

ECONOMIC VIEWPOINT

The Bank of Canada Is Misjudging Core Inflation

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The Bank of Canada is misjudging core inflation. After CPI-common was summarily dismissed during the pandemic, officials have relied heavily on CPI-median and CPI-trim when making policy decisions. The problem is that those measures have become biased, likely overestimating the true underlying inflation rate.

After accounting for these biases, we find that core inflation has continued its downward trend and is now below 3%. This conclusion is consistent with a host of other indicators, but it's in contrast to the Bank of Canada's characterization of inflation. Seemingly based solely on the latest available CPI-median and CPI-trim readings at the time of the January Monetary Policy Report, officials judged that core inflation remained elevated, in the range of 3.5% to 4.0%, whereas we believe that underlying inflation was closer to 3% at the time. Even though central bankers marked their estimate of core inflation lower in March, we still believe that they are overestimating the true underlying rate.

The Limitations of Limited Influence Estimators

Limited influence estimators such as median and trimmed mean measures of inflation are not well-suited for use in real-time policy decisions. Since these measures are meant to filter out idiosyncratic price changes, stability and persistence in these metrics are typically viewed as features not bugs. But there are times when doing so removes important price signals about the health of the economy and, therefore, underlying inflation.

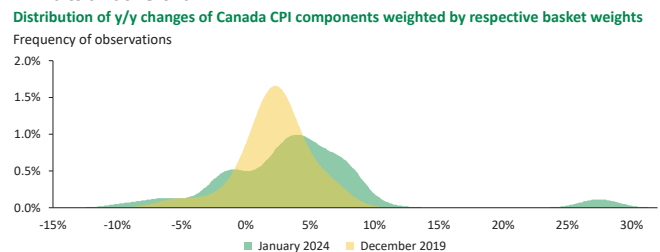
Federal Reserve policymakers never really got into bed with limited influence estimators of inflation, at least not in the same way as their Canadian counterparts. In the US, the operational guide for policy has always been the more traditional ex-food and energy inflation rate. Some regional Fed banks do produce trimmed mean and median indicators, but officials don't give them special preference and they don't feature prominently in the central bank's communications.

When the Bank of Canada shifted its focus to these measures, their unbiased nature was key. However, research from

economists at the Cleveland Fed demonstrates how these indicators can exhibit bias over shorter time horizons due to skewness in the underlying distribution of price changes. Such bias can mislead policymakers about the true nature of underlying inflation, particularly over short periods.

The distribution of Canadian consumer price changes is heavily skewed at the moment, suggesting bias in CPI-median and CPI-trim. Even though the trimmed mean also removes the very large increases in mortgage interest costs, the distribution is substantially skewed to the left (graph 1). A naive median or trimmed mean measure, therefore, completely ignores the depth of price declines across a number of sectors in the fat left tail of the distribution. To correct for this, an adjustment is necessary.

Graph 1
Compared to before the Pandemic, the Distribution of Price Changes Now Exhibits a Fat Left Tail

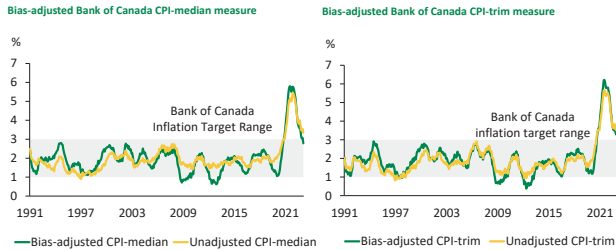


Statistics Canada and Desjardins Capital Markets

After correcting for the bias, we find that the median and trimmed mean inflation measures are materially lower than the naive numbers the Bank of Canada is using to make monetary policy decisions. The average of bias-adjusted CPI-median and CPI-trim is now below 3% and roughly 0.4 percentage points lower than the average of unadjusted CPI-median and CPI-trim. Our adjusted measures, therefore, tell a different story about the path of core inflation than the suboptimal metrics the Bank of

Canada has employed recently when referencing the stickiness in core inflation (graph 2).

Graph 2
Adjusted for Bias, Core Measures Are Materially Lower



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Since the distribution of price changes doesn't exhibit much skewness most of the time, the bias-adjusted measures tend to track the unadjusted metrics closely. However, we find that biases have developed a handful of times in recent decades, leading to divergence between the adjusted and unadjusted measures. At such times, policymakers focusing on unadjusted measures are at risk of being misinformed about the true underlying inflation rate. While headline inflation is noisy, unadjusted CPI-median and CPI-trim risk removing too much signal. The bias-adjusted measures, therefore, present an optimal way of estimating underlying inflation.

Using the Bank of Canada's own criteria for evaluating different core inflation measures, the bias-adjusted metrics are superior in two important ways. They obviously exhibit less bias, but the adjusted numbers also have significantly higher correlation with economic conditions (table 1).

Table 1

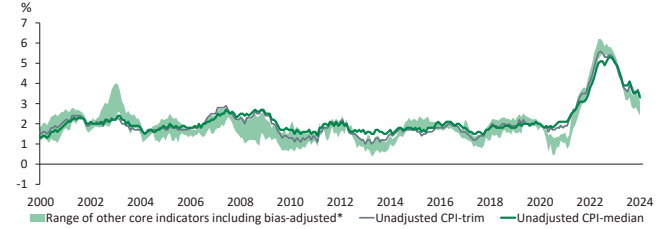
Correlation of Core Inflation Measures to the Output Gap	
	Average correlation to output gap
Bias-adjusted CPI-trim	31%
Bias-adjusted CPI-median	30%
Unadjusted CPI-trim	21%
CPIX	17%
Unadjusted CPI-median	14%
All-items excluding food and energy	11%

Correlation based on quarterly data from 1995 Q1 to 2023 Q3. Average across the integrated framework and extended multivariate filter.
Bank of Canada, Statistics Canada and Desjardins Capital Markets

Volatility, revisions and complexity make any median or trimmed mean measure ill-suited for central bank communications. That's probably why very few central banks have adopted them as their preferred metrics. However, given that bias-adjusted CPI-median and CPI-trim are generally in line with other core inflation metrics now, the message from simple to complex measures is consistent: underlying inflation has fallen to a greater extent than the Bank of Canada's naive metrics (graph 3).

Graph 3
Underlying Inflation Has Moved Lower

Canadian core inflation measures



* Core measures include bias-adjusted CPI-trim and CPI-median, all-items excluding food and energy and CPIX
Statistics Canada and Desjardins Capital Markets

If the Bank of Canada ignores our findings, officials risk leaving monetary policy restrictive for too long, inflicting unnecessary pain on households and businesses. Central bankers should consider bias-corrected versions of CPI-median and CPI-trim when taking policy decisions. Given the tightrope Canadian central bankers are walking, they can't afford any missteps.

Markets are not fully pricing in a rate cut until July, and are only braced for three 25 basis-point reductions for the year as a whole. We believe the latest inflation reading, which came in significantly below forecast, has given the Bank of Canada cover to adopt a more dovish stance in April, even if policymakers don't want to admit that their preferred measures of core inflation might have led them astray.