

Bank of Canada's Preferred Measures of Core Inflation

General Information Document¹

Definitions of the Bank of Canada's preferred measures of core inflation

In recent years, the usefulness of CPIX inflation² as an operational guide to monetary policy has deteriorated (Bank of Canada (2016)). Hence, the Bank of Canada has selected three preferred measures of core inflation in Canada: CPI-trim, CPI-median and CPI-common.³

These three measures of core inflation, available on a monthly basis, are expressed as year-over-year percentage change and are constructed from the price indexes of a disaggregation of 55 components of the Consumer Price Index (CPI), which account for 100 per cent of the Canadian CPI basket. These price indexes are adjusted to remove the effect of changes in indirect taxes and in the case of the CPI-trim and the CPI-median, the ones used are also seasonally adjusted.

CPI-trim is a measure of core inflation that excludes CPI components whose rates of change in a given month are located in the tails of the distribution of price changes. This measure helps filter out extreme price movements that might be caused by factors specific to certain components. In particular, CPI-trim excludes 20 per cent of the weighted monthly price variations at both the bottom and top of the distribution of price changes, and thus it always removes 40 per cent of the total CPI basket.⁴ These excluded components can change from month to month, depending on which are extreme at a given time. A good example would be the impact of severe weather on the prices of certain food components. This approach differs from traditional a priori exclusion-based measures (e.g., CPIX), which every month omit a pre-specified list of components from the CPI basket.

CPI-median is a measure of core inflation corresponding to the price change located at the 50th percentile (in terms of the CPI basket weights) of the distribution of price changes in a given month. This measure helps filter out extreme price movements specific to certain components. This approach is similar to CPI-trim as it eliminates all the weighted monthly price variations at both the bottom and top of the distribution of price changes in any given month, except the price change for the component that is the midpoint of that distribution.⁵

CPI-common is a measure of core inflation that tracks common price changes across categories in the CPI basket. It uses a statistical procedure called a factor model to detect these common variations, which helps filter out price movements that might be caused by factors specific to certain components.⁶

Bank of Canada's motivation for the choice of these three measures of core inflation

The Bank of Canada aims to keep inflation at the 2 per cent midpoint of an inflation-control range of 1 to 3 per cent. The inflation target is expressed in terms of total CPI inflation. The Bank of Canada uses measures of core inflation as an operational guide to help achieve the total CPI inflation target.⁷

In October 2016, the Bank of Canada and the Government of Canada renewed Canada's agreement on the inflation-control target. One of the issues the Bank of Canada focused on in preparing for the 2016 renewal was the measurement and use of core inflation.⁸ For that reason, Bank staff conducted an evaluation of different measures of core inflation.⁹ Bank of Canada (2016) states that this exercise uncovered little compelling evidence in favour of continuing to use CPIX inflation as its focal measure of core inflation, and found that CPI-trim, CPI-median and CPI-common performed more favourably across a range of evaluation criteria.

The evaluation of core inflation measures was based on a variety of criteria selected by the Bank, namely, that the selected measures should (i) closely track long-run movements in total CPI inflation, (ii) be less volatile than total CPI inflation and capture persistent movements in inflation, (iii) be related to the underlying drivers of inflation, and (iv) be easy to understand and explain to the public. As explained in Bank of Canada (2016), the three measures of core inflation, CPI-trim, CPI-median and CPI-common, were found to perform favourably across those criteria, in particular because they better capture persistent movements in inflation and tend to move with macroeconomic drivers. However, the Bank further explains that each measure of core inflation was judged to have limitations, thus making the case to consider a set of measures instead of relying on a single focal measure.

Rationale for moving away from a focal measure of core inflation

The Bank uses these measures of core inflation as an operational guide to monetary policy. As explained in Bank of Canada (2016), each measure of core inflation was judged to have limitations, making it necessary to consider a set of measures instead of relying on a single focal measure and reinforcing the point that monetary policy decisions should not be based on the mechanical use of such indicators. Using several indicators helps the Bank transparently manage the risks associated with the shortcomings of any single indicator.

How the Bank of Canada is using these measures of core inflation

The Bank uses these measures as indicators of pressures on inflation associated with excess demand or supply, (i.e., underlying inflationary pressures). Since some of the components in the CPI basket are subject to sharp and often temporary price swings that are unrelated to these underlying trends, the Bank uses this set of core inflation measures that allow it to “look through” temporary changes in total CPI inflation.¹⁰

Interpreting movements in these measures of core inflation

The evolution of these measures of core inflation should reflect more persistent and broad-based movements across CPI components. Thus, trying to identify the contribution of specific CPI components to movements of these measures is not advisable. For CPI-trim and CPI-median, since the list of components excluded can vary every month, it might not be possible to compute the contribution of individual CPI components to the evolution of both measures of core inflation. For CPI-common, a rise in one component would affect that measure of core inflation only if the rise occurred in tandem with increases in several other CPI components.

Responsibility in regards to the construction and publication of these measures of core inflation

Beginning on 22 December 2016 with the publication of the November 2016 CPI, Statistics Canada will produce and publish CPI-trim, CPI-median and CPI-common. Accordingly, any questions related to the compilation of these three measures should be addressed to Statistics Canada. Questions related to the specification of their methodologies as well as to their use in the conduct of monetary policy should be addressed to the Bank of Canada.

References

Bank of Canada. 2016. [Renewal of the Inflation-Control Target—Background Information—October 2016](#). Ottawa. Bank of Canada.

Khan, M., L. Morel and P. Sabourin. 2013. "The Common Component of CPI: An Alternative Measure of Underlying Inflation for Canada." Bank of Canada Staff Working Paper No. 2013-35.

Khan, M., L. Morel and P. Sabourin. 2015. "A Comprehensive Evaluation of Measures of Core inflation for Canada." Bank of Canada Staff Discussion Paper No. 2015-12.

Poloz, S. S. 2016, [Letter to the Minister of Finance](#). 21 September 2016.

¹ This document provides an overview of the measures of core inflation preferred by the Bank of Canada

² CPIX inflation was the Bank of Canada's focal measure of core inflation from 2001 to 2016. CPIX inflation is calculated using a price index that excludes eight of the most volatile components of the CPI and the effect of indirect tax changes on the remaining components. The eight components that are excluded from the all-items index to construct CPIX are fruits, vegetables, gasoline, fuel oil, natural gas, mortgage interest, intercity transportation and tobacco products.

³ For more information, see Bank of Canada (2016).

⁴ For more details on CPI-trim and the choice of the amount to trim, see Khan, Morel and Sabourin (2015).

⁵ For more details on CPI-median, see Khan, Morel and Sabourin (2015).

⁶ For more details on CPI-median, see Khan, Morel and Sabourin (2015).

⁷ More details on the Bank of Canada's monetary policy framework are available on their [website](#).

⁸ See the Letter to the Minister of Finance by the Governor of the Bank of Canada, Poloz (2016).

⁹ Khan, Morel and Sabourin (2015).

¹⁰ Bank of Canada (2016).