.43	-0.30	-0.01	2.1	3.6	-3.0	-0.1	3.6	-2.5
Homeowners' replacement cost	13.5			0.6	0.6	5.61	0.76	0.03	1.9	1.7	7.0	2.1	1.5	7.7
Property tax & other charges	1.5			1.5	-0.2	3.40	0.05	0.05	2.4	0.6	-1.7	2.8	0.7	-1.8
Homeowners' home & mortgage insurance	5.0			-0.4	-0.4	1.38	0.07	-0.01	5.2	2.3	-0.1	4.5	2.6	0.2
Homeowners' maintenance & repairs	1.9			0.1	0.1	1.66	0.03	0.00	2.0	1.1	-0.1	2.0	1.4	-0.1
Other owned accommodation expenses	13.8			0.6	0.5	4.26	0.59	0.03	2.0	1.2	9.8	2.4	2.0	5.8
Water, fuel, & elec.	8.6			2.5		3.67	0.31	0.09	0.8	2.1	3.7	2.5	3.4	1.8
Electricity	2.9			-0.1	0.3	1.85	0.05	0.00	1.2	4.4	0.4	2.5	3.8	0.1
Water	1.8			0.1	0.2	0.77	0.01	0.00	3.7	0.9	-2.0	4.9	1.4	-2.2
Natural gas	18.7			9.0	9.0	0.77	0.14	0.07	-1.3	9.0	2.2	0.4	10.6	1.7
Fuel oil & other fuels	48.1			8.6	8.7	0.28	0.13	0.02	-0.1	15.5	3.1	5.1	14.2	3.0
Household operations, furniture & equipment	1.8			0.5	0.2	14.89	0.26	0.07	1.2	1.0	0.6	1.4	0.9	0.4
Household ops.	0.9			0.9		9.79	0.09	0.08	1.3	1.1	-0.4	2.1	1.3	-0.9
Communications	-3.9			2.6	2.7	2.73	-0.11	0.07	0.0	2.8	-1.4	1.5	2.9	-1.9
Child care & housekeeping services	2.9			0.1	0.2	0.78	0.02	0.00	3.4	1.4	-0.4	3.3	1.3	-0.3
Household cleaning products	-1.0			2.5	1.1	0.45	0.00	0.01	1.3	1.9	-1.2	0.8	1.9	-0.9
Paper, plastic, aluminum foil	1.4			-0.5	-2.2	0.52	0.01	0.00	2.2	2.2	-0.3	2.0	2.0	-0.3
Other household goods & services	4.1			0.1	0.1	5.31	0.22	0.01	1.8	0.5	4.9	2.4	1.1	1.6
Household furnishings & equip.	3.9			-0.2		5.10	0.20	-0.01	0.8	1.7	1.8	0.1	1.6	2.4
Furniture & textiles	6.3			0.1		2.22	0.14	0.00	0.4	2.1	2.8	-0.3	2.1	3.1
Household equipment	2.1			-0.4	0.0	2.40	0.05	-0.01	0.9	1.7	0.7	0.0	1.8	1.1
Services related to furnishings & equipment	4.3			0.0	0.2	0.34	0.01	0.00	2.4	1.8	1.1	2.7	2.9	0.6
Clothing & footwear	0.6			1.4	0.2	4.0	0.03	0.05	0.6	1.2	0.0	0.3	1.4	0.2
Clothing	0.1			1.8	0.2	2.50	0.00	0.05	0.5	1.6	-0.2	-0.3	2.1	0.2
Footwear	-0.1			1.7	0.4	0.57	0.00	0.01	0.4	1.2	-0.4	0.1	1.4	-0.2
Clothing accessories	3.5			-0.3		0.67	0.02	0.00	1.0	1.8	1.4	2.3	2.6	0.5
Clothing material	2.9			0.0		0.26	0.01	0.00	2.2	0.7	1.1	2.7	1.2	0.2

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Transportation	10.1			1.4	1.0	16.0	1.62	0.23	1.7	3.1	2.7	2.3	3.0	2.6
Private trans.	10.2			1.7		15.3	1.55	0.25	1.3	3.2	2.8	2.2	3.2	2.5
Purchase, lease, rental of passenger vehicles	6.5			0.3		6.81	0.44	0.02	2.3	1.5	2.8	1.9	1.6	2.8
<i>Purchase & lease of passenger vehicles</i>	<u>6.2</u>			<u>0.4</u>		<u>6.77</u>	<u>0.42</u>	<u>0.02</u>	<u>2.3</u>	<u>1.5</u>	<u>2.6</u>	<u>1.9</u>	<u>1.6</u>	<u>2.6</u>
<i>Rental of passenger vehicles</i>	<u>60.4</u>			<u>0.0</u>	<u>-0.1</u>	<u>0.04</u>	<u>0.02</u>	<u>0.00</u>	<u>1.4</u>	<u>5.2</u>	<u>11.4</u>	<u>1.2</u>	<u>4.1</u>	<u>14.5</u>
Operation of passenger vehicles	13.4			2.7		8.44	1.13	0.23	0.7	5.7	2.3	2.4	5.4	2.0
<i>Gasoline</i>	<u>41.7</u>			<u>5.0</u>	<u>5.8</u>	<u>3.57</u>	<u>1.49</u>	<u>0.18</u>	<u>-0.6</u>	<u>13.5</u>	<u>3.1</u>	<u>3.0</u>	<u>12.2</u>	<u>3.2</u>
<i>Passenger vehicle parts, maintenance & repairs</i>	<u>3.8</u>			<u>1.5</u>	<u>1.2</u>	<u>2.48</u>	<u>0.09</u>	<u>0.04</u>	<u>1.9</u>	<u>0.3</u>	<u>5.4</u>	<u>1.6</u>	<u>0.8</u>	<u>2.8</u>
<i>Other passenger vehicle expenses</i>	<u>-3.9</u>			<u>0.3</u>	<u>0.3</u>	<u>2.40</u>	<u>-0.09</u>	<u>0.01</u>	<u>2.4</u>	<u>2.2</u>	<u>-2.9</u>	<u>2.6</u>	<u>2.0</u>	<u>-3.2</u>
Public trans.	7.6			-3.0		0.71	0.05	-0.02	4.8	3.9	0.7	3.4	3.7	1.1
Local & commuter transportation	-2.8			0.0	0.2	0.25	-0.01	0.00	1.5	0.5	-8.8	2.2	1.2	-4.3
<i>City bus & subway</i>	<u>-3.6</u>			<u>0.0</u>		<u>0.20</u>	<u>-0.01</u>	<u>0.00</u>	<u>2.1</u>	<u>0.7</u>	<u>-7.6</u>	<u>2.8</u>	<u>1.4</u>	<u>-4.4</u>
<i>Taxi & other commuter service</i>	<u>0.6</u>			<u>0.1</u>		<u>0.05</u>	<u>0.00</u>	<u>0.00</u>	<u>0.1</u>	<u>0.8</u>	<u>0.6</u>	<u>0.9</u>	<u>1.2</u>	<u>-0.2</u>
Inter-city transportation	14.4			-5.2	-5.8	0.30	0.04	-0.02	6.2	5.7	1.4	3.9	5.8	1.8
<i>Air transportation</i>	<u>15.8</u>			<u>-5.9</u>		<u>0.26</u>	<u>0.04</u>	<u>-0.02</u>	<u>6.5</u>	<u>6.2</u>	<u>1.5</u>	<u>4.0</u>	<u>6.4</u>	<u>1.8</u>
<i>Rail, highway bus, other</i>	<u>-1.2</u>			<u>0.4</u>		<u>0.04</u>	<u>0.00</u>	<u>0.00</u>	<u>2.7</u>	<u>1.8</u>	<u>-2.2</u>	<u>2.0</u>	<u>4.2</u>	<u>-0.8</u>
Health & personal care	2.8			0.1	0.1	4.68	0.1	0.01	1.4	0.4	3.7	1.3	0.9	1.8
Health care	2.4			-0.1		2.34	0.1	0.00	1.3	0.6	1.9	1.1	0.8	1.6
Health care goods	1.3			-0.2	-0.2	1.41	0.0	0.00	0.5	0.7	1.2	-0.1	1.1	1.3
Health care services	4.0			0.0	0.2	0.93	0.0	0.00	2.5	0.6	2.7	2.9	0.8	1.4
Personal Care	3.0			0.3		2.34	0.1	0.01	1.5	0.5	2.9	1.5	1.2	1.3
Personal care supplies & equipment	3.0			0.5	-0.2	1.71	0.1	0.01	0.4	0.9	2.8	0.5	1.6	1.5
Personal care services	2.6			0.0	0.3	0.63	0.0	0.00	2.9	0.7	-0.4	2.7	1.4	-0.1
Recreation, education & reading	3.4			0.9	1.8	9.40	0.3	0.09	1.7	0.8	2.3	1.3	0.9	2.6
Recreation	3.9			1.05		7.30	0.29	0.08	1.4	1.0	2.5	0.6	1.2	2.7
Recreational equipment & services, excl. vehicles	-1.0			1.2	0.3	2.03	0.0	0.02	-0.8	1.6	-0.1	-2.2	2.0	0.6
Purchase & operation of recreational vehicles	9.0			2.0	1.4	1.65	0.1	0.03	2.6	1.8	3.5	1.9	2.0	3.7
Home entertainment equipment	0.2			3.6	2.9	1.03	0.0	0.04	-3.8	2.0	2.0	-4.9	2.2	2.3
Travel services	2.8			-1.9	0.8	0.89	0.0	-0.02	0.8	2.9	0.7	0.4	2.8	0.9
Other cultural & rec. services	4.4			0.4	0.1	1.70	0.1	0.01	3.5	1.1	0.8	3.4	1.4	0.7
Educ. & reading	2.1			0.24		2.10	0.04	0.00	2.5	1.4	-0.3	3.0	1.1	-0.8
Education	2.1			0.2	0.3	1.82	0.0	0.00	2.4	1.4	-0.2	3.0	1.2	-0.7
Reading material excl. textbooks	2.8			0.3	0.3	0.28	0.0	0.00	3.8	2.8	-0.4	3.2	2.9	-0.1
Alcoholic beverages, tobacco & rec. cannabis	2.1			0.2	0.2	4.80	0.1	0.01	3.2	1.2	-0.9	2.7	1.3	-0.5
Alcoholic beverages	0.8			0.30		2.85	0.02	0.01	1.7	0.5	-1.8	1.4	0.7	-0.7
Alc. beverages served in licensed establishments	1.3			0.0	0.1	0.55	0.0	0.00	1.8	0.6	-0.8	2.0	0.7	-1.0
Alc. beverages purchased from stores	1.0			0.4	0.1	2.30	0.0	0.01	1.7	0.7	-1.2	1.1	1.1	-0.1
Tobacco products	8.3			0.22		1.44	0.12	0.00	5.6	2.1	1.3	4.8	2.8	1.3
Cigarettes	8.3			0.2		1.34	0.1	0.00	5.6	2.1	1.3	4.8	2.8	1.3
Other tobacco products & supplies	7.8			0.1		0.11	0.0	0.00	5.6	2.0	1.1	4.9	2.6	1.1
Rec. cannabis	-8.1			-0.26		0.50	-0.04	0.00						

*Number may not add due to rounding

** Only available for components that are tracked on a seasonally adjusted basis.

Sources: Scotiabank Economics, Statistics Canada.

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