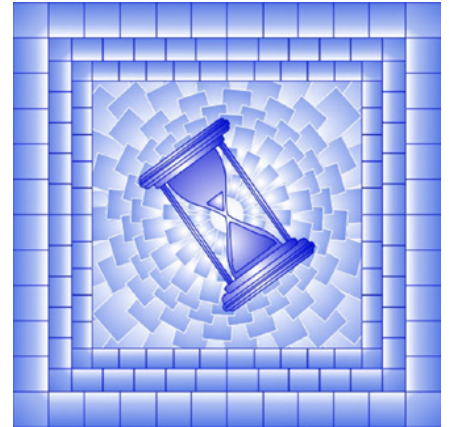


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Enhancements and Developments in the Consumer Price Index Program



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Enhancements and Developments in the Consumer Price Index Program

Introduction

The Consumer Price Index (CPI) program evolves over time to incorporate new data sources, methods and to adapt to emerging issues. The purpose of this paper is to highlight upcoming changes and enhancements to the program and to inform CPI users of plans for the next CPI basket update. A number of the changes highlighted here are the result of user consultations undertaken with representatives from all three levels of government and other users. These consultations highlighted ongoing data needs, as well as areas of the CPI program that could be streamlined in order to focus efforts on new critical data needs.

New ways of using alternative data sources in the CPI

Statistics Canada is continually exploring ways to streamline data collection methods and lighten the response burden on Canadian organizations, businesses and citizens, while producing important statistical information for Canadians. Alternative data sources have been gradually replacing traditional field collection (interviewers visiting retail stores) for some time. Some examples of alternative data sources include: administrative files, retail scanner data, web scraped data, and application programming interface (API) data. Scanner data were first introduced into the production of the Consumer Price Index for the May 2018 reference month. By March 2020, approximately half of all prices used in the calculation of the CPI were collected through some form of alternative data source. More recently, due to the COVID-19 pandemic and public-health guidelines, the collection of price information has moved almost entirely to on-line collection, in addition to existing alternative data sources. Statistics Canada continues to work with potential data providers, such as retailers, to expand the utilization of alternative data in the CPI.

Recent changes

In order to stay relevant and to accurately reflect trends in the market and in consumer behaviour, Statistics Canada regularly reviews and updates the methods applied to various components of the CPI.

Since the last basket update, a number of quality enhancements have been introduced. In the fall of 2019, more scanner data were incorporated into the sub-indexes of the food component and the methods and processes used to compile the [air transportation index](#) were enhanced through the use of data from API. In early 2020, web-scraped data were incorporated into the sub-indexes of the [clothing and footwear component](#), and the sample for the [cellular services index](#) was expanded.

In addition, in response to challenges arising from the COVID-19 pandemic, and the resulting changes to consumer patterns, in 2020 the CPI program developed new collection strategies, increased collection of on-line prices, introduced new representative products for personal protective equipment, and accelerated investigations into other possible alternative data sources.

Additional enhancements to the CPI are planned for early 2021. These include expanding the sample of electric vehicles contributing to the purchase of passenger vehicles index; improving the measurement of parcel shipping prices; adding alternative data sources and updating the methods for the measurement of the [computer equipment, software and supplies index](#); and, enhancing the mortgage interest cost index by incorporating resale housing data into the model to complement the existing new housing data.

Basket weights in the Consumer Price Index

The Consumer Price Index is one of the most widely known and used economic indicators in Canada. It is used to compare, through time, the cost of a fixed basket of goods and services purchased by consumers. The change in this cost is known as inflation, or the rate at which prices are changing.

To calculate price change, Statistics Canada uses a fixed basket of goods and services that has been, historically, based on consumer spending habits captured primarily in the [Survey of Household Spending](#) (SHS). Since the introduction of the 2009 basket with the May 2011 CPI, the basket has been updated every two years.

Each category of goods and services in the basket represents a component of consumer spending patterns, and is assigned a basket share that is proportional to the corresponding total consumer expenditure. For example, consumers spent 26.9% of their total expenditures on shelter-related goods and services in 2017. Therefore, shelter represents 26.9% of the 2017 CPI basket.

The weights of goods and services are fixed during the life of a given basket and play an important role in determining the impact of a given item's price change on the CPI. For instance, Canadians on average spend a much larger share of their total expenditure on gasoline than on milk. As a result, a 10% increase in gasoline prices will have a greater impact on the all-items CPI than an equivalent increase in the price of milk.¹

The [current CPI basket weights](#) are based on the 2017 SHS consumer spending patterns and were introduced with the January 2019 CPI reference month. The next basket update was scheduled to be introduced with the January 2021 CPI reference month. However, due to shifting consumer expenditures during the COVID-19 pandemic, the next basket update will be released in July 2021 with the June 2021 CPI reference month.

Impact of COVID-19 on consumer prices and expenditures

The COVID-19 pandemic created an unprecedented situation where the living conditions of Canadians were significantly altered, undoubtedly affecting consumption patterns which, by design, are not accounted for in the official CPI fixed basket weights until the basket is updated.

The COVID-19 outbreak first started to impact the CPI in January 2020. Crude oil prices began to fall, and soon after, restrictions on air travel and land border closures led to massive disruptions in the tourism sector. Physical distancing measures in Canada in March and April changed personal consumption habits, with consumers buying more groceries and fewer clothes.² As the number of COVID-19 cases fell in May, the country began to gradually reopen, which resulted in some prices returning to pre-COVID-19 levels, as consumers were able to visit stores in-person, most services resumed and some of the travel restrictions were removed. However, certain products continue to be unavailable or limited in their availability such as travel tours, spectator sports and other recreational services.³ The restrictions introduced in the spring in these areas have been maintained indefinitely as COVID-19 cases increased in the fall of 2020.

Timing of the basket update

Typically, spending patterns change slowly and do so in response to shifts in prices, income levels, demographic changes, evolving habits and the availability of new technology. A fixed-basket price index, such as the Canadian CPI, can only reflect the expenditure changes when the CPI basket weights are updated. Under normal economic circumstances, these changes are minimized by scheduling basket updates at regular intervals.

1. Gasoline comprises 3.34% of the 2017 CPI basket, whereas fresh milk comprises 0.37%.

2. In March 2020, sales at grocery stores grew by 22.8%, according to [retail trade data](#). In April, the [retail trade data](#) showed that sales of clothing and clothing accessories declined by 84.8% when February sales were compared to April. In an [analytical paper](#) written about expenditures during March, April and May 2020, Statistics Canada found that as a share of total expenditure, the share spent on food increased from 16.5% in February to 20.7% in March and 20.8% in April. The reverse happened for clothing, as expenditures declined from 5.0% in February to 3.3% in March and 2.2% in April.

3. According to Table 2 in the [Technical Supplement](#), air transportation, recreation services, travel tours and spectator entertainment all experienced COVID-19 related closures.

Shifts in household purchasing patterns have implications for the basket weights used in the calculation of the CPI. The time period that is chosen to derive the basket weights is crucial: generally speaking, the time period chosen should be characterized by economic conditions that can be considered to be reasonably normal or stable. A basket update can still be implemented during times of recession or economic slowdown, but the shutdown during the COVID-19 pandemic was unprecedented. Furthermore, the economic impact was not uniform. For instance, economic activity for hotels and restaurants declined by 64% between February and April 2020.⁴ If economic conditions are temporarily atypical during the weight reference period, the estimated weights will be unlikely to reflect the usual expenditure patterns of the population over the base period and may be of limited relevance moving forward. Following consultations with price experts, stakeholders and other national statistical organizations, Statistics Canada will introduce the next basket update in July 2021. This represents a five-month delay from the planned update, but will allow for continued monitoring and evaluation of changing consumer expenditures during the pandemic, and will provide an opportunity to incorporate alternative data for 2020 consumer expenditures. In addition, the agency will further monitor consumption patterns and expenditures, and these data may be used to adjust weights, if necessary, prior to the subsequent basket update in 2023.

The next basket update will combine for the first time the 2019 SHS and the 2019 seasonally adjusted [Household Final Consumption Expenditures](#) (HFCE). In addition, alternative data sources for reference year 2020 will be used to account for significant shifts in spending related to the pandemic.

Statistics Canada is monitoring the evolution of consumer expenditures using the [Monthly adjusted price index](#), in order to determine the appropriate methodology and reference period for the updated basket weights. A weight adjustment in between basket updates could be considered to account for continuing evolution of consumer spending patterns during the recovery period.

A new special aggregate and other changes to published indexes

The basket update is the optimal time to make changes to the goods and services published in the Consumer Price Index tables.

Special aggregates are analytical indexes compiled for the purpose of observing the behaviour of a specific sub-component or set of sub-components of the CPI. In fall 2021, a new digital services special aggregate will be introduced to [Table 18-10-0004-01](#), *Consumer Price Index, monthly, not seasonally adjusted*. It will include cellular services, shipping fees, internet access services, ride sharing, broadcasting subscription services, video streaming services and audio streaming services. More detail on the composition of that index will be available in the near future.

After undertaking a user consultation in early 2020, it was determined that a number of special aggregates were no longer serving the needs of our users. Consequently, several of these indexes will no longer be published as of the upcoming basket update (Text box 1). It is important to note that the addition or removal of special aggregates affects only the index table and has no impact on the basket.

In other instances items are removed from the published table based on the relevance of the series and the resources required to process, validate and publish the information. Select indexes will no longer be published, however, they remain in the CPI basket. This change will also take place with the July 2021 basket update (Text box 1).

4. The [output of the accommodation and food services](#) sector dropped by 42.4% in April, following a 37.1% decline in March. The sector was down approximately 64% from its level of activity in February 2020.

Text box 1

Sub-indexes and special aggregates no longer appearing in Table 18-01-004 or 18-10-0007-01

Sub-indexes

- Crackers and crisp breads
- Cookies and sweet biscuits
- Fermented or pickled vegetables
- Sauces, condiments and dips
- Herbs, spices and seasonings
- Plastic Supplies
- Dry cleaning services
- Other clothing services
- Foil supplies
- Prescription eyeglasses
- Contact lenses
- Other eye care goods
- Creams, lotions and cosmetics
- Perfume and cologne
- Hair preparations and other toilet preparations
- Clothing materials and notions
- Laundry services

Special aggregates

- All-items excluding alcoholic beverages and recreational cannabis
- All-items excluding tobacco products and smokers' supplies and recreational cannabis
- Goods excluding food purchased from stores
- Non-durable goods excluding food purchased from stores
- Non-durable goods excluding food purchased from stores and energy
- Services excluding shelter services

Select sub-indexes will no longer be published in [Table 18-10-0004-01](#), Consumer Price Index, monthly, not seasonally adjusted, or [Table 18-10-0007-01](#), Basket weights of the Consumer Price Index, Canada, provinces, Whitehorse, Yellowknife and Iqaluit, as of the July 2021 basket update. The listed sub-indexes will, however, remain in the Consumer Price Index basket.

Conclusion

Statistics Canada continues to prioritize data accuracy, quality and timeliness in measuring price change and producing a CPI that reflects the experience of Canadians. Working with price experts, other national statistical organizations and key stakeholders ensures that the data and methods used in the calculation of the CPI are aligned with international standards and best practices. The agency will continue to explore new potential sources of expenditure information for future basket updates and to adopt the most appropriate methods in order to keep the CPI relevant for Canadians.

For more information, or to enquire about the concepts, methods or data quality of this release, contact us (toll-free 1-800-263-1136; 514-283-8300; STATCAN.infostats-infostats.STATCAN@canada.ca) or Media Relations (613-951-4636; STATCAN.mediahotline-ligneinfomedias.STATCAN@canada.ca).