

# External Comments on the Review of the Bank of Canada’s Exceptional Policy Actions During the Pandemic

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## I. Introduction

This document provides an independent analysis of the Bank of Canada's *Review of its Exceptional Policy Actions During the Pandemic* (hereafter referred to as the “Review”) to assess whether the report is comprehensive, balanced and credible. This introduction summarizes the Review’s strengths. It is then followed by a discussion of areas where more clarity or insights could improve the Review.

The pandemic was an extremely challenging period—the speed by which events unfolded, the magnitude of the financial crisis and economic collapse, and the unprecedented nature of the shock was unlike anything that had previously occurred. An aggressive and multifaceted response was needed—with little time to carefully evaluate, weigh and discuss options. In this extraordinary context, central banks around the world were forced to innovate and experiment with new strategies. These actions were a critical part of the broader policy response supporting households and companies as the pandemic spread and economies were locked down, as well as helping support rapid recoveries afterwards. More than four years after the pandemic unfolded, it’s an opportune time to step back and evaluate what worked well, what did not, and what can be improved in the future (particularly with the benefit of more advance planning).

Against this background, the Bank of Canada (hereafter referred to as the “Bank”) should be congratulated for undertaking this review and evaluating the lessons learned from the pandemic response. This exercise improves accountability and strengthens transparency, both necessary complements to central bank independence.

In our view, the Review offers a detailed, balanced and credible summary of the actions taken by the Bank during the pandemic, their sequence, reasoning, and expected impact. It also provides an assessment of the effectiveness of actions taken by presenting solid evidence, using both internal analysis and external research.

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In parallel, the Review acknowledges potential unintended consequences of its market-functioning facilities, quantitative easing (QE), and forward guidance (FG), showing the willingness of the Bank of Canada to critically evaluate its own policies. It also draws important lessons, showing a willingness to improve policy in the future. Moreover, it raises a number of key questions that the economic profession is not in a position to answer at this stage, but which should be a priority to analyze and better understand in the coming years.

A key strength of the Review is its clear and accessible writing. Complex economic concepts are explained in a way that Canadians can understand. This should help build trust and ensure transparency by allowing the public to grasp the importance and rationale of the Bank's policy decisions. In our view, accompanying the report with shorter, and even simpler summaries, guides and other communications could improve accessibility further.

On substance, the Bank responded to the extraordinary challenges derived from the pandemic with a swift, wide-ranging and balanced combination of policies, including some that were adopted in other countries, but also incorporating innovative elements to adapt to the specific characteristics of the Canadian economy. This bold and timely response provided critical support to the economy during a stressful time and, similarly, allowed the Bank to achieve its mandate of price stability after the extraordinary inflationary shocks that hit the economy. From an international perspective, much of the Bank of Canada's response was similar to that of other major advanced economies and followed the "best practices" in the broader central banking community at that time.

We agree with the general conclusions of the Review and, in particular, with the need to improve communication about the goals, structure, interactions, and exit strategies for unconventional policy tools. We also highlight a number of outstanding questions that would be useful to address and are important to improve responses to future crises. More specifically, we highlight six points.

First, we agree on the need to more clearly distinguish between QE for market functioning versus monetary stimulus. In this regard, the Review suggests that there was a differentiation within the Bank of Canada when these tools were used, but our view is that the delineation was fuzzier (in all central banks) in real time and could be improved in the future. A clearer distinction would not only improve the communication around these programs, but also incentivize a careful consideration of the amount, duration and structure of any asset purchase program at each stage in order to ensure each program is designed in a way to accomplish its specific goals.

Second, we also agree on the importance of improving any programs involving bond purchases for market functioning if needed in future. This includes incorporating the key principles outlined in the report: e.g., penalty fees, conditions for exit/expiration, and clarifying differences from QE. Careful institutional *ex ante* design of the programs should be a priority so that they can be implemented quickly in a crisis and with more clarity to the markets and fewer negative side-effects. A clearer explanation of exactly why each program is needed, what it is expected to accomplish, and how it interacts with other policies is also needed.

Third, we agree with the conclusions on how to improve QE (if needed) in the future. This includes being defined in a more state-contingent manner, better specifying exit conditions, better explaining quantities, and more carefully considering the potential costs and benefits. This also should involve consideration of whether reducing policy rates below the current lower bound of 0.25pp could reduce the need for QE in certain circumstances.

Fourth, we are also of the view that, given the high level of uncertainty on the evolution of the economy, the use of FG should be limited to “conditional FG”. It is critical to improve communication to stress and explain this conditionality. The criteria for this conditionality should be carefully considered and adjusted in the future to provide greater flexibility if the economic environment does not evolve as expected.

Fifth, we concur with the need for improving forecasting tools, including enhancing the use of Terms-of-Trade Economic models that include cost-based channels for inflation, the need to put more emphasis on the impact of changes in the composition of demand, and the need to incorporate state-contingent dependent pricing mechanisms. Other potential improvements for forecasting and simulating different scenarios are summarized in section 3.A in this report and include a more careful modelling of supply shocks, external shocks, sectoral shocks and “outside the box” scenarios.

Finally, we agree on the need to improve communication and transparency, particularly around the use of unconventional tools. In addition to the points raised in the Review and the changes the Bank has already implemented, there are also additional steps the Bank could take to further improve transparency, particularly by a more timely and detailed release of the forecasts, by providing more information about the rationale behind quantitative easing (QE) and other unconventional policy tools when they are used, and by analyzing the pros and cons of other options followed by some central banks to convey the range of views of deliberations.

Against this broadly positive assessment of the Review, the rest of this document contains suggestions where additional insights could be provided and important questions addressed. Section 2 focuses on specific suggestions for the monetary policy tools, including conventional measures, market support instruments, QE and FG design, and interactions between tools. Section 3 discusses suggestions for the broader monetary policy framework related to forecasting tools and improving communication and transparency. Many of these suggestions include issues that should be prioritized in future work—and which will require more extensive analysis than possible for the current Review.

## **II. Need for Additional Discussion of Tools**

### **A. The Use of the “Conventional” Tool of Adjusting the Policy Interest Rate**

Section 2 of the Review provides a concise overview of the broad set of policy responses and tools utilized by the Bank in response to the pandemic. The remainder of the Review then focuses on the use of three tools: asset purchases to support market functioning, quantitative easing, and forward guidance. While this focus makes sense given the much more limited experience with these “unconventional” tools, it would be helpful to include some evaluation of the Bank’s use of the “conventional” tool of adjusting the

policy interest rate during the pandemic. For example, was the transmission of changes in policy rates similar to historical episodes? Or have changes in the structure of the economy (such as changes in the banking system) changed the way in which conventional monetary policy affects the economy?

There are also two broad sets of issues around reducing and raising the policy interest rate that could be addressed: the effective lower bound for the policy rate and lessons from the unusually aggressive rate increases in response to the post-pandemic inflation.

In response to the pandemic, the Bank of Canada reduced its policy interest rate to 0.25 percent—the same lower bound as over a decade earlier in response to the Global Financial Crisis (GFC) —and then relied on “unconventional” policies to provide additional stimulus. Although Members of the Committee mentioned a discussion of whether rates could be reduced further, the Review only offers a short justification for why this was not done (due to concerns about the functioning of the financial system).<sup>1</sup> Additional information about this deliberation and any underlying analysis would be useful to understand the costs and benefits of further reductions in the policy rate during the pandemic and in the future.

The international experience suggests that the effective lower bound for policy rates in some economies is lower than believed at the time of the GFC. In fact, over the decade before the pandemic, several central banks reduced their policy rates to record lows, including to negative levels, such as the Riksbank (-0.50%), European Central Bank (-0.50%<sup>2</sup>), Bank of Japan (-0.10%), and Swiss National Bank (-0.75%). The Bank of England has revised its assessment of its lower bound several times, from 0.50% during the GFC, to 0.10% in response to the pandemic, to announcing the option for negative rates in February 2021 (albeit the policy rate was not subsequently lowered to zero or below).<sup>3</sup>

This international experience suggesting that policy rates can be lowered further than believed a decade ago also provides mixed evidence on the benefits and costs. This raises a number of questions. Did the Bank debate if the lower bound had changed and whether lowering the policy rate further in response to the pandemic could have reduced its use of unconventional tools? If negative rates are not an attractive option for Canada, why is the situation different than in countries that implemented negative rates? Even if negative rates were not an optimal response to the pandemic, what are the conditions under which they should be considered in the future? Even if rates below 25bps have significant disadvantages, are there situations where negative rates would be a more effective means of providing stimulus than QE?

As economies reopened, activity rebounded, and inflation accelerated after the worst phase of the pandemic, central banks in advanced economies were slow to remove stimulus. There were a number of legitimate reasons for this cautious approach.<sup>4</sup> Partially to compensate for this slow start, central banks

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<sup>1</sup> There is a brief mention in footnote 1 that the theoretical lower bound was estimated to be -0.50% in 2016, and that rates were not lowered below 0.25% during the pandemic due to “concern about the functioning of the financial system.”

<sup>2</sup> This ECB adjusts several policy rates. This is the rate for the deposit facility.

<sup>3</sup> The BoE also lowered its policy rate to 0.25% in 2016 after the Brexit vote and stated that there “was scope for further action”, but did not specify the new lower bound.

<sup>4</sup> English et al. (2024) provides more detail on these reasons for a cautious approach: (1) Confidence in the stability of inflation expectations, partly resulting from inflation being below target in most advanced economies for over a decade, was expected to provide an anchor that should mitigate any second-round effects from the initial inflation spike. (2) The

then raised interest rates more aggressively than has occurred during recent tightening cycles. This included raising rates not only more in aggregate, but also by larger increments and more frequently than was expected. While the Bank of Canada’s total increase in interest rates was in-line with that of other advanced economies, it was among the most aggressive in terms of the speed of its tightening. For example, Appendix Table 1 shows that the Bank of Canada raised rates about the same number of times and by a roughly similar amount as in other major central banks in advanced economies, but moved more quickly once it started tightening and made greater use of “super-sized” hikes (i.e., greater than the 25bps that was typical in recent tightening cycles). The Bank of Canada raised rates by 4.25 percentage points in the first year of tightening (second only to the United States), was the first advanced economy central bank to increase by 50 basis points in a single meeting, and then the first to hike by 100 basis points in a single meeting (with only one other advanced economy central bank moving at this pace at any point since the pandemic).

This more aggressive approach for raising interest rates raises a number of questions—especially as the Bank is now cutting interest rates more aggressively than other advanced economies as well. What were the primary reasons for the slow start to raising interest rates (e.g., was it forecasting errors and/or challenges sequencing given constraints around forward guidance and QE)? If the Bank had provided less stimulus during the pandemic and/or started removing stimulus earlier, would that have meaningfully reduced the increases in interest rates that were subsequently required? Or would it have simply allowed the Bank to raise rates at a slower, more traditional pace? Is there any evidence that the more aggressive rate hikes provided benefits—such as sending a stronger signal about commitment to price stability (and thereby better anchoring inflation expectations)—potentially reducing the aggregate rate increases that were subsequently required? Did these “supersized” rate hikes create any problems (for financial stability, households or businesses)? Or was it the higher level of interest rates (and not the path of hikes) that has created challenges? Perhaps most important, what are lessons for the future? With the benefit of hindsight, was the aggressive path of rate hikes able to compensate for the delayed start? Or did it lead to overtightening and create avoidable risks to financial stability?

## **B. Evaluation of Other Facilities and Programs Adopted in Response to the Pandemic**

Figure 2 in the Review is a timeline showing the numerous new facilities and programs announced during the period of severe financial market stress in March and April of 2020. This was an extremely busy period—with the Bank of Canada launching “10 exceptional programs to restore market functioning” of which nine “were newly designed and implemented for the first time.” The figure highlights the diversity and breadth of these programs, including the: Extended Term Repo Facility, Bankers’ Acceptance Purchase Facility, Canada Mortgage Bond Purchase Program, Provincial Money Market Program, Commercial Paper

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prolonged recovery from the 2008 GFC suggested that labor markets were slow to recover after sharp recessions, and when combined with evidence that the Phillips curve was flat over the last decade, any recovery was expected to have only modest and slow-moving effects on wage and price inflation. (3) After the unprecedented collapse in output and employment, there appeared to be substantial excess capacity, especially given the large fall in labor force participation in some countries. (4) Most of the initial sharp spike in headline inflation reflected supply shocks around Ukraine’s invasion—the type of shocks that are usually judged to be “transitory” and thereby something that monetary policy could look through. Also see Forbes et al. (2024) for evidence that central banks in advanced economies were slow to start tightening interest rates relative to historical cycles.

Purchase Program, Contingent Term Repo Facility, Provincial Bond Purchase Program, Corporate Bond Purchase Program, and incremental purchase of Canada Treasury Bills. Section 3 of the Review then provides an assessment of these market support programs overall, as well as more details on the largest programs, focusing on the Government of Canada Bond Purchase Program (GBPP).

This analysis is helpful and addresses most of the key questions about these programs in general, and the focus on the GBPP makes sense as this was not only the largest program, but also is slower to unwind (as it morphed into QE and is responsible for most of the assets currently held by the Bank). Some additional discussion of the programs other than the GBPP would be useful, however, including an evaluation of how each fits in the overall strategy of supporting market functioning, and lessons for the use of each program as part of the broader toolkit in the future. Granted, the Report refers to other analysis of these programs (such as Fernandes and Mueller, 2023; Johnson, 2023; and Gravelle, 2023), which provide more in-depth discussion of these programs, how each program performed, and some recommendations for the future. This type of analysis is lengthy—and does not need to be repeated in the Report—but the Report would benefit from more discussion of which of the key insights from these longer papers were most important and which of the recommendations should be prioritized if the program is used in the future.

More specifically, a section of the Review could evaluate how each program fit in the context of the broader suite of programs, as well as if the Bank’s assessments differed from those in the other analyses in order to answer the following questions. What were the specific goals of each program (including whether it was solely aimed at providing support for a specific market and/or also contributed to QE)—and could those goals be accomplished through other programs? What were the *ex post* assessments of whether the benefits exceeded the costs (including any side effects such as creating moral hazard)? Could a subset of programs—or even just the GBPP combined with lower interest rates (possibly lower than 0.25%), achieve the primary goal of supporting market functioning? If an important outcome of these facilities was to “ease funding pressures on Canadian banks” (as stated on page 21)—are there more direct ways to accomplish this goal in the future (such as through new programs subsidizing lending by banks or expanding existing funding for credit programs offered by the Export Development Canada or Business Development Bank of Canada)?<sup>5</sup>

In addition to answering these questions about each facility in the context of the pandemic response, it is also important to draw from this analysis to look forward and consider how and under what conditions any of these programs should be considered in the future. In order to be better prepared, it would be useful to address a number of questions. Which programs/facilities should be considered in future periods of market stress (and which should not be considered)? Why (and why not)? What criteria should trigger the use of each facility? Based on the pandemic experience, are there ways to improve specific program design? What detailed planning should be done *a priori* so that the facilities could be quickly activated—

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<sup>5</sup> For example, the UK built on former programs to adopt a new Term Funding Scheme for Small and Medium Enterprises (TFSME), and Australia introduced the Term Funding Facility (TFF), both of which basically provided incentives for bank lending with the former prioritizing lending to smaller companies. The ECB used targeted longer-term refinancing operations (TLTROs), by offering term loans to euro area banks at a rate below the ECB’s deposit rate. These programs can also generally be unwound faster and with less concern about market disruption than unwinding assets purchased through QE programs.

including detailed rules on what collateral was acceptable? Many other central banks also launched a multifaceted set of market support programs; are there lessons from the international experience for the design of similar facilities as those offered by the Bank of Canada as well as for entirely new types of facilities that were not offered?<sup>6</sup> Finally, as discussed in more detail in section 2.D, are there important interactions between the use of individual facilities? For example, did multiple asset purchase programs complement each other and generate larger declines in yields so that their impact is multiplicative instead of additive?

### **C. Design of QE, Other Programs and FG**

The speed with which the pandemic spread and affected financial markets left little time to design, plan and discuss QE and the other programs before implementing them. There were undoubtedly lessons learned. The Review does address the most important aspects to consider if these programs are used again, such as: better differentiating purchases for market functioning and QE, clarifying the conditions for exit, selling back bonds purchased to support market functioning as soon as stress subsides, the need for QE to be defined in a more state-contingent manner, and making broader use of penalty pricing. These are all crucial and a good place to start. Nonetheless, even more detailed planning in case these facilities need to be used again would be useful, especially as technological change has accelerated the speed by which bank runs and crises can occur (as recently experienced, for example, in the unprecedented speed of the bank run at Silicon Valley Bank in 2023). Policymakers could have even less time to respond to a period of severe financial market stress in the future. Therefore, it would be useful to take this opportunity to draw concrete lessons from the utilization of each individual facility.<sup>7</sup>

One significant challenge stressed in the Review refers to the distinction between bond purchases for market functioning and those intended for QE. During the COVID-19 response, this distinction was not always clear, which contributed to some ambiguity in the Bank's objectives. While differentiating between financial stability and price stability objectives is inherently complex, it would be beneficial for central banks to try to make these distinctions more explicit in order to avoid similar confusion in any future interventions. This would also support a more careful design of any program and chance to consider if the scale, scope and structure was appropriate for the specific goals. More specifically, program designs should have distinct communication that specifies if the objective of the asset purchases is to support market functioning versus QE. This might involve assigning different names to programs based on their primary purpose. It could also mean involving different groups to design and vote on the programs; for instance, the Bank of England (BoE) has the Financial Policy Committee (FPC) vote on market-functioning purchases and the Monetary Policy Committee (MPC) for QE. Finally, it would involve different guidance on the quantities and speed of asset purchases based on the specific goal.

We also strongly agree with the conclusion drawn in the Review that conditional FG, which links policy commitments to specific economic conditions, might provide the Bank with greater flexibility and reduce the risk of being locked into policy paths that become unsuitable if economic circumstances change. In

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<sup>6</sup> For example, Wilkins (2024) provides useful insights from the Bank of England's experience.

<sup>7</sup> For a much more detailed discussion of different aspects of program design that should be considered, see Buiter, Cecchetti, Dominguez and Serrano (2023).

this regard, it would be useful to assess whether the state contingency criteria used during the pandemic response were appropriate. More specifically, could the state-contingent criteria be better designed to provide the Bank with more flexibility? Or would greater flexibility undermine its effectiveness? Given the long and variable lags for the impact of monetary policy, should the Bank have the ability to adjust rates before slack is absorbed (instead of when slack is absorbed, per the pandemic guidance)? And given the well-known challenges in measuring slack, particularly during periods of heightened uncertainty and structural change, is slack a useful metric for guidance?

#### **D. The Interactions Between Tools, Facilities and Responses**

As discussed above, the Bank responded quickly to the pandemic with a multifaceted set of programs and facilities. At the same time, the government announced a broad array of policies, including substantial fiscal support, and other countries implemented a range of responses that directly and indirectly affected Canada (from central bank currency swap lines to trade and mobility restrictions). It would be helpful to have more discussion of the interactions between these policies, instead of only analysing them individually. A full discussion of the fiscal and international responses would be lengthy and beyond the scope of this Review, but it would be useful to address certain aspects of the interaction of monetary policy with fiscal policy, as well as much more analysis of the interactions between the various Bank programs. This is pertinent to fully understand the costs, benefits, and overall effectiveness of each of the tools and programs, as well as to be able to better assess what combination of policies should be considered in response to future crises.

First, disentangling the complementary/substitutable effects of monetary and fiscal policies during the pandemic (and later during the inflationary episode), would be useful, particularly with regards to unconventional tools. Although fiscal and monetary policy should remain independent, there was no discussion of whether better information sharing with the fiscal authority during the pandemic could have provided useful information for the Bank to calibrate the extent of stimulus required. Could this have reduced the amount of assets that were subsequently purchased? It also would be helpful to more carefully evaluate the relationship between QE and fiscal policy in terms of the broader changes in the maturity structure of government debt. This may help ensure that both policies work together to support economic stability—not only during the crisis, but also in the aftermath. The optimal size and types of purchase under QE can change depending on the evolution of public debt. For instance, the effectiveness of the original QE program in terms of duration extraction may decrease if public debt increases more than the central bank initially anticipated, such that adjustments to the size or composition of QE (or the structure of debt issuance) may be necessary to maintain the desired impact. All in all, it would be valuable to more fully consider how the evolving fiscal environment influences the design and effectiveness of different monetary policy tools.

Second, it would be helpful to more fully consider the interactions between “conventional” adjustments in the policy rate and the various “unconventional” policies. Starting with the period when the Bank was easing monetary policy, if the policy interest rate was lowered further (including to negative levels), how would this interact with QE and market-support measures? Would less QE and market support be needed?



Or are QE and market support measures less effective when the policy rate is lower, so that more asset purchases would be needed to accomplish a given degree of stimulus or market support?

There are also a number of potentially important interactions between adjustments in policy rates and “unconventional” measures during the post-pandemic tightening. Did the use of QE and/or forward guidance hinder the ability of the Bank to shift from providing stimulus to tightening monetary policy as inflation picked up? If so, are there ways to better design QE and FG so that it is easier to adjust policy when the economic environment changes?

These interactions between adjustments in policy rates and balance sheet policies are also important beyond the immediate response to the pandemic and post-pandemic inflation. Although the Bank of Canada has reduced its bond holdings faster than most other central banks, it will have a larger balance sheet than before the pandemic for an extended period (primarily from the government bonds purchased under QE programs). As discussed in the Review, this larger balance sheet causes the Bank’s net profits to be more sensitive to changes in the policy interest rate. Although the Review includes a helpful discussion of the recent fiscal implications, it would be useful to extend this discussion to answer several additional questions.<sup>8</sup> When the Bank started new market-support and QE programs in response to the pandemic, was there consideration of how a large balance could interact with unexpected rate adjustments? Could this constrain policy in the future? Would QE have been used more cautiously if there was a better understanding of the potential costs when rates increased (albeit weighted against the benefits of the QE programs)? Are there lessons on the appropriate strategy for the types of bonds to purchase as part of any future QE?<sup>9</sup> And last, but certainly not least, was there ever a conflict between financial stability and monetary policy goals—and if so—how was this resolved?

Related specifically to this key issue of the fiscal implications of QE, an area that would particularly benefit from further attention is how to better mitigate interest rate risk and account for any losses from asset holdings. One potential approach could be to explore broader indemnity agreements with fiscal authorities. Additionally, as done by other central banks, the Bank could retain incremental profits generated during QE (such as interest earned on assets), instead of immediately remitting them to the government. These retained profits could then be used as provisions against interest rate risk and serve as a buffer against future losses that may arise from rising interest rates or other losses. These types of changes, however, would require amendments to the Bank of Canada Act. An alternative approach would be to establish predefined rules for automatic recapitalization of the central bank if reserves fall below a certain threshold. Having these discussions before the next crisis would ensure stable funding for the Bank and avoid difficult political discussions during a period of stress if there is a funding shortfall.

Finally, in addition to the interactions between policy rates and unconventional tools, it would also be useful to consider the interactions between the various unconventional tools used in response to the

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<sup>8</sup> See Cecchetti and Hilscher (2024) for a useful comparison of these gains and losses to those for other major central banks.

<sup>9</sup> For example, the Bank of Canada purchased bonds that had a shorter duration than in most other central banks. This has made it easier to shrink the balance sheet quickly through letting the bonds simply roll off when they mature and not having to actively sell bonds. QE with a shorter-duration portfolio, however, may have provided less stimulus to the economy as there was less reduction in the longer maturities where QE has been shown to generate the largest effects.

pandemic. For example, how did QE interact with the bond purchases to support market functioning (to the extent that they can be differentiated) and the other market support facilities listed in Figure 2? If QE was started earlier, would all of the market-support programs still be necessary? How did forward guidance interact with QE? If a large portion of the effect of QE is through signaling rates will be low for longer, could this be accomplished with forward guidance and not require asset purchases? Or does forward guidance make QE more effective? If the effects of forward guidance are small—could you accomplish this with QE and not rely on guidance, potentially providing more flexibility to adjust policy quickly when the economy does not evolve as forecast?

### **III. Suggestions for Broader Framework for Monetary Policy Decisions**

#### **A. Need to Improve Forecasting Tools**

As mentioned in the introduction, the Review contains a useful discussion of the forecasting performance during this period and potential avenues for improvement. This builds on the description of the forecast errors provided in the July 2022 Monetary Policy Report.<sup>10</sup> However, given the significant forecasting errors observed and their first-order relevance for monetary policy decisions, the analysis could be strengthened, i.e. by analyzing how the Bank’s forecast did perform relative to that of other major central banks.<sup>11</sup>

In order to improve forecasts, we concur with suggestions in the Review, such as enhancing the use of Terms-of-Trade Economic models that include cost-based channels for inflation, the need to put more emphasis on the impact of changes in the composition of demand, and the need to incorporate state-contingent dependent pricing mechanisms. In addition, there are five other areas where forecasts could be improved—areas that have been identified by other central banks (and the Bank of Canada) as contributing to the substantial forecasting errors around the pandemic.

First is the need to improve our understanding of the shocks behind the inflation dynamics. This includes better development of models that allow for a clear distinction between the supply and demand side of the economy, as well as between domestic and global shocks. This also includes a better understanding of the shocks driving exchange rate movements in order to assess the broader impact. This incorporation of information on the underlying source of the shock will likely become even more critical in the future as the role of supply and global shocks might continue to grow in importance, due, for example, to geopolitical and climate events. How has the role of supply shocks and global shocks changed over time for Canada? How does this affect the appropriate monetary policy response? Under what conditions can certain shocks be “looked through” and when do they require a more forceful monetary policy response?

Second is the greater use of sectoral data and market intelligence. The pandemic highlighted the importance of specific goods and sectors (such as semiconductors and different roles for traded goods versus services). Certain types of shocks could cause shifts in the composition of production and demand

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<sup>10</sup> See the Bank of Canada’s analysis of their forecast errors during the pandemic in the Appendix to their [July 2022 Monetary Policy Report](#).

<sup>11</sup> An analysis of the main drivers of the forecast errors of the ECB staff projections can be found in Chahad et al. (2022, 2024).

which have meaningful effects on the evolution of inflation—and effects which differ from more generalized economy-wide shocks. How did different sectoral effects of the pandemic undermine the accuracy of standard forecasting models? Could the asymmetric effects experienced during the pandemic occur in the future? How can this be incorporated into existing models—or are entirely new frameworks required?

Third is the consideration of non-linearities in the relationships between key economic variables. The Review highlights that the pass through to prices was faster than expected during the pandemic, potentially reflecting nonlinearities emerging from the size of the shock and the sectoral compositions of the shocks. There may also be nonlinearities in how exchange rate movements pass through into prices. In the future if global shocks continue to be large, it will be more important to understand these nonlinear effects of how cost increases and the exchange rate impact consumer prices. How are the effects of large shocks different than smaller ones? How does price and wage-setting change? And are there nonlinearities based on the direction of the shock (i.e., whether it increases or decreases prices) as well as the size? Of critical importance, is the transmission of monetary policy different in the presence of large shocks?

Fourth, it is important to improve the analytical forecasting toolkit to incorporate high uncertainty and the impact on policy making. This is obviously challenging—especially as the uncertainty may be driven more by geopolitical instead of economic events. In practical terms, this should mean that, when making decisions, it is critical to be equipped not only with a baseline scenario, but also with alternative scenarios that simulate different paths for the assumptions underlying the baseline scenario.<sup>12</sup> It also means that policy should be flexible and able to be quickly adjusted if the economic environment changes in unexpected ways. How can this uncertainty be expressed in a way that is understandable to the public?

Finally, a reevaluation of the forecasting framework should include a discussion of the role of inflation expectations. Inflation expectations are central to much of the academic literature, are the focus of many central banks, and were important in bringing inflation down after the series of external shocks. In this regard, we were surprised by the minimal attention to inflation expectations in the Review. It would be useful to have a better understanding of the role of inflation expectations, their impact on inflation outcomes, and how the emergency policy responses interacted with inflation expectations. Did inflation expectations remain well anchored during the post-pandemic spike in inflation? How important was this in bringing inflation down? Can the Bank rely on inflation expectations remaining well anchored in the future if there is another inflation shock while memories of the recent inflation episode are still fresh?

## **B. Suggestions to Improve Communication and Transparency**

The Review acknowledges the importance of improving communication. In this regard, the Bank could consider enhancing transparency by providing more frequent and more detailed information on its internal macroeconomic projections and risk assessments that inform its policy decisions. More specifically, many key internal projections and quantitative risk assessments are currently only provided

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<sup>12</sup> The Review acknowledges the importance of this issue and mentions that Bank staff are presently considering ways to include a wider range of plausible economic scenarios into the quarterly projection exercise.

with a five-year delay. More timely reporting (perhaps on a quarterly basis or perhaps simultaneous with the publication of the *Monetary Policy Reports*) could meaningfully enhance the public's understanding of the decision-making process. This would also align the practices of the Bank of Canada with other central banks around the world, notably the Federal Reserve and the ECB.

An additional suggestion to improve the communication of policy decisions would be to incorporate more scenario analysis. This is an approach the Bank staff is presently considering incorporating into the quarterly projection exercise.<sup>13</sup> This approach would allow the Bank to present a range of possible economic outcomes based on different assumptions and uncertainties, rather than focusing on a single baseline forecast. This could be particularly useful in a world of heightened uncertainty and large external shocks (as discussed above), in which the economy could evolve in very different ways based on events outside the control of the Bank and which are hard to incorporate as error bands around a central forecast. This approach would have been particularly useful during the pandemic as traditional models were unable to capture the new economic relationships that emerged during this period. This type of communication could help the public and market participants better understand the risks and contingencies underlying policy decisions, potentially improving the predictability of the Bank's actions. Are there examples of other central banks that have used this approach effectively and which could be applied in Canada?

In addition to these changes in the types of analysis provided to the public, it would also be helpful to continue building on recent steps to provide more information on the views and deliberations which occur inside the Bank. The Bank has already made important progress since the pandemic—such as publishing a summary of Council deliberations (starting in January 2023) and adding press conferences by the Governor and Senior Deputy Governor after each Announcement Date (rather than after every other such date). As they assess the impact of these changes, the Bank may also want to analyze the pros and cons of other options followed by some central banks to further improve transparency and convey the range of views of Council members<sup>14</sup>. These options should be judged in terms of their capacity (or not) to improve the effectiveness of monetary policy actions and the ability of the public and market participants to understand and anticipate the Bank's actions, better preparing them for future policy changes.

Finally, and as recognized in the Review, the Bank should prioritize providing more information on the rationale behind quantitative easing (QE) and other unconventional policy tools. Given the novel use of these tools and important ways in which they differ from standard monetary policy tools, it is even more important to be transparent about the decisions behind the use and construction of these new programs. This should include discussion of the decisions behind the quantification of the size and timing of QE programs, along with detailed explanations for selecting a specific amount of QE to meet specific inflation or growth targets. Such transparency could provide valuable insights into the decision-making process and improve the clarity and effectiveness of the Bank's communication strategy. Clearer communication could help demystify the purpose and effects of these measures, which the general public often poorly understands. The value of clarifying public misconceptions about quantitative easing (QE) is particularly

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<sup>13</sup> See Bernanke (2024), which reviews the forecasting and monetary policy framework for the Bank of England and also suggests the greater use of scenario analysis.

<sup>14</sup> This could include, for example, assessing whether to allow individual votes on key decisions and/or dot plots.

high, given the potential use of these tools in future extraordinary circumstances when there is often little time for new and detailed analysis.

All in all, there are a number of ways by which the Bank could continue to refine and explore accessible methods to communicate its policy decisions. This is particularly important for the new and unconventional tools which were introduced in exceptional circumstances, but which may need to be relied upon again on in the future. Providing more information and more timely information to Canadians should help improve their understanding of and confidence in the measures undertaken. Granted, these communication challenges are shared by many central banks, but the need to improve in these areas has become even more pressing given the expansion of central bank powers in responding to recent crises. As the role of central banks has grown, it is even more important to not only carefully review the decisions taken in the past, but also to continually evaluate how to improve in the future.

**Appendix Table 1**  
**Characteristics of the Post-Pandemic Rate Hiking Cycle in Advanced Economies**

	Aggregate Increase in Rates	Number Rate Hikes	Mean Size of Hikes	Velocity		# hikes ≥		
				6- mont	12- month	50bps	75bps	100bps
Australia	4.25	13	0.33	2.50	3.50	4	0	0
<b>Canada</b>	<b>4.75</b>	<b>10</b>	<b>0.48</b>	<b>2.25</b>	<b>4.25</b>	<b>6</b>	<b>2</b>	<b>1</b>
ECB	4.50	10	0.45	2.50	4.00	6	2	0
New Zealand	5.25	12	0.44	0.75	2.75	8	1	0
Norway	4.50	14	0.32	0.50	1.75	4	0	0
Sweden	4.25	8	0.47	1.75	3.00	5	2	1
Switzerland	2.50	5	0.50	1.25	2.25	4	1	0
United Kingdom	5.15	14	0.37	0.90	2.90	6	1	0
United States	5.25	11	0.48	2.25	4.50	6	4	0
<b>Mean</b>	<b>4.49</b>	<b>11</b>	<b>0.43</b>	<b>1.63</b>	<b>3.21</b>	<b>5</b>	<b>1</b>	<b>0</b>
<b>Median</b>	<b>4.50</b>	<b>11</b>	<b>0.45</b>	<b>1.75</b>	<b>3.00</b>	<b>6</b>	<b>1</b>	<b>0</b>
<b>Maximum</b>	<b>5.25</b>	<b>14</b>	<b>0.50</b>	<b>2.50</b>	<b>4.50</b>	<b>8</b>	<b>4</b>	<b>1</b>

**Notes:** All rates are the policy interest rate. The policy rate for the ECB is the deposit rate and for the United States is the mean of the band. Velocity is the aggregate change in rates over the first 6- or 12-months of the hiking cycle.

**Source:** Calculations based on interest rates data from the BIS

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