International Monetary Monitor

Date: 27 November 2024
Newsletter No. 49

# Testimony to the Canadian Senate on Monetary Policy

by John Greenwood

## Introduction and Overview

- On November 21 I testified by Zoom to Canada's **Standing Senate Committee on Banking, Commerce and the Economy** on Canadian monetary policy.
- The context was that the **inflation targeting framework** for the Bank of Canada's conduct of monetary policy is due to be renewed in December 2026, five years after the 2021 framework was adopted.
- Senators are starting to consider whether, in the light of recent experience, the mandate of the Bank of Canada should be amended in any way, and whether its operating framework needs adjustment.
- I began by outlining the consensus framework that has evolved for central bank operations, not only in Canada, but more broadly in developed economies as a whole over the past three decades.
- In the Bank of Canada's case, the inflation target was set at a 2% annual increase of the CPI, and through most of the period since 1990 the Bank has been successful in achieving this goal. Notwithstanding this achievement, in Canada and many other economies inflation far exceeded the central bank's target during and after Covid.
- Like other central banks the Bank of Canada has repeatedly relied on the narrative that the Covid inflation was caused by a series of supply chain disruptions and external shocks that the central bank had no power to prevent.
- In my testimony I showed that this argument is false.
- I demonstrated that the inflation was caused directly by the Bank of Canada's operations (specifically its huge purchases of Canadian Government Bonds) which in turn directly increased the broadly defined money supply, M3.
- Turning to the question of how to avoid a recurrence of inflation, I proposed a ***monetary policy brake***, analogous to Germany's fiscal debt brake.
- It can be shown that if such a monetary brake had been in operation during and after the Covid pandemic, the rate of inflation in Canada would probably not have exceeded 4-5%.

**International Monetary Monitor Ltd**

*The IMM Newsletter offers economic research written by John Greenwood, founder and Chief Economist of International Monetary Monitor Ltd. John was also the publisher, editor and lead author of* ***Asian Monetary Monitor****, a bi-monthly publication that he operated for 20 years from Hong Kong between 1977 and 1996. He was a pioneer of monetary research in Asia. From 1999 to 2021 he was Chief Economist at Invesco, based in London.*
*To access my research please email your request to* IMM@eri-c.com

## Introduction: The Settled Consensus on Inflation Targeting and Canada's Experience since 2020.

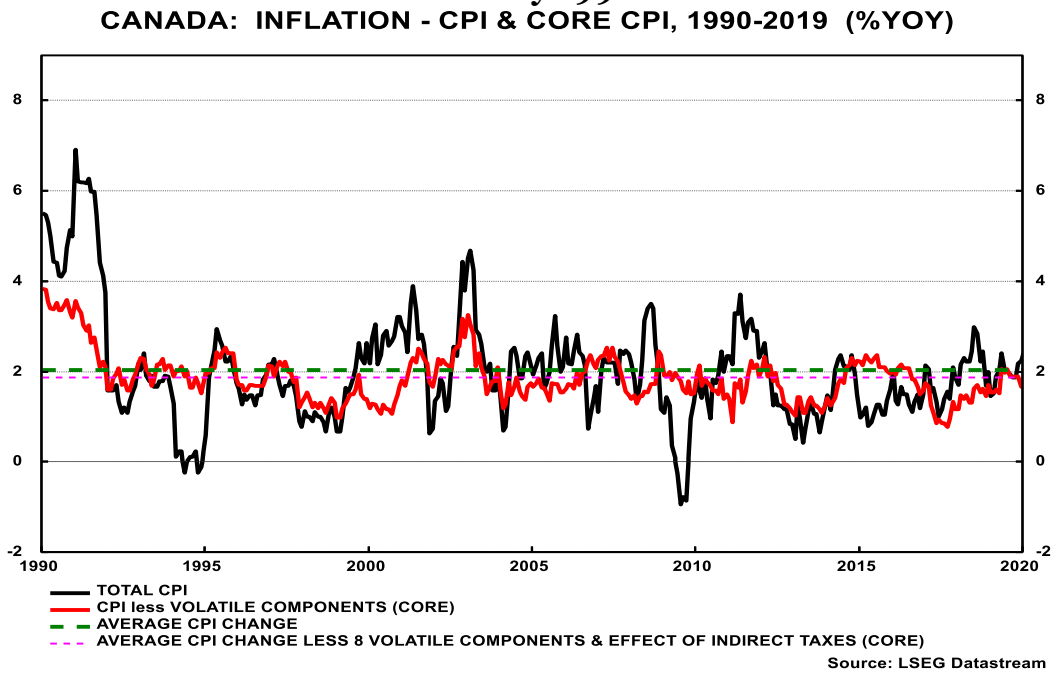
Since the 1990s it has become almost universally accepted that Inflation Targeting frameworks are the best arrangement for securing optimum central bank and monetary policy outcomes in large, free market economies. In such an arrangement, the central bank and the government generally decide together on a suitable inflation target, and the central bank is given the operational freedom to pursue that target.

The role of the inflation target is to provide an internal anchor for the value of the currency. Some degree of accountability is imposed on the central bank by requiring regular reports on monetary policy to the Treasury and/or to Parliament, combined with the appearance of senior officials before Parliamentary committees for scrutiny.

The main exceptions to Inflation Targeting frameworks are small, highly open economies with very large capital flows such as Hong Kong or Singapore where a fixed or managed exchange rate provides an external anchor, avoiding the risks of any price instability that might accompany a floating exchange rate. (Hong Kong experienced exactly this sort of exchange rate-induced instability in the early 1980s up to the time of its currency crisis and the fixing of the Hong Kong dollar to the US dollar in October 1983.)

In my view there is consequently no reason to question Canada's adoption of Inflation Targeting originally in 1991, and its subsequent renewals between 1995 and 2021.

**Figure 1. Canada's Mostly Successful Record of Inflation Targeting since the Early 1990s.**



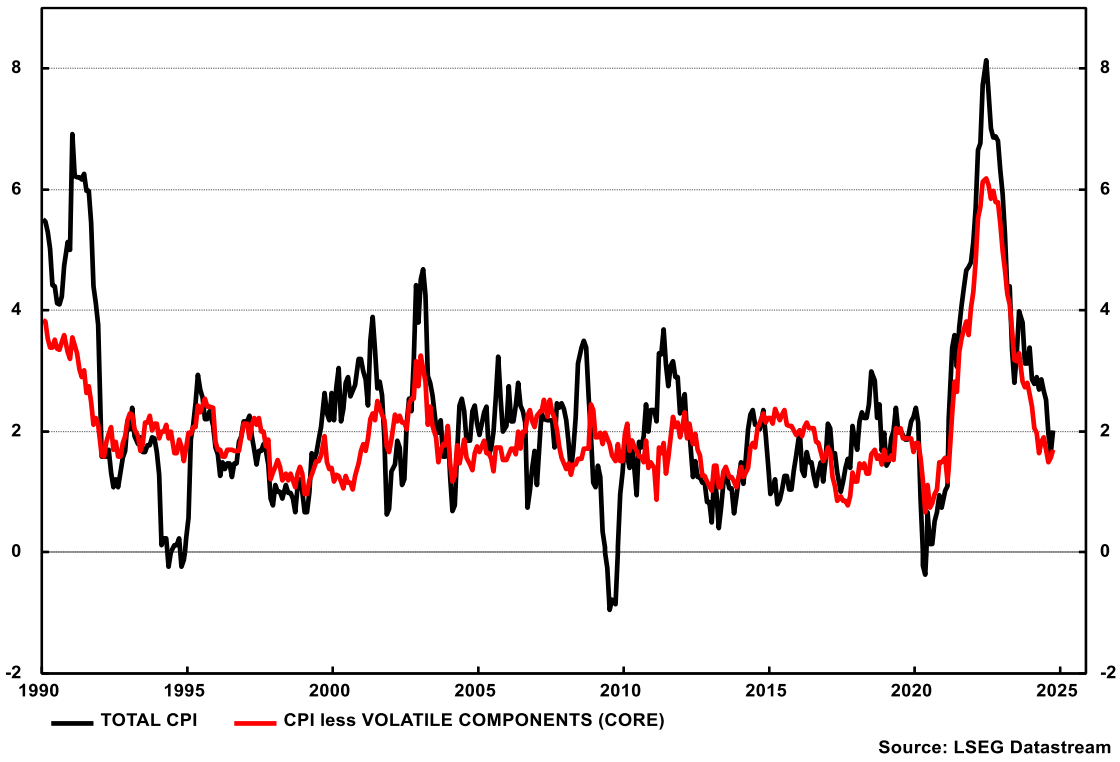
With inflation as its long-standing primary goal, a secondary goal of maintaining maximum sustainable employment has been added to the Bank of Canada's inflation mandate, although it is recognised that factors other than monetary policy determine the level of employment. Again, I see no reason to question this part of the mandate.

There is also no reason to question the adoption in Canada of the **specific** inflation target, that is an inflation target—as measured by the 12-month rate of change in the consumer price index—at 2 percent, with an inflation-control range of 1 to 3 percent.

From the early 1990s to 2019 inflation targeting was broadly successful (Figure 1). However, in the light of Canada's actual inflation experience under Covid and immediately afterwards, inflation targeting was clearly derailed at least temporarily. Inflation far exceeded even the 3% upper end of the Bank of Canada's assigned control range. In fact, CPI inflation peaked at over 8% year-on-year in June 2022 (Figure 2) and the overall level of consumer prices has risen cumulatively by about 18% between 2020 and 2024, while the Producer Price Index increased by 32.7% between January 2020 and May 2022.

Since the Covid inflation episode represents a clear breach of the Inflation Targeting goals, it is of the utmost importance to consider **(A)** the reasons for the deviation of Canada's inflation from the target range, and **(B)** any changes in the guidelines or operational requirements to prevent a recurrence of such a deviation in the future. These are the topics for the remainder of my opening statement.

**Figure 2. Canada's Inflation Spiked Upwards in 2021-22**



### (A) Why Canada's Inflation Deviated from the 1-3% Target Range.

One predominant reason is given by consensus economists for the steep rise in prices in 2021-22 and the inability of monetary policy to prevent it.

It is claimed that there was a series of unexpected shocks that disrupted supply chains across the world, leading to steep increases of prices for **individual** products. Once these price increases had occurred, it is further claimed, there was very little that central banks could do to prevent them from showing up as increases in **overall** inflation. The list of products affected included computer chips, new and second-hand cars, and a variety of household durables, followed by commodities such as energy and food products, especially after the Ukraine war broke out in February 2022.

**One problem** with this argument is that asset prices, such as equity prices and house prices started rising well ahead of most consumer goods prices, suggesting an alternative source for the price surge. The increase in stock prices and house prices is consistent with a more generalised source for inflation, namely an increase in aggregate demand sourced from rapid growth of money or credit.

**A second problem** with the consensus narrative is that these individual price increases represent changes in ***relative*** prices, and do not justify or explain a rise in the ***overall*** price level. If incomes are fixed but consumers decide to spend more on energy prices to maintain their consumption, that means they have less spending power (money) left over to buy other goods or services. Less spending on those other goods and services will mean that their prices will ultimately adjust downwards.

**A third problem** with the story of disrupted supply chains causing overall inflation is that in some countries there was no such effect. In countries like Japan, Switzerland, China, India and Indonesia there was no significant rise in inflation in response to the Covid pandemic. Inflation was therefore not a worldwide problem that central bankers can dismiss as outside of their control.

The truth is that these five economies – along with some others – did not allow the quantity of money to expand more rapidly at the onset of Covid. They maintained, for the most part, unchanged rates of growth of money – or only permitted small increases in money growth – and as a result, inflation remained subdued in all five economies.

By contrast, when Covid struck, the Bank of Canada along with the central banks of other leading economies such as the US, the UK, the Eurozone, and Australia all adopted aggressive policies of Quantitative Expansion (QE) together with various types of direct lending to banks. These policies resulted directly in extraordinary increases in the quantity of broad money (M3 in Canada) because when such securities are purchased from non-bank entities, the seller's deposit account is credited with new money from the central bank. At the same time commercial banks' reserves increased by a matching amount. The consequent surge in the stock of

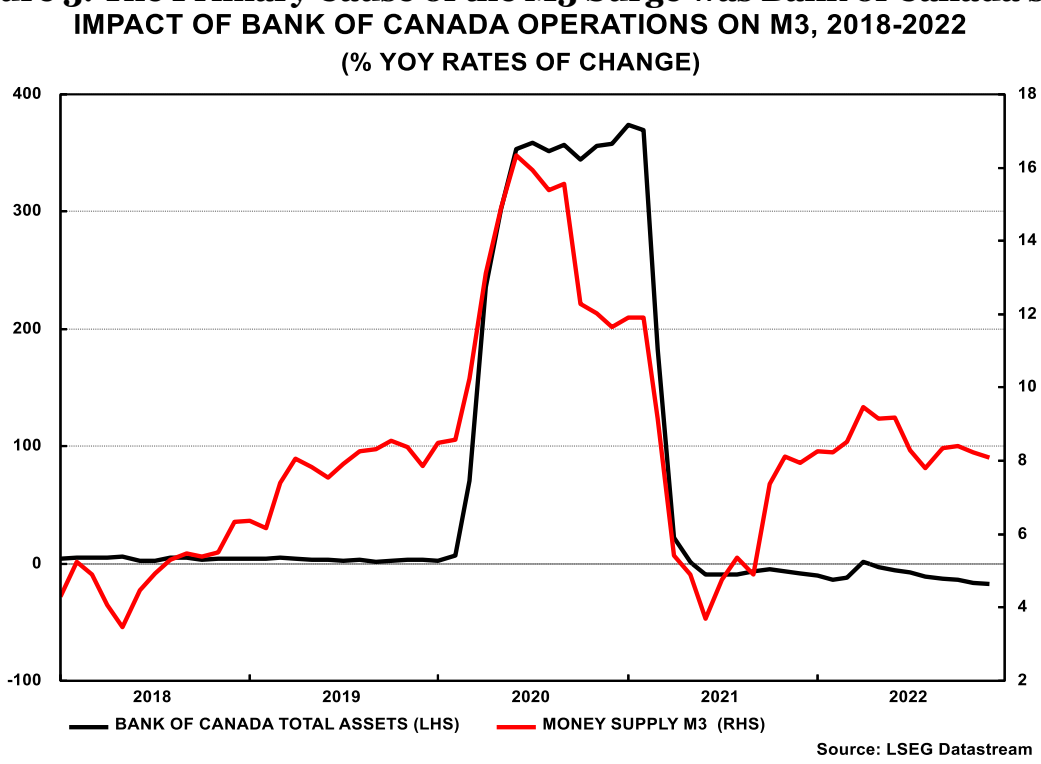
broad money or purchasing power produced both the increase in asset prices and the increase in goods and service prices.

At this point it is worthwhile to digress momentarily to explain why, although several central banks had adopted similar large-scale asset purchase plans in the aftermath of the Global Financial Crisis of 2008-09, QE did not generate inflation in the 2010s. The reason was that at the start of the decade commercial banks' balance sheets were impaired by large losses from housing securities or sub-prime loans, and many commercial banks simply withdrew from lending.

With bank lending shrinking (e.g. by almost US$1 trillion in the US), the central banks' QE or money-creation activities merely filled the hole left by commercial banks. As a result, in the aftermath of the GFC, broad money growth remained low and inflation stayed subdued.

Many people are still not aware of this crucial point. It is my conjecture that those central bankers who pay no attention to the stock of broad money mistakenly thought that since QE had not produced inflation in 2010-15, it would not generate inflation after 2020.

**Figure 3. The Primary Cause of the M3 Surge was Bank of Canada's QE**



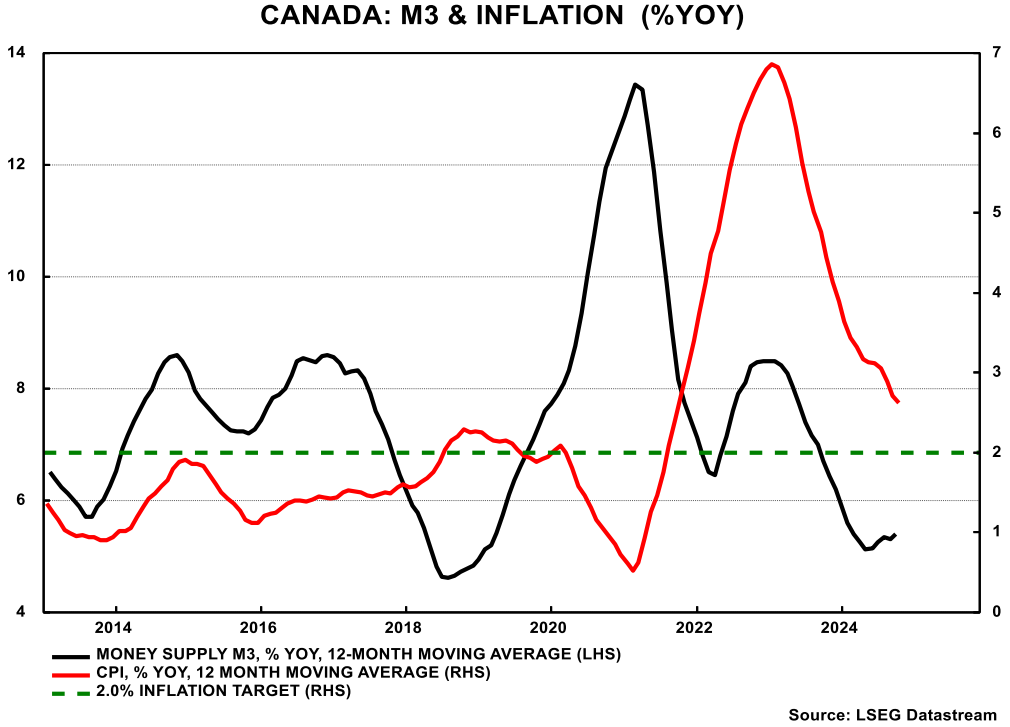

The net result of the Bank of Canada's securities purchases and repo operations was that M3 accelerated from a relatively normal 8.5% (on a 3-month annualized basis) in February 2020 to an extraordinary 37.8% on the same basis by May 2020, laying the groundwork for a year-on-year change of 16.3% by June 2020, the largest increase since February 1981 in the bad old days of the 1970s and early 1980s. M3 growth remained in double digits until March 2021.

Turning to the central bank, the Bank of Canada purchased Government of Canada securities (direct or guaranteed) and engaged in repos (securities purchased under resale agreements) from March 2020. The Bank's balance sheet jumped from C$122.9 billion in February 2020 to C$195.6 billion in March, rising to an initial peak of C$542.9 billion in July 2020 before easing off for a few months and then rising to a final peak of C$576.5 billion in February 2021.

Simultaneously, M3 increased from C$2,647 billion in February 2020 to C$2,728 billion in March, and C$2,921 billion by July 2020. After a brief pause in October 2020, M3 hit a new high of C$2,962 billion in February 2021 and has continued to climb at a more moderate pace subsequently.

The net increase in Bank of Canada's balance sheet between February 2020 and February 2021 was C$453 billion, an amount which exceeded the increase in M3 of C$315 billion. The reason for the difference, in part, was the rundown of securities purchased under resale agreements (repos) on the Bank of Canada's balance sheet. But the underlying message is clear: despite central bankers saying that their purchases of securities were solely to ensure the *"smooth functioning of financial markets"* [1] by lowering long-term rates[2], in fact they were injecting new money into the economy, boosting M3. Moreover, it was the excessive creation of M3 that led directly to the subsequent inflation (Figure 4), peaking two years after M3.

**Figure 4. Excess M3 Growth Resulted in Inflation Two Years Later**




[1] https://www.bankofcanada.ca/wp-content/uploads/2021/12/Monetary-Policy-Framework-Renewal-December-2021.pdf (p. 49).

[2] The Bank of Canada used "quantitative easing (QE) to supplement and reinforce the reductions in the policy rate and forward guidance by also helping keep longer-term borrowing rates low" (ibid. p. 49)

In short, Canada's inflation was the result of the Bank of Canada's massive purchases of securities, not the result of external shocks. The external shocks undoubtedly influenced the ***profile*** of inflation, but they were not the ultimate ***cause***. The conclusion is that the Bank of Canada's mandate needs to be adjusted to prevent this kind of error in future.

### (A) Adjusting the Bank of Canada's Operating Framework to Prevent a Recurrence of Inflation

In the Monetary Policy Framework Renewal (December 2021) document, on which the Bank of Canada's monetary policy since 2022 has been based, there is no mention of either M3 or the money supply. Chapter 4 of the Framework Renewal compares Canada's flexible inflation-targeting (FIT) framework with five alternate frameworks:

- average inflation targeting (AIT)
- price-level targeting (PLT)
- an employment-inflation dual mandate
- nominal gross domestic product (NGDP)–level targeting
- NGDP-growth targeting

The Bank of Canada's conclusion was that, "Overall, the results of the horse race [between the six frameworks] suggest that FIT, AIT and the dual mandate are likely to perform better than PLT and both types of NGDP targeting." Also, this was "consistent with the findings from the Bank's public consultations, where respondents viewed FIT, AIT and the dual mandate as the most promising frameworks" (p. 45).

But in spite of this finding and the implementation of the FIT program, nevertheless inflation became a serious problem in 2021-22.

In my view the inflation problem occurred because the Bank of Canada, along with other central banks, was given ***too much latitude*** in implementing the Flexible Inflation Targeting (FIT) framework.

We have already seen how inflation was due to the failure to manage and control the broad money supply (M3). Put differently, the Bank of Canada focused on interest rates, credit markets, and the "smooth functioning of financial markets" and largely ignored the excessive growth of the money supply which its own operations produced.

What is needed is the monetary equivalent of a fiscal debt brake[3] – in other words a monetary brake designed to prevent excessive and sustained surges of broad money (M3) growth which are liable to result in inflation.

[3] Germany introduced a fiscal debt brake in 2009 following the Global Financial Crisis. It is a constitutional requirement imposed on the federal and state governments to bring public finances under control by requiring

After the monetary explosion of 2020-21, Canada suffered an inflation surge in 2021-22. However, if the Bank of Canada had been subject to a clause in its operating mandate that limited M3 growth to, say, 10% on a year-on-year basis, it is very unlikely that Canada's inflation would have risen much above 4-5%.

Ideally, a symmetrical limit should also be imposed on the lower side, perhaps at 2% on a year-on-year basis. This would give a range of 2-10% for M3 growth.

Such monetary growth limits are deliberately wide because it is highly undesirable for any monetary target to become a fetish. A narrow range would lead to significant interest rate instability. By setting wide limits, the Bank of Canada would have ample time to tighten or ease monetary conditions before either limit was exceeded.

It is instructive to consider how such a monetary brake might have changed the Bank of Canada's operations during the Covid crisis. As Figure 4 showed, the lag between the peak in (smoothed) M3 growth and the peak in (smoothed) prices was almost exactly two years.

If the Bank of Canada had conducted the bulk of its operations using short-term paper (e.g., repos, commercial paper, Treasury Bills, and other equivalent instruments) in place of longer-term government bonds, then the injection of liquidity would have been more short-lived. As these short-term instruments matured, they would have rolled off the Bank of Canada's balance sheet, and the excess money or liquidity would have been withdrawn from the system.

Instead, the long-term debt instruments (mainly Government of Canada bonds) purchased by the central bank remained on the Bank of Canada's balance sheet, and deposits at the commercial banks swelled by a comparable amount, giving rise to a ***sustained*** increase in M3. The smoothed data in Figure 4 is designed to capture the effect of the delayed impact of money growth on inflation. On this basis M3 peaked in February 2021, almost two years after the onset of Covid and the start of the surge in M3. CPI inflation, on the same smoothed basis, peaked in January 2023, almost exactly two years later.

The proposition here is well grounded in history.[4] There was undoubtedly a panic – a "dash-for-cash" – in early 2020 and the Bank of Canada clearly felt it necessary to respond. But if it had limited its operations to ***short-term securities*** and these had been allowed to mature, M3 might only have surged between March 2020 and September 2020. By 2021 M3 growth rate would have been returning to normal. Such short-term injections of money do not have a sustained impact on the overall

that expenditures are financed out of revenues, not debt issuance. Structural deficits are limited to 0.35% for the federal government and 0% for state governments, with an exception clause for emergencies.

[4] See, for example, the crisis of 1825 in the UK when the Bank of England used only short-term instruments to quell the money market panic. Larry Neal, "The Financial Crisis of 1825 and the Restructuring of the British Financial System" https://core.ac.uk/download/pdf/6958894.pdf

price level, and Canada would have avoided a substantial amount of the inflation it suffered.

=-=-=-=-=-

**Transcript of Verbal Testimony**

# THE STANDING SENATE COMMITTEE ON BANKING, COMMERCE AND THE ECONOMY

## EVIDENCE

OTTAWA, Thursday, November 21, 2024

**Senator Pamela Wallin** (*Chair*) in the chair.

**The Chair:** For our second panel today, we have the pleasure of welcoming John Greenwood, OBE, SBS, Chief Economist, International Monetary Monitor.

Mr. Greenwood, I understand that you have some opening remarks, and so the floor is yours.

**John Greenwood, OBE, SBS, Chief Economist, International Monetary Monitor, as an individual:** Thank you, Senator Wallin. Good afternoon, everybody. In recent decades, governments have given central banks an objective, usually an inflation objective, but they have given them full discretion on how they achieve that objective. In Canada this has become known as the flexible inflation targeting framework, and it serves as an internal anchor to stabilize the price level. There are countries where the policy is different. I am familiar with Hong Kong and Singapore where they have an external anchor, that is, a fixed or managed exchange rate. But for a very small, open economy with very large capital movements, that is appropriate. As you heard in your last session, most economists would not think that's appropriate for Canada. So a floating exchange rate regime is most appropriate for Canada.

In my view, there is no reason to question Canada's adoption of inflation targeting. As I understand it, there's been this supplementary goal attached through the monetary policy framework review in recent years to attain maximum sustainable employment. I don't have an objection to that. I also see no reason to question the adoption of the specific inflation target, that is, 2% as measured by the consumer price index with an inflation control range of 1 to 3%. No problems with any of that structure.

However, in light of Canada's actual inflation experience during and after the COVID episode, inflation targeting was, at the least, derailed, or it clearly failed.

In my opening statement, which the clerks will circulate afterwards, I go into some detail on the reasons for that deviation of the inflation from the target range and, secondly, changes

in the guidelines or operational requirements for the Bank of Canada to prevent such a recurrence occurring in the future. I will sketch those two things very briefly now.

Now, the dominant reason for the inflation given by the consensus of economists is that it was due to a whole series of external shocks, resulting from the pandemic and then exacerbated by the start of the war in Ukraine. Now, there are numerous problems with this view, and my opinion is that that view is not correct. One problem with the view that it was external shocks is that asset prices, such as equity prices or house prices, started rising in the middle of 2020, well ahead of any big surge in consumer goods prices. So that suggests an alternative source of the price surge. Second, the individual markets that were subject to price rises — things like computer chips or second-hand autos or commodities — these are what we call relative prices. They do not justify or explain a rise in the overall price level.

If I have to spend more on gasoline at the petrol pump, then I've got less money to spend on other things. If we apply that to the whole economy, what will happen is that while the gasoline price may go up, other prices are forced to come down a smidgen. So that argument simply does not hold water.

The third problem with the story of the disrupted supply chains causing the overall inflation is that there were numerous countries, notably Japan, Switzerland, China, India and Indonesia, where there was no significant rise in inflation whatsoever, yet these countries were exposed to exactly the same supply disruptions facing Canada, the U.S., the U.K., the Eurozone and so on. We have to come up with a different explanation.

My explanation is that the policies adopted by the Bank of Canada, the Reserve Bank of Australia, the Reserve Bank of New Zealand, the Fed, the Bank of England, the European Central Bank, or ECB, and so on, and the quantitative easing, or QE policies in particular, created a large quantity of money which ultimately translated into a much higher rate of inflation. So the profile of inflation obviously followed the individual markets. If oil prices went up, then the overall inflation appeared to go up. What validated or enabled that was the prior rapid growth of money.

It is probably worth a moment of digression here to say that, after the global financial crisis in 2008 and 2009, a number of countries did adopt QE. Their central banks did expand their balance sheets rapidly, but that did not cause inflation. Why was it then that QE created inflation at the time of COVID but not in the earlier period?

The answer is that, most of the time, the commercial banks create money by making loans. When they make a loan, they credit the deposit account of the borrower. At the time of that global financial crisis, or GFC, commercial bank balance sheets were severely impaired by losses in the subprime housing market and securities losses related to the housing market. Banks basically withdrew from lending. In the United States, for example, bank lending declined by almost a trillion dollars. If that had been allowed to translate into the rate of change of money, that would have led to a sharp drop in the quantity of money, similar to what happened in the Great Depression of the 1930s.

**The Chair:** Mr. Greenwood, I would like you to conclude that point because we're all waiting for your assessment here, but we need to get to our questions shortly.

**Mr. Greenwood:** Sure. To move on from that, my second point is that, in order to prevent such a surge of money growth in the future, it's probably appropriate to adjust the mandate to deal with that excess discretion that central banks have. The way I would deal with it is to impose the monetary equivalent of a fiscal debt brake. You would have an upside limit of, let's say, 10% on broad money growth and a downside limit of 2% on broad money growth. The effect of that would be that you would limit either excessive growth or inadequate money growth, but you would retain the inflation target. You would retain the maximum sustainable employment objective, but you would impose this additional monetary brake. The net results would be highly favourable for Canada over the longer term. Thank you.

**The Chair:** We'll come back to those issues. That is very helpful, and we will distribute your remarks. We have done it online right now.

We'll begin our questions with the deputy chair, Senator Loffreda.

**Senator Loffreda:** Thank you, Mr. Greenwood, for being here with us this morning. I'm impressed with your global analysis. My question is on global comparison. How does Canada's approach to monetary policy compare to that of other advanced economies? If you can elaborate, what lessons can be drawn from these comparisons to improve effectiveness? You did mention Japan, Switzerland and Indonesia having no inflation. Without getting into it and repeating all your comments here, I found them very insightful. The question is how can we learn?

**Mr. Greenwood:** Most central banks adopt very similar inflation-targeting formulae for their day-to-day operations, but, in practice, these [other] central banks did not respond to COVID by rapidly increasing the size of their balance sheets. In some cases, it was because they did not see a need to do that. I would say that's the case in China. That was the case in Indonesia. In Japan, they did a small amount through bank lending, rather than through quantitative easing. In Switzerland, I'm not sure what the reasons were.

The reasons were different, but the bottom line is that the effect of standing back or not doing the quantitative easing was that their money growth rates did not accelerate as we saw in the U.S., in Canada, in the Eurozone, in the U.K., in Australia and so on.

**Senator Loffreda:** Thank you for that. You also quickly discussed money supply, and you're a proponent of it, with the upside limit and what have you. What can we learn from historical lessons? If we look at the monetary policy strategy in Canada — the money supply is a monetary strategy — it was not deemed a major success for many reasons. You know the reasons as well as I do, if we look at our historical lessons. Any thoughts on that? Are you really strong on creating that upside limit and money supply?

**Mr. Greenwood:** I don't believe that central banks have the tools to manage the money supply month to month, let alone on a week-to-week basis, so I'm far from proposing a short-term objective of keeping money on a narrow growth path. I don't believe that's feasible or desirable. But if you look at the evidence around the world, you cannot find an example of a sustained high rate of inflation that has not been preceded by a rapid rate of money growth.

It's my view that what has happened in the last two or three decades is that central bankers have dismissed money as a macroeconomic indicator. As a result, as I suggested in my opening remarks, when there was a need for additional liquidity at the beginning of the

COVID crisis, the central banks ignored the quantity of money they were creating. They went, in a very big way, to increase the quantity of money through QE, the quantitative easing operations. The result was this surge in money growth across the world, with the exception of the countries that I named.

The evidence is that if you let it create too much money, you get inflation. I'm not saying that you're going to get a shorter-term control over inflation because there are lots of things that affect inflation in the short run. What we do know from a number of examples is that if you have a moderate and steady growth of money, then you will not have a problem on the inflation front.

**Senator Loffreda:** Thank you. The old saying is that money is like oxygen. If you get too much, you get too high. If you get not enough, you're gonna die.

**Mr. Greenwood:** I would agree with that.

**Senator Ringuette:** Just an explanation in regards to Japan and their low inflation after COVID. My understanding is the way that the Japanese government handled potential high inflation is mostly because there is a central body that buys the petroleum product necessary for the citizens of the country, and it then resells to its citizens at a reasonable, low-inflation price. So that's my understanding, unless you have other information that you would like to share with us in regards to Japan.

**Mr. Greenwood:** I lived in Japan for four years, and I studied economics there. No, Japan does not have a general regime of government price fixing. It is an open, free-market economy, very much like Canada, and the price of energy, along with the prices of many other commodities, is free to vary in private markets. So they don't fix their prices.

Inflation in Japan has been low because money growth in Japan has been very low. In my view, it has actually been too low, but that's really a separate issue. But by keeping low money growth, they have had a sustained low rate of inflation, and that's really the story of the last 25 or 30 years in Japan.

**Senator Gignac:** Thank you to our witnesses. We are very fortunate to have you.

Since we have you as a witness, I want to ask you about a different aspect. Do you find that government and central banks use enough macroprudential tools? Because when you have a supply shock, maybe it is better to use macroprudential measures rather than just monetary policy to fight inflation. Could you elaborate a bit more on that, if possible. Thanks.

**Mr. Greenwood:** Yes, I think I'm right in saying that macroprudential tools are primarily used for restraining the growth of debt and preventing balance sheets from becoming overstretched. I also lived in Hong Kong for many years, and Hong Kong pioneered the use of debt-to-income limits on mortgages so that — and also limits on the loan-to-value ratios for mortgages. So these are very desirable to prevent individual sectors from becoming leveraged. Most — or many financial crises start from leverage. If you prevent the buildup of leverage, then you don't get the crisis.

Now, in the global financial crisis, it was the financial sector and the household sector which became leveraged. If macroprudential tools had been used more widely, then those debt levels would not have become so high. Macroprudential tools are useful from that point

of view, that is, limiting leverage, but debt and money are different things, and macroprudential tools don't prevent excess money growth.

**Senator Gignac:** In plain English, if I understand, it is more of a tool to prevent inflation on the asset prices rather than really a useful tool to monitor the goods and services inflation or prevent inflation on goods and services. It is more a risk to the asset price than the goods and services. Do I understand that correctly?

**Mr. Greenwood:** Yes, I agree with that interpretation. So the macroprudential tools are applied to balance sheets of banks for loans, and a large part of banks' lending is for the purchase of assets. So you are right.

**The Chair:** I want to come back to the point you were making in your opening remarks and how you stated it in your formal presentation here as well, that what spurred the inflation was not the result of all these supposed external shocks, but, really, the Bank of Canada's massive purchases of government securities or printing money to fund what the government was doing at that time, and it kept ringing up. So in our look at the mandate of the Bank of Canada and the constraints and restraints and the transparency that is needed there, what mechanisms could you suggest for a future situation like this for the Bank of Canada to be able to say to governments, "You have got to slow the rate of spending and therefore the pressure on us, because this is going to be inflationary"? How do they push back without getting into that very direct political exchange?

**Mr. Greenwood:** Well, there are a number — not a lot, but a number of cases where government debt has grown rapidly, but the central bank has not purchased that debt, and a case in point is Japan. Japan has run huge government budget deficits in recent years, and the government debt-to-GDP ratio is very high. It is over 260%. But all of that debt has been funded in the markets, that is, just by financial institutions, savers, sovereign wealth funds and so on. So the important thing is that the Bank of Canada has the discretion or the independence to avoid directly financing government expenditure. As long as it doesn't buy those securities and its balance sheet doesn't grow very rapidly, then those securities issued by the government will have to be bought by nonbanks or by savings institutions, and as long as that happens, then the debt on its own is not going to be inflationary. It is money that creates inflation, not debt.

**The Chair:** But in this circumstance — and we remember it all too vividly — it was, "We don't know how long this crisis will last. We need to do this. We need to get cheques out the door to Canadians. We need to fund or subsidize this program and that program." When you are in a crisis mode, it is hard to find the checks and balances.

**Mr. Greenwood:** It is, indeed, and I have an answer to that problem, and that is also in my paper that has been circulated. And that is that if the central bank, if the Bank of Canada in this case, had concentrated on injecting liquidity by means of purchasing or doing repos with short-term instruments, instruments with a maturity of one, three, six months, then the money would have been injected, but then all those securities would have matured and rolled off the Bank of Canada's balance sheet. Instead of that, the Bank of Canada purchased, very largely, Government of Canada long-term securities so that, first of all, the securities remained on the Bank of Canada's balance sheet and, secondly, the money created as a result of that remained in the hands of the public, and that's what produced the inflation.

**The Chair:** So they had the tools; they just didn't use them?

**Mr. Greenwood:** I believe so. I think that they could have done this on the model of the Bank of England on numerous occasions in the 19th century, when there was a panic in the money markets, as we had in March of 2020. In the 19th century the Bank of England injected money but then withdrew it within a few months. Because the time lag between creating money and the inflation is something like a year and a half to two years, if you withdraw the money within a fairly short time frame, then it is not going to create inflation.

**The Chair:** Very interesting. Thank you.

**Senator Yussuff:** Thank you, chair. Mr. Greenwood, during the 2008 crisis, one of the things that all central bankers were trying to deal with is, of course, how to keep the economy going, and quantitative easing was the central plank in their efforts to ensure the economy didn't collapse. It didn't generate the level of inflation we saw from the COVID crisis. So quantitative easing, at times, has been used very successfully to manage, of course, the challenge that central bankers were trying to help manage with governments. It would appear to me, unless I'm completely wrong, we had a different effect back in 2008 compared to what we had in the most recent crisis with COVID.

**Mr. Greenwood:** I tried to explain that very briefly in my opening remarks. Forgive me if I'm repeating myself, but there was a need for liquidity in both cases. In the GFC case, in the global financial crisis case, the banks themselves were impaired, so they withdrew from lending. It fell to the central banks, if you like, to create the money to enable the economy to continue to spend and grow. But in the COVID crisis, the banks were in good shape and, in a number of countries, lent into the downturn. Certainly in the U.S. they did that. But because the banks were in good shape and were ready to lend and create money at the normal pace, the additional money coming from the central bank fuelled an excess growth of money, and that created the inflation. That's the difference between the GFC and the COVID case, as I see it.

**The Chair:** I just want to come back. I know you have spelled this out in your document, but I would just like to hear you on a follow-up to my own question. You have described that the bank would need to employ a monetary brake and that there would be a place at which that would kick in. How detailed could that be so that it would be known to governments and the public and other financial institutions alike as to when the bank should and could put on the monetary brake?

**Mr. Greenwood:** I think it would have to be spelled out along with the inflation target, and it would have to be expressed in terms of the broadest quantity of money. It does not make sense to use the Bank of Canada's balance sheet, which is not used as money, by the vast majority of people in the economy; and it does not make any sense to use something like a narrow definition of money, because people can move money from non-interest-bearing demand deposits to interest-bearing deposits. So you need the broadest measure of money, which also actually gives the best relationship with the GDP measured in current dollars.

Just as the public will know that the inflation target is 2%, they will also start to learn that money growth is subject to these broad limits of — well, I have proposed 2% and 10% but others may have a different view.

**The Chair:** Okay. That's very helpful. You would want to see that as part of the mandate and spelled out as clearly as an inflation target or an employment target.

**Mr. Greenwood:** Yes, because the central bank officials must be accountable for that, and if they exceed it, then they have to answer for that.

**The Chair:** All right. Thank you. This has been very instructive. We really appreciate this. It is a difficult topic to get our heads around, but we are trying to be very explicit in our advice and thoughts on that, and you have really given us a lot of meat on the bone here. Thank you so much for being with us today, Mr. Greenwood. I know you have been a witness with us before, and we always appreciate it. The Chief Economist with the International Monetary Monitor, thank you for your time.

**Mr. Greenwood:** Thank you.

**The Chair:** Senators, that concludes our meeting today.

(The committee adjourned.)

-=-=-=-=-