Intelligence MEMOS

From: Steve Ambler and Jeremy M. Kronick

To: Bank of Canada Governing Council

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Re: **Reintegrate Money into Monetary Policy Analysis**

Headline inflation, which has reached 7.7 percent, has become decidedly unsettled.

Until the 1980s, most economists believed there was a significant relationship between money and inflation in both the short and long runs. However, the short-run relationship deteriorated in the mid-1980s, and today's central bankers no longer pay much attention to the growth rates of money.

In our newly published study, we explain how the relationship disappeared under inflation targeting, show why it has reemerged in these unsettled times, and detail why that link suggests inflation is likely to remain unsettled over the coming months.

Under inflation targeting, a central bank uses all available information to set its monetary policy in order to hit its inflation target at its planning horizon (six to eight quarters for the Bank of Canada). If it is doing a good job, only unforeseen events will cause it to miss its target, and the only thing that should help predict inflation six to eight quarters out is the target itself. Not only money but also any other indicator such as unemployment, the output gap, or the Bank's overnight rate should be unrelated to future inflation at that horizon.

Of course, the Bank has recently been having trouble hitting its target. Since April 2021, headline inflation has exceeded the top end of its 1-3 percent target band, and is now almost 6 percentage points above the 2-percent target.

Money growth also increased dramatically during the pandemic and its aftermath. Broad money growth (M2++, which includes, among other things, chequing and savings deposits at Canadian financial institutions) peaked at more than 14 percent (year-on-year) in February 2021. While there are encouraging signs of late on the money growth front, it is fair to say that both money and inflation have become unsettled.

Recent research looking at the US and EU has shown that under unsettled monetary and inflationary conditions, a strong relationship between money and inflation reappears. Our study confirms this in the Canadian context.

Specifically, we answer two questions in our paper:

Is there still a long-run relationship between monetary aggregates and inflation despite the disappearance of the short-run relationship starting in the early 1980s?

If the main (but not only) explanation for the disappearance of the short-run relationship is the fact that the target itself is the best predictor of inflation in an inflation-targeting regime, then when the regime is not operating as expected does the short-run relationship return?

To answer the first question, we separately examine inflation and money growth into trend and cyclical components, focusing on the former.

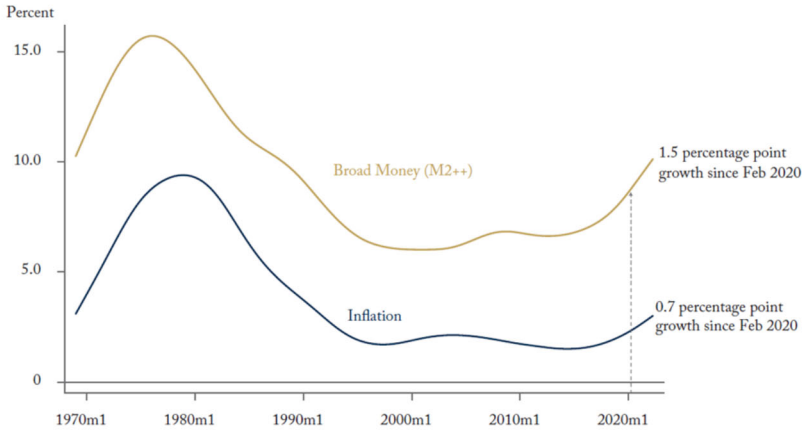
The figure below shows clearly that trend money growth and trend inflation are linked, even during the inflation-targeting era, with trend inflation following trend money growth with a lag.

Trend money growth has increased by 1.5 percentage points since the pandemic began. Trend inflation, which has remained very close to 2 percent since the middle of the 1990s, has increased by only 0.7 percentage points, so it has some catching up to do. It means that actual inflation will remain elevated in order to catch up to money's trend growth, despite the fact that by some measures actual money growth has recently gone back to its pre-pandemic inflation-targeting era average.

To answer the second question, we test different forecasting models, with one in particular containing information on money growth. We show that the cyclical component of money growth helps reduce forecast errors when predicting inflation one quarter ahead in both the entire 1980-2022 forecasting period, as well as the 1980-1991 forecasting period. Unsurprisingly, the best model for the inflation-targeting 1992-2022 is simply the 2 percent target itself.

The combined answer of our two questions implies that the loss of money as a significant predictor in forecasting future inflation lies not only in the Bank's shift to inflation-targeting, but also in inflation being well anchored at the Bank's target. In more unstable inflationary periods, such as the pre-inflation-targeting era and the current period, tracking money growth does indeed add value to forecasting models.

Figure: Trend Inflation and Trend Money Growth, Jan. 1969 – April 2022



The bottom line: monetary aggregates are relevant for predicting future changes to inflation. Money should be reintegrated by the Bank of Canada into its forecasting and monetary policy processes. Money growth rates may have come down in recent months, but it will take some time for inflation to follow suit.

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