

Commentary



MARCH 2021

Will Canada's rapidly expanding money supply result in higher inflation?

Philip Cross

Overview

The recovery of the Canadian economy slowed at the turn of the year. Real GDP growth in the fourth quarter moderated, as increase in natural resources and housing were partly offset by a slowdown in the recovery of consumer spending and exports. The leading indicator of growth stalled in January while jobs fell in December and January as provinces imposed more restrictions to slow the spread of the pandemic. A surge in commodity prices fuelled concerns about a resurgence of inflation. This commentary looks at the impact of Quantitative Easing (QE) on money and credit.

During the 2008 financial crisis, governments adopted measures to raise the monetary base and lower interest rates for the bonds and mortgages purchased by central banks. This kept interest rates low even as debt soared, especially government debt. Yet the broader money supply and credit to households and firms did not accelerate. Importantly, since QE did not resuscitate the real economy as promised, its only lasting effect was long-term financial instability.

In the 2020 pandemic, we saw an enormous expansion of Canada's monetary base. Interest rates were kept as low as possible while the government

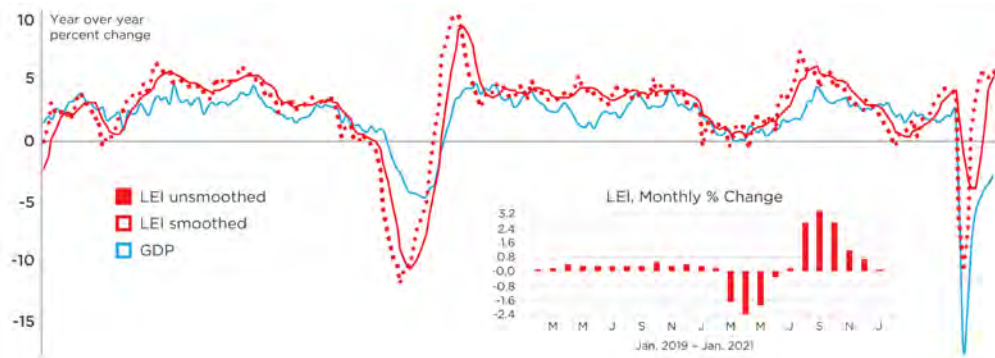
was providing emergency relief during the pandemic. While credit demand remains moderate, the money supply has expanded rapidly in recent months, unlike the recovery in 2009. And now there are signs of both rising prices and higher inflationary expectations.

Introduction

The Canadian economy continues to recover from the shock of government lockdowns in the spring, with real GDP growing by 2.3 percent in the fourth quarter. Nevertheless, at year end real incomes remained 3 percent below their level before the pandemic began last March. Growth in the fourth quarter was led by natural resources, notably agriculture and oil and gas. Housing continued to expand rapidly, although consumer spending stalled after incomes dipped as transfers from government slowed while employment sagged at year-end. However, the household savings rate remained extremely high at 12.7 percent, the mirror image of huge government deficits.

The Macdonald-Laurier Institute's leading economic indicator (LEI) slowed to a crawl (+0.1 percent) in January (Figure 1). The slowdown most reflects a sharp increase in EI claims as employment plunged by 213,000 in January after declining 53,000 in December. The drop in employment was concentrated in service industries in Ontario and Quebec, which were affected by government-ordered shutdowns to control a resurgence of the pandemic after the holidays.

Figure 1: MLI's Leading Economic Indicator (LEI) and GDP

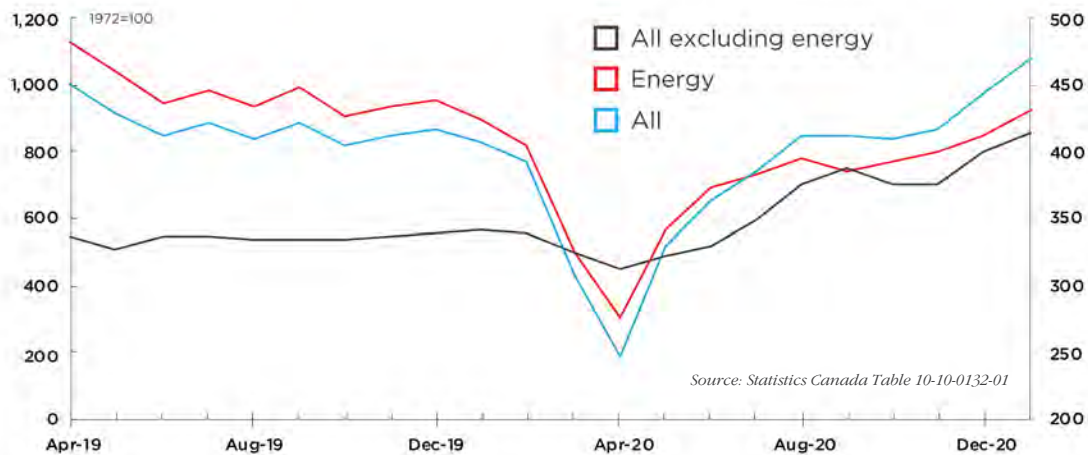


Commodity prices are surging

Most commodity prices surged early in 2021, sending the Bank of Canada's commodity price index to a two-year high (Figure 2). Lumber prices set record highs as housing demand surges in both Canada and the US. Metals strengthened with copper prices reaching their highest level in eight years to reinforce the sharp rally in gold prices last year. Prices for agricultural and fish

products added to last year's gains as both domestic and overseas demand has risen during the pandemic, with canola reaching its highest level since early 2008.

Figure 2: Bank of Canada Commodity Price Index



Even the beleaguered fossil fuel sector recovered further, after prices cratered last spring (including a very brief time when oil prices turned negative for technical reasons related to a shortage of storage capacity).¹ US oil prices in February rose above US\$60 a barrel, and Goldman Sachs predicted oil will reach US\$100 as the global recovery strengthens – due to the wider distribution of vaccines and a third round of US government stimulus while oil supplies lag after firms slashed investment last year. Natural gas spot prices spiked in the United States to US\$10 per thousand cubic feet as a cold snap boosted US demand and crippled supplies from Texas. Canadian producers exported 7.5 billion cubic feet of natural gas per day to the US in February, up from 6 million in January, while inventories fell below their five-year average (Morgan 2021).

Are central banks printing money and risking inflation?

Rising commodity prices fuel speculation that inflationary pressures may surface faster than financial markets or central banks anticipate. This reflects ongoing concerns about extraordinary policies adopted by central banks spawning higher inflation dating back to the Great Financial Crisis of 2008.

In both the 2008 financial crisis and the 2020 pandemic, many central banks took extreme measures to bolster the economy. First, they lowered interest rates to historical lows (often below zero in Japan and Europe) and then expanded their balance sheet substantially. This led some commentators to

accuse central banks of “printing money” that risks rekindling inflation.

The money supply has been at the heart of economic analysis for centuries, so much so that Robert Skidelsky claimed until the arrival of Keynesianism, “The only task of macro policy was to control the money supply” (Skidelsky 2018, 1). This statement is tied to the belief that markets, when left alone, tend to a full employment equilibrium. Today the most fundamental issue in macroeconomics remains “the relationship between money and the production economy” (ibid., 20). The remainder of this commentary looks in-depth at this relationship.

The quantity theory of money

Money was the centre of macroeconomics because of a centuries-long reliance on the Quantity Theory of Money (QTM) to understand how the economy behaved. QTM is based on the equation that $MV=PQ$, where M is the money supply, V is the velocity of money, and P and Q are the price and quantity components of GDP. Since it was assumed that velocity is stable over time and output grows steadily, most disturbances to the money supply were thought to be reflected in prices.

QTM is “a theory of the determination of the general price level, in which causation runs from the quantity of money to prices” (Laidler 2004a, 112). In reality, it is a theory of prices and not of money, since explaining inflation was all that was required when the real economy was assumed to always be in or soon returning to full employment without government intervention. Milton Friedman’s famous assertion that “Inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output” (quoted in Williams 2012) summarizes the belief held by many about the origins of inflation. Former Fed Chair Alan Greenspan agreed, concluding that the “money supply is by far the dominant determinant of price over the long run” (Greenspan 2013, 277).

QTM is a subset of monetarism, which is a broader theory of monetary policy. David Laidler defined monetarism “in terms of the following beliefs: that variations in the quantity of money are the main cause of variations in the price level; that there is no important long-run trade-off between inflation and unemployment; that the monetary approach to balance of payments and exchange rate analysis is valid; and that the quantity of money should be used as a built-in stabiliser, rather than as the instrument of activist stabilisation policy” (2004b, 323).

Applying QTM is not simple or straightforward. To begin, there is no universal definition of the money supply. Friedman observed that the money supply “is not something in existence to be discovered, like the American continent.”

Research has found that “no single financial aggregate can be deemed to be uniformly superior, over all periods and in all countries, as an intermediate target of monetary policy” (Papademos and Modigliani 1990, 460). Every central bank publishes several measures of the money supply, each definition reflecting varying degrees of liquidity. The best definition of money is what works “in organizing our knowledge of economic relationships” (Friedman and Schwartz 1970, 137). In the Macdonald-Laurier Institute’s LEI, for example, we found that M1+ (which is currency outside banks plus chequing deposits at banks and other financial institutions) has the best relationship with turning points in GDP (when the economy enters and then exits recessions).

There are two basic forms of money. One is the monetary base (also called the high-powered money supply), which consists of the assets of central banks. As such, this is the one monetary aggregate that central banks directly control. The monetary base is the fodder out of which the broader money supply is created for everyday use. The broader concept of money consists of cash and deposits at banks and other financial institutions that can easily be accessed to make payments. The ratio of the money supply to the monetary base is the money multiplier.

Velocity is the rate at which money is spent. It is the number of times money “is turned over to facilitate the transactions that make up nominal GDP” (Greenspan 2013, 277). A key tenet of QTM is that velocity is stable, or at least predictable. In the US, the velocity of money was relatively stable for long periods. However, velocity was unstable in the late 1970s while it fell in half from 2007 to 2016 (Cochrane 2018, 134). One explanation of the recent drop in velocity is that interest rates near zero affect velocity because money and short-term bonds become perfect substitutes; in these circumstances, “velocity passively adjusts to whatever split of debt between money and reserves the Fed chooses” (ibid., 132).

The quantity theory today is usually associated with the politics of the right, particularly the effort to subdue inflation starting in 1979. But Laidler points out that left-wing parties also have appealed to QTM when it suited their purposes. Democratic Presidential candidate William Jennings Bryan advocated supplementing the gold standard in the 19th century with silver, in order to expand the quantity of money and end the deflation at the end of the 19th century (Laidler 2004a, 111). Just as in the 19th century, the quantity theory today is being used as a tool to stimulate the economy and not just to control inflation.

Implementing QTM in the 1970s

In the late 1970s, central banks in the US, Canada, and Europe targeted money supply growth to slow rampant inflation.² This was based on a belief in the fundamental tenet of QTM that the money supply determined inflation.

However, the relationship between monetary growth and the economy was breaking down, partly because of changes in the monetary aggregates themselves and also because the velocity of money was unstable during a period of high inflation and record interest rates.

As a result, the Fed made a critical mistake in February 1982 when it raised its federal fund rate from 12 percent to 14 percent because it sought “no further growth” in the money supply after “the recent surge” in its expansion despite a deepening recession (quoted in Silber 2021, 212). This hike in interest rates unnecessarily prolonged an already severe recession. More broadly, the volatility of the money supply, velocity and GDP all increased. In October 1982, the Fed abandoned monetary targets and declared lower interest rates were the primary goal of monetary policy (Bordo and Schwartz 1999, 195).³

The disillusion with monetary targets was summarized by “Goodhart’s Law” (named for the British economist Charles Goodhart), which stated that “a central bank’s attempt to tightly control the path of a chosen monetary aggregate may result in destabilizing the relation of that aggregate to nominal income” (Papademos and Modigliani 1990, 490). This is because market participants, motivated by their profit-maximizing behaviour, attempt to offset imposed monetary controls. Instead of targets for monetary aggregates, the tools of monetary policy in the 1980s and 1990s became central bank independence and inflation targeting, with the economy controlled by manipulating interest rates while taking account of the impact of the exchange rate and fiscal policy.

Quantitative easing in 2008: The return to quantity theory

When the economic shocks of 2008-2009 and 2020 sent interest rates near zero, central banks quickly resorted to Quantitative Easing (QE) to stabilize the economy. QE involved the central bank buying bonds, mortgages and even stocks (in the case of Japan), injecting money into financial markets and banks. By adopting QE, once again “central bankers became quantity theorists” (Skidelsky 2018, 256).

QE both raised the money supply and lowered interest rates for the bonds and mortgages purchased by central banks. This kept interest rates low even as debt soared, especially government debt. However, broader measures of the money supply and credit to households and firms did not accelerate. For example, money supply growth is usually faster than the monetary base in Canada, but in 2008 the two grew by the same amount.

The experiment with QE starting in 2008 “promised to boost output by raising the rate of inflation, while being neutral on distribution” (Skidelsky 2018, 277). It failed to deliver any of these promises. One of the problems with QE is that there was no guarantee that injecting money into the economy would

increase spending for currently produced output rather than buying existing assets such as stocks or real estate. Concerns that QE would spawn a return to 1970s-style inflation have been unfounded. Since QE did not trigger a surge in GDP, there was no generalized increase in prices except financial assets such as stocks, bonds and more esoteric assets such as crypto-currencies. But since QE did not resuscitate the real economy as promised, its only lasting effect may be creating substantial long-term financial instability as low interest rates distort investment decisions.

The Bank of Canada in 2008 used QE much less and for a shorter period than central banks in the US, the UK and the EU, and it quickly reversed the rapid expansion of its balance sheet. By 2010, the growth of the monetary base had returned to its long-term trend. Partly as a result, QE had little sustained impact on Canada's money supply or credit growth (money supply growth picked up briefly in 2009, while credit growth slowed). Even the much larger 200 percent increase in the US monetary base in 2008-2009 did not spark higher growth in the money supply.

The failure of QE in 2008 does not disprove the quantity theory of money, since the money supply itself never responded to the expansion of the monetary base.⁴ This led John Williams, a Regional Fed President, to claim in 2012 “that the historical relationships between the amount of reserves, the money supply, and the economy are unlikely to hold in the future” (Williams 2012).

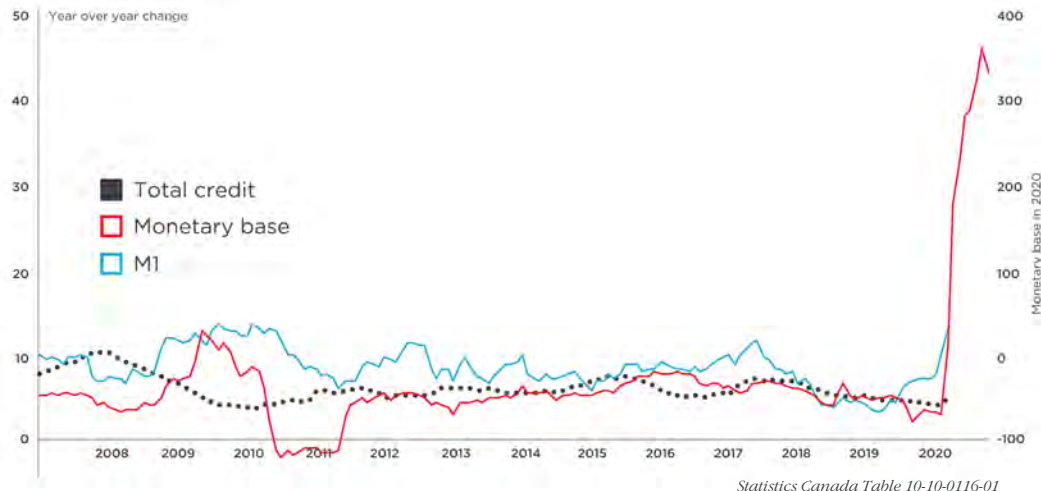
Quantitative easing in 2020

In 2020 the Bank of Canada undertook an enormous expansion of Canada's monetary base, which soared from 3 percent annual growth just before the pandemic to 300 percent (Figure 3). The majority of the increase in the Bank of Canada's assets has been purchases of federal government debt that kept interest rates as low as possible while the government was providing emergency relief during the pandemic.⁵ Unlike in 2008, however, the surge in the monetary base has been accompanied by a jump in money supply (M1+) growth from 7 percent to 30 percent. So far there has been no upturn in the demand for credit, partly because huge government transfers and the deferral of some rent, mortgage, and tax payments have obviated the need for many to borrow.⁶ Total household and business credit growth actually slowed from 4 percent to 3 percent as the pandemic unfolded in 2020.

Rapid growth in the monetary base in 2008-2009 and again in 2020 was not reflected in a surge in nominal GDP partly because the velocity of money fell sharply in both instances. The drop of velocity in 2020 was predictable, as the lockdown of major parts of the economy meant that the large increase in money governments transferred to people could not be spent and ended up passively being saved (this corresponds to velocity falling during the Second World War, which Friedman attributed to the unavailability of consumer

goods inducing people to accumulate liquid assets instead) (Friedman and Schwartz, 1963, 643). As well, much of the increase in money went to assets held by the wealthy, who spend less and therefore slow velocity.

Figure 3: M1 and the monetary base



Fed Chairman Jeremy Powell has repeatedly cited a “flat Phillips Curve” as one reason to believe that inflation will not take off. The Phillips Curve is the trade-off between inflation and capacity utilization. A flat Phillips Curve shows that the degree of resource utilization does not affect inflation. In both 2009 and 2020, the rapid contraction of GDP should have resulted in deflation, based on past Phillips Curve calculations. Instead, inflation barely slowed in both instances. Similarly, when the US was approaching full employment late in 2019, inflation hardly responded. Powell argues one reason the Phillips Curve is flat is that inflationary expectations are well-anchored around the 2 percent target by Fed policy.

There are signs of both rising prices and higher inflationary expectations. As noted above, many commodity prices have risen sharply in recent months. In the US, the yield on 10-year Treasury bonds has risen from their lows of 0.6 percent last year to 1.6 percent, matched by an increase in the five-year mortgage rate in Canada. Leading economists such as Olivier Blanchard and Larry Summers warn that the US economy risks over-heating in 2021 if the Biden’s administration’s proposed stimulus is implemented just as the pandemic ends in the US. Powell expresses confidence that central banks will be able to respond to any upturn in inflationary pressures. This remains unproven; we simply have no experience with central banks shrinking enormous balance sheets in a short period without damaging the economy (Bank of Canada 2021, 32).

The highly uneven and unpredictable impact of Quantitative Easing on money supply and credit growth, as well as asset prices and the real economy, is

disconcerting for expectations of a smooth withdrawal of QE. The Williams quote cited earlier about the breakdown of the relationship between the monetary base, the money supply, and the economy is more alarming than comforting. If the rapid increase in central bank assets had unforeseen impacts on the money supply and the economy, how can central banks be able to predict and manage their reversal?

In Canada, winding down QE in practice will mean the Bank of Canada holds substantially fewer federal bonds. This could result in much higher interest rates if this reduction occurs at a time when the economy is approaching full employment and inflationary expectations are rising. A sudden shift in bond-buying is one reason bond guru James Grant said, “where once government bonds offered risk-free return, they now offer return-free risk” (quoted in Salyajit 2016, 233). In turn, sharply higher interest payments would act as a major incentive for the federal government to curtail its spending and borrowing, if it has not already done so earlier. This is exactly the position the federal government found itself in during the debt crisis in 1994 that led to years of austerity for all levels of government.

Still, many economists share the central bank’s confidence that inflation will remain subdued in the aftermath of the severe recession in 2020. The course of inflation over the next few years will be a test of whether current central bank theories of inflation hold sway or whether the Quantity Theory still has some explanatory power.

About the author



Philip Cross is a Munk Senior Fellow at the Macdonald-Laurier Institute. Prior to joining MLI, Mr. Cross spent 36 years at Statistics Canada specializing in macroeconomics. He was appointed Chief Economic Analyst in 2008 and was responsible for ensuring quality and coherency of all major economic statistics. During his career, he also wrote the “Current Economic Conditions” section of the Canadian Economic Observer, which provides Statistics Canada’s view of the economy. He is a frequent commentator on the economy and interpreter of Statistics Canada reports for the media and general public. He is also a member of the CD Howe Business Cycle Dating Committee.

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Endnotes

- 1 Industry opponents gleefully pounced on this price collapse as symbolizing the end of fossil fuels. For example, Green Party leader Elizabeth May and Bloc Quebecois leader Jean-Francois Blanchet both pronounced oil as “dead” in the spring of 2020. See *National Post* 2020. While critics in Canada made baseless assertions about the end of fossil fuels, Qatar unveiled a \$29 billion investment in liquified natural gas. See Hussain 2021.
- 2 The US had a target for the money supply, while West Germany initially targeted the monetary base but later switched to the money supply. See Brown 2015, 152.
- 3 In his memoirs, Volcker (2018, 113) also cited President Reagan’s firing of the air traffic controllers as an “important but little-recognized contribution to the fight against inflation.”
- 4 The instability of velocity has a parallel in the variability of fiscal multipliers over time, which makes the impact of fiscal policy unstable and hard to predict.
- 5 Government of Canada bonds make up 55 percent of the Bank of Canada’s assets. See Bank of Canada 2021, 22.
- 6 For example, 898,272 mortgages were deferred in 2020, amounting to 18 percent of mortgage payments. See Daoust, Hoffarth and Haines 2021.

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