

# In retrospect: Monetary Policy in New Zealand 2017-22

## *A Review*

Lawrence L. Schembri<sup>1</sup>

### ***Overall assessment***

This report by Reserve Bank of New Zealand (RBNZ) provides a thorough and thoughtful assessment of the formulation and implementation of monetary policy by the RBNZ and its Monetary Policy Committee (MPC) between 2017 and 2022.<sup>2</sup>

After carefully reviewing this report, my overall assessment is that the formulation and implementation of monetary policy by the RBNZ during this period of extraordinary economic turbulence was largely consistent with achieving both the primary operational objectives, namely maintaining a stable general level of prices and supporting maximum sustainable employment (MSE), as well as the secondary objectives of its Remit under Section 8 of the Reserve Bank of New Zealand Act 2021. Monetary policy was conducted in a nimble and forward-looking manner, and responded well to the heightened uncertainty stemming from the unprecedented effects of COVID-19 pandemic and the unprovoked Russian invasion of Ukraine. Moreover, the monetary policy framework proved to be resilient and credible as medium-term inflation expectations remained relatively well-anchored.

I generally agree with the report's lessons learned and recommendations. They identify the correct priorities to help strengthen the future conduct of monetary policy in New Zealand.

The report is helpfully organized into two main sections. The first section provides a *real time* review of the conduct of monetary policy by carefully describing the economic context, especially the degree of uncertainty, at the time monetary policy decisions were made. This section is divided across three time periods – 2017-2019, 2020, and 2021 to the present – to highlight the dramatic changes in the economic landscape and the challenges confronting the conduct of monetary policy before, during the peak impact of the COVID-19 pandemic, and over its subsequent stage. The second section assesses the conduct of monetary policy in retrospect, focussing on evaluating the effectiveness of the Alternative Monetary Policy (AMP) tools used during the pandemic period and the achievement of the RBNZ's operational objectives.

### ***Overview - Review Period***

The report correctly identifies the key challenge confronting central banks in their conduct of monetary policy going into the pandemic, namely the significant reduction in the neutral policy

---

<sup>1</sup> The author is a former Deputy Governor of the Bank of Canada. The views expressed in this review are his own and should not be attributed to the Bank of Canada.

<sup>2</sup> This report was prepared by the RBNZ in accordance with Section 131 of Reserve Bank of New Zealand Act 2021.

rate, driven by the decline in the global equilibrium real interest rate. While a variety of forces have contributed to this fall in the global real rate, the important implication for monetary policy is that the likelihood of the policy rate being reduced to the effective lower bound (ELB) in the advent of an adverse shock had materially increased. Such an occurrence could necessitate the use of AMP tools, whose impacts and effectiveness are not well known.

Over 2017-19, CPI inflation in New Zealand was somewhat below the 2 percent midpoint of the 1-3 percent control range, while labour market conditions were generally good. The unemployment rate remained relatively low and the economy operated close to maximum sustainable employment.

Unfortunately, the arrival of COVID-19 virus and the associated measures to suppress its transmission represented an unprecedented adverse shock. The immediate impacts on the New Zealand and global economies were extraordinary, creating immense uncertainty about the evolution of aggregate demand and supply and disrupting global financial markets. Moreover, because New Zealand is highly integrated economically and financially into global markets, the resulting uncertainty surrounding its economic outlook was magnified.

In response, the RBNZ chose a “least regrets” risk management approach to monetary policy to help reduce the related tail risks of an economic depression and deflation. Given the heightened uncertainty and concerns about such severe scenarios, other central banks also implemented similar “low for longer” policies, including reducing the policy rate to the ELB and implementing AMP tools, including large scale asset purchases and forward guidance. The forceful RBNZ policy response complemented the government’s significant fiscal and health measures taken at the start of the pandemic in 2020. Together they supported the economic recovery and helped achieve economic outcomes superior to those of most other advanced economies.

The New Zealand economy recovered faster than expected and moved into excess demand in 2021. Consequently, the risk of an inflation overshoot associated with the “least regrets” approach was realized, despite early action to withdraw monetary stimulus. As in most other advanced economies, this overshoot was amplified by external supply shocks, caused by the pandemic and the Russian invasion of Ukraine, and the consequent sharp price increases for globally traded goods, notably energy and food, as well as other key inputs. As a result, inflation in New Zealand was well above the 2 percent midpoint by the end of the review period.

With the benefit of hindsight, most advanced economy central banks, including the RBNZ, appeared to have been overly concerned with relatively small deviations of inflation below target before the pandemic. This mindset coupled with a set of monitoring and projection tools derived from a period in which aggregate demand shocks dominated and supply shocks were typically temporary and benign, led these central banks to underestimate the combined impact of highly expansionary fiscal and monetary policies and the pronounced and persistent supply disruptions and shortages stemming from the pandemic and Russian invasion.

Drawing from these important lessons, I have several comments and recommendations to enhance the self-assessment report and to improve the RBNZ's conduct of monetary policy.

**1. Recommendation: The report should provide a more coherent and comprehensive explanation of the evolution of inflation. Particular attention should be given to the impact of supply shocks during the pandemic period.**

In its analysis of inflation outcomes over the five-year review period, the report's approach to explain the main determinants of the evolution of inflation could be more comprehensive and consistent. At different points, it refers to a "flat" Phillips Curve<sup>3</sup> in conjunction with an output gap, the contribution of inflation expectations, and the impact of movements in globally traded goods prices (especially for energy and food commodities). Figures 6 and 7 offer a useful decomposition of the forces driving the inflation rates of tradable and nontradable consumption items, but there are large residuals and no explanations for them are offered. A more comprehensive decomposition in real time would have been useful to discern how much inflation was caused by domestic forces (namely, an aggregate demand-supply imbalance), which monetary policy can influence, and how much was caused by exogenous global forces.<sup>4</sup>

In addition, there is an important interaction between these forces and their impact on CPI inflation that deserves closer study. Namely, the pass-through of these global input price increases into final consumption prices was larger and more rapid in jurisdictions such as, for example, the United States, Canada and New Zealand, which moved into excess demand over the course of the pandemic. In these jurisdictions, firms facing unusually strong demand found it easier to pass-through these cost increases into their prices.

Relatedly, the report does not clearly explain how the RBNZ used its various core inflation measures, (for example, those shown in Figure 8) to assess underlying inflationary pressure.<sup>5</sup> In particular, the explanation of the stance of monetary policy pursued during the period 2017-19 focuses almost exclusively on the evolution of CPI inflation, which averaged slightly below 2 percent, but well within the 1 to 3 percent control range. In contrast, the core inflation measures were generally higher and closer to 2 percent, consistent with the tight labour market conditions and the positive output gap over this period. The focus on CPI inflation may have

---

<sup>3</sup> The report argues that the relatively low inflation in New Zealand over the 2010's indicated that the Phillips Curve was relatively flat over the period of the review. The evidence provided is not persuasive. For example, Figure 7 shows that there was excess demand over this period and it contributed positively to inflation. The recent experience of above-target inflation when the NZ economy is in excess demand also seems to contradict this assertion.

<sup>4</sup> The report does not view money supply growth as an important determinant of the evolution of inflation. Although most central banks take a similar position, some observers have pointed to the relatively rapid growth in the money supply over the pandemic period as a potential explanation of the rise in inflation. This increase in the money supply reflects, in part, the effect of increased fiscal transfers to households and firms, leading to a rise in deposits.

<sup>5</sup> Figure 8 provides several measures of core inflation, but with no explanation as to which is the preferred measure.

contributed to the decisions to hold the Official Cash Rate (OCR) consistently below the estimated neutral rate, contributing to the rapid increase in house prices over this period.<sup>6</sup>

**2. Recommendation: The RBNZ should develop an analytical approach to assessing the impact of supply shocks on aggregate supply and inflation**

One of the report's recommendations stresses the need for a deeper understanding of the supply side of the NZ economy and the impact of global supply shocks. This recommendation is entirely appropriate given the magnitude and persistence of the global and domestic supply shocks that occurred during the pandemic. An analytical approach should be developed to estimate the impact of a variety of supply shocks, including those related to climate change, on domestic aggregate supply and input costs, and ultimately on inflation.

While fulfilling this recommendation will take some time, the report could devote more attention to analysing the impacts of the pandemic and Russian invasion on the supply side of the NZ economy. The global lockdowns and other health restrictions caused shifts in demand between services and goods and these helped generate global supply disruptions and large relative price changes in traded goods prices. These outcomes were exacerbated by the Russian invasion and had material impacts on input costs, and on the allocations of labour, investment and other productive resources in New Zealand, thereby reducing aggregate supply and increasing inflationary pressure.

**3. Recommendation: The report should examine labour market conditions in greater depth by consistently applying a broad range of labour market indicators to assess the proximity to maximum sustainable employment, underlying inflationary pressure and the implications for monetary policy.**

As part of its operational objective to support MSE, the MPC is asked to consider a broad range of labour market indicators to evaluate the level of employment relative to the MSE. The report correctly notes that this objective is consistent with its price stability mandate. Labour market conditions have important implications for inflation and the conduct of monetary policy.

However, the set of labour market indicators is only briefly discussed towards the end of the report and illustrated with a single figure (Figure 48). Moreover, the observations in this figure are difficult to reconcile with the subsequent figure (Figure 49), which shows the evolution of the unemployment rate and the NAIRU (Non-accelerating inflation rate of unemployment).<sup>7</sup> In particular, the indicators in Figure 48 suggest that large deviations from MSE occurred often at the same time the unemployment rate was close to the NAIRU.

---

<sup>6</sup> House prices increased by 21 percent over this two-year period, while CPI inflation averaged below 2 percent. It would be useful to explain how much of this increase in house prices was passed through into the cost of housing services and CPI inflation.

<sup>7</sup> The NAIRU is given as a point estimate in the text and associated figures. It would be helpful to provide a statistical measure of the uncertainty around this estimate.

It would be instructive to use these indicators to identify when MSE was obtained before and after the pandemic struck during the review period and explain the implications for monetary policy. For example, it would be helpful to determine when in 2021 the labour market or the economy went into excess demand to better assess how the MPC responded to this information in real time.

The labour market indicators in Figure 48 are compared to post-2000 lower and upper benchmarks because 2000 was a year when MSE is seen to have been attained. This 20-year period of comparison seems too long given that the labour market was greatly affected by the emergence of China and related forces of globalization, the Global Financial Crisis and Great Recession, high migration inflows and the shifts in the nature of employment (e.g., the growing prevalence of temporary and part-time work). Consequently, these benchmarks are too wide and contribute to the large variation in the dots shown in Figure 48 for December 2019 and March 2022, when at both times MSE was seen to have been attained or exceeded.

The report notes that the MSE objective is not well understood by the public. Unlike the inflation objective, the MSE objective cannot be easily quantified. The conflicting indicators noted above may have also contributed to this lack of understanding.

**4. Recommendation: The report should better explain why the Bank's forecast accuracy deteriorated over the pandemic period. Alternative benchmarks should be developed to assess forecast accuracy.**

The report provides a summary assessment of the RBNZ's forecast accuracy over 2002-22, without examining more closely its accuracy during the review period. In particular, it appears from Figures 46, 49 and 50 that forecast accuracy for inflation and unemployment materially worsened over the pandemic period. This deterioration occurred at the same New Zealand authorities did a better job of controlling the virus than in most other advanced economies. This success should have *reduced* the uncertainty about the evolution of the virus in New Zealand (e.g., in Figure 51 economic uncertainty decreases rapidly). It is, therefore, curious that forecast accuracy declined by as much as it did. External shocks, namely, the impact of the pandemic on economic activity in the rest of the world, could have also contributed to these forecast errors, but these and other possible effects need to be identified and analysed to provide a more complete explanation of the deterioration in forecast accuracy.

Obtaining a deeper understanding of these forecast errors is important. Not only did they contribute to monetary policy being unduly accommodative over this period, leading the economy to move into excess demand and inflation rising faster than expected, but could also provide some guidance regarding future improvements to data sources, monitoring tools and projection models.

Lastly, a naïve statistical AR (1) model provides a low-bar benchmark for assessing forecast accuracy. Alternative benchmarks – either market or survey based or derived from more sophisticated statistical models – should also be considered.

**5. Recommendation: The report should provide a more wholistic assessment of the experience with alternative monetary policy tools, primarily with respect to their effectiveness in restoring financial market functioning and providing monetary stimulus.**

With the OCR at the ELB, the RBNZ implemented three AMP tools – large scale asset purchases (LSAPs), forward guidance, and a funding for lending program (FLP) – and seriously considered the adoption of others – notably a negative policy rate and foreign asset purchases. The three AMP tools were adopted in an overlapping sequence to provide additional monetary stimulus consistent with the “least regrets” policy response to the pandemic shock.

In its review of the use of these tools, the overall tone of the report is somewhat sanguine. It emphasises the benefits in terms of lowering the cost of borrowing and stimulating demand. The report downplays the uncertainty about the incremental efficacy of these tools, their lack of flexibility, their complexity – especially for communications and understanding – and their adverse legacy effects and exit challenges, namely an inflated central bank balance sheet, financial market and asset price distortions, and real economy misallocations.<sup>8</sup>

**Regarding LSAPs**, they were used in conjunction with other liquidity facilities, to support financial market functioning as well as provide additional monetary stimulus.<sup>9</sup> It is generally understood that LSAPs are effective in restoring financial market functioning when markets become illiquid, but their effectiveness in providing monetary stimulus is much less clear.<sup>10</sup> The report could make more sharply the useful distinction between the market functioning and monetary stimulus objectives of LSAPs.

The initial \$30 billion limit for the stock of LSAPs set in March 2020 was increased to \$33 billion in April 2020, to \$60 billion in May 2020, after market functioning had improved, and again to \$100 billion in August 2020, when it was largely restored.<sup>11</sup> Other central banks, such as the U.S. Federal Reserve and the Bank of England, reduced the pace of their purchases once market functioning had been restored. The report justifies these LSAP limit increases after normal market functioning had resumed by arguing that it was necessary to maintain the desired

---

<sup>8</sup> Concerns have also been raised that central bank actions to address financial market stress, including via LSAPs, could create moral hazard. Market participants, notably less regulated non-bank financial institutions, may perceive that they can rely on the central bank to address future liquidity shortages and may not take appropriate precautions themselves.

<sup>9</sup> The report does not go into great detail about sources of the market dysfunction at the outset of the pandemic, although it explains that a large portion of New Zealand government debt is held by foreign residents, implying that external financial stress was transmitted to New Zealand as these holdings by foreign residents were sold.

<sup>10</sup> Many of the studies cited in the report about the impact of LSAP programs draw from the experience of central banks in major economies, such as the United States or euro zone, and thus are less relevant for New Zealand. In a recent review of 54 peer-reviewed studies of LSAP effectiveness for the U.S. Federal Reserve, the European Central Bank and the Bank of England, Fabo et al (2021) find mixed evidence of their effectiveness. For smaller economies, the evidence would likely be less compelling. For example, Arora et al. (2021) estimate that the LSAP program of the Bank of Canada lowered the yield curve by 10 basis points. Johnson et al (2020) provide a useful survey of the effectiveness of various AMP tools.

<sup>11</sup> All dollar amounts are expressed in NZ dollars.

monetary stance in the face of increasing government bond issuance. This rationale is reasonable, but does not entirely explain the magnitude of the increases given that global and domestic financial market functioning was much better than in March and that domestic economic activity was much more resilient than anticipated. Indeed, total LSAPs, about \$55 billion, only amounted to about half of the announced \$100 billion limit.

The report claims that the LSAP program contributed most of the 50-100 basis of additional monetary easing provided by AMP tools, but Table 6 shows that most of this impact occurred in March 2020 with the announcement of the LSAP program when financial markets were under great stress. While this policy action was appropriate and it had the desired impact on market liquidity, subsequent announcements had much smaller effects once financial market functioning had improved and limit increases expected by the market could be more easily incorporated into current yields. This evidence suggests that the doubling the stock of LSAPs after June 2020 provided much less monetary stimulus and their net benefit, once all the costs are considered, is much less clear.<sup>12</sup>

When markets are functioning normally, LSAPs should provide stimulus by lowering risk and term premia and by signalling lower future policy rates, thereby boosting asset prices and encouraging portfolio substitution towards riskier assets.<sup>13</sup> However, because New Zealand is a relatively small open economy and well-integrated into global capital markets, these risk and term premia are largely determined by global forces.<sup>14</sup> Hence, the ongoing impact of LSAPs under market functioning is likely less than 50-100 basis points.<sup>15</sup>

The communications of the LSAP program by the MPC and by the staff could have been more definitive and transparent. As noted, the limit on the stock of these purchases was adjusted by the MPC several times as part of setting the appropriate monetary policy stance.<sup>16</sup> However, decisions about the weekly flow of these purchases were delegated to the staff, who communicated them via market announcements. Although this approach gave the staff the

---

<sup>12</sup> In terms of actual purchases, about one third of the LSAP total of \$55 billion was disbursed before the end of the second quarter of 2020, when financial markets had returned to normal functioning (See Figure 34) and two thirds from then till July 2021, when the program ended.

<sup>13</sup> In a small open economy such as New Zealand's, LSAPs would also affect domestic monetary conditions via the exchange rate channel. LSAPs would tend to depreciate the exchange rate, but given that its main trading partners were following similar expansionary policies, the effects of LSAPs and other AMP tools were likely offsetting. Hence, the use of these tools by the RBNZ might have limited the exchange rate appreciation that could have occurred in their absence.

<sup>14</sup> Given the high degree of financial integration of domestic and global capital markets, it is unlikely that RBNZ staff would have been able to achieve easily "a low and flat yield curve" as instructed by the MPC and stated in the report (p. 47).

<sup>15</sup> An important consideration is that other major central banks were conducting LSAPs at the same time as the RBNZ. Therefore, controlling for the impact of these sizeable simultaneous purchases on global risk and term premia is critical for accurately estimating the incremental impact of the LSAPs performed by the RBNZ. An overestimate is likely because controlling for these external effects in estimation is difficult.

<sup>16</sup> A related issue is whether it would have been more effective to set a LSAP *target* rather than an LSAP *limit* to signal more clearly the desired monetary policy stance.

flexibility to adjust purchases to changing market conditions, it created some uncertainty about the size of the program. A notable example is that shortly after the MPC had increased the purchase limit to \$100B in August 2020, the weekly flow of purchases actually began to decline. Consequently, it soon became clear that this new limit would not come close to being binding. Although there is an ongoing debate as to which LSAP effect is more effective – the stock or the flow effect – more clarity and consistency in their communications would have reduced uncertainty among market participants.

The RBNZ demonstrated agility in its conduct of monetary policy by effectively ending the LSAP program in the second quarter of 2021 when the output gap had closed, and then by rapidly reducing their bond holdings in early 2022. Selling longer duration bonds back to New Zealand Debt Management, rather than waiting for them to mature, was appropriate given the improving economic outlook.<sup>17</sup>

The RBNZ also employed **forward guidance** on the policy rate to provide additional monetary stimulus. In March 2020, the MPC committed to holding the OCR at the effective lower bound of 25 basis points for one year, regardless of the evolution of the outlook for the economy and inflation. While time-dependent forward guidance is clear, its effectiveness in providing additional monetary stimulus depends on the extent to which it influences expectations of the path of the policy rate and thus the yield curve. If the policy rate was already expected to remain at the ELB for at least a year, given the weak economic outlook, its impact on the monetary stance would have been minimal.<sup>18</sup>

Time-dependent forward guidance is not as flexible as state-dependent or outcome-based forward guidance. Outcomes-based forward guidance is potentially more effective than time-dependent forward guidance if the commitment to hold the policy rate at the ELB is for longer than what is currently being anticipated given the economic outlook. In other words, such forward guidance will help flatten the yield curve if the central bank credibly commits to deviate from its normal reaction function and provide additional monetary stimulus.

In summary, the report does not explain why time-dependent forward guidance was chosen or why the one-year duration was specified. It also does not assess its effectiveness which was likely undermined by the mixed communication about AMP tools, discussed further below.

The RBNZ implemented a **funding-for-lending program (FLP)** in November 2020 by making available 3-year term financing at the OCR to commercial banks based on the provision of high-quality collateral. The purpose of this collateralized lending program was to offer low-cost term

---

<sup>17</sup> Quantitative tightening has proceeded smoothly in New Zealand, but the reference to the U.S. “taper tantrum” of May 2013 (p. 64), which had a profound global impact, is not relevant for New Zealand and should be omitted from the report. Instead, more consideration should be given to the severe stress event in U.S. money markets in September 2019 as a possible risk scenario.

<sup>18</sup> To assess the impact of the forward guidance, it would be useful to examine what happened to the yield curve when the announcement was made. He (2010), Sutherland (2020) and Bank of Canada (2021) provide useful information on the transmission and effectiveness of forward guidance.

funding to reduce the interest rates charged to firms and households and to mitigate the banks' refinancing risk and help stabilise their financial position. The FLP was designed to provide committed long-term funding, but a maximum amount of \$28 billion was set and banks were subject to a cap of 4 percent of their loans to limit the RBNZ's exposure to the program. The FLP was, however, not sensitive to economic conditions. Initial allocations continued to be made well into 2022 (with the term funding lasting until 2025), even though the NZ economy was already in excess demand in 2021.

The FLP is estimated to have lowered lending rates by a modest 10-20 basis. Its effectiveness in expanding the volume of lending relative to what would have occurred without the program is, however, not evident. Funding-for-lending programs adopted by other central banks typically set conditions for the amount of lending banks were expected to make in return for access to this funding, but this was not the case in New Zealand. While the RBNZ adopted a neutral stance with respect to the lending that occurred under the program, which was appropriate, mortgage lending grew by far the most under the FLP while other forms of lending grew more slowly or declined (Figure 29). Over the period from November 2020 to early 2022, mortgage lending grew by roughly 10 percent on average per annum, contributing to the upward pressure on house prices (Figure 28).

The report explains that FLP program and **negative interest rates** were viewed as a complementary policy package, without providing much information about how this package would be implemented and under what conditions. The serious consideration given to the adoption of a negative OCR by the RBNZ from February 2020 until well into 2021 is difficult to understand, given the resilience of economic activity and concerns expressed in the report and elsewhere about the potential adverse impact of negative interest rates on financial market functioning, the commercial banks' lack of preparation and the likely negative reaction of retail depositors. Moreover, the experience of negative policy rates in other small open economies, such as those in Europe, has received mixed reviews. Their implementation can be complex and not well understood by the public. Moreover, they have been viewed as a defensive measure to limit pressure on exchange rate to appreciate and their effectiveness in raising demand and inflation is not well understood.<sup>19</sup>

In conclusion, the RBNZ considered and implemented a variety of AMP tools.<sup>20</sup> These tools were reasonably well designed, especially given the RBNZ's lack of experience with their use.

---

<sup>19</sup> See, for example, Andersen and Jonung (2020) for a review of the Swedish experience. Brunnermeier and Koby (2018) have argued that there may be a "reversal rate" where a movement into negative interest rates may actually be contractionary. Lending by banks could decline when their margins between lending and deposit/funding rates become too small, given the risk. The report also makes no mention of the "switch-to-cash" rate which places a lower bound on a negative OCR.

<sup>20</sup>The report indicates that foreign asset purchases were also considered, though not implemented. Given New Zealand's long-standing commitment to a market-based flexible exchange rate, such a measure seemed to be a last resort. Interest rate swaps were also in the tool kit, but were not used. The details about their possible implementation are not discussed in the report.

They were, however, somewhat inflexible and not entirely coherent. In theory, the use of these tools to provide additional monetary stimulus entails a trade-off between their flexibility and their effectiveness. AMP tools that are implemented in a more flexible conditional manner, such as LSAP limits, as opposed to targets, tend to be less effective because they represent less of a commitment on the part of the central bank. However, flexible tools, which can be more easily adjusted as the economic outlook changes, have the benefit that the risks around their use and their potential legacy effects or exit costs, such as an inflated balance sheet or a larger-than-desired inflation overshoot, are less. The report could better address these trade-offs in explaining the RBNZ's use of these tools, including their design and calibration.

The report could also go further in examining the complementary nature of these tools and potential synergistic effects if they are used in tandem. An important example is the report's finding that the OCR is the most effective monetary policy instrument, implying that AMP tools are imperfect substitutes, yet it does not give any consideration to a "low for longer" policy with the OCR at the ELB for an extended period. Such a policy could be implemented with state-dependent forward guidance and possibly supported by collateralized term lending or an LSAP program.

**6. Recommendation: Improve the communications of the stance of monetary policy when alternative monetary policy tools are being used.**

The RBNZ is widely recognized as a leader in central bank transparency and communications. Its monetary policy statement is best in class; it encompasses the policy decision, a summary of the MPC's deliberations, and economic projections of the paths of key variables including the policy interest rate, under different scenarios.

The communications around the use of AMP tools, however, was not clear as it could have been, as a deliberate plan for their implementation was not laid out, until after the global pandemic was declared.<sup>21</sup> Moreover, in his March 2020 speech Governor Orr specified a plan for the use of these tools, notably their sequence, that created certain expectations, but this plan was not actually followed by the RBNZ.<sup>22</sup> The report should better explain the rationale for the deviations.

In addition, the RBNZ's use of an unconstrained OCR from May 2020 to February 2021 to indicate the overall stance of monetary policy by incorporating the impact of AMP tools was innovative, but proved to be difficult to explain and understand. Consequently, the use of unconstrained OCR further complicated the communications around the implementation of AMP tools, likely rendering them less effective. As noted earlier, the RBNZ's position on negative policy rates was not perfectly clear, as differing views had been expressed about their use in New Zealand and elsewhere. However, an unconstrained OCR, estimated to be about 50-

---

<sup>21</sup> This lack of advance preparation reflects, in part, the unfortunate decision made in 2017 by the RBNZ to stop work on AMP tools.

<sup>22</sup> Orr (2020).

100 basis below the actual OCR over the last three quarters of 2020, may have been interpreted as signalling their eventual use.<sup>23</sup> Such a misperception may have undermined the effectiveness of forward guidance or LSAPs, signalling that they were insufficient to obtain the desired extent of monetary stimulus.

In addition, the communications around the unconstrained OCR was likely clouded by not clearly explaining the distinction between the *actual* unconstrained OCR, based on the *existing* AMP tools in place, and the *projected* unconstrained OCR based on the *desired* AMP tools to achieve the RBNZ's operational objectives.

The development of a deliberate plan for the future use of AMP tools should include a communications strategy as a key component.

**7. Recommendation: Be more transparent on the impact of alternative monetary policies on the RBNZ's and the government's balance sheets and income statements**

The RBNZ recognized that the LSAP program posed important financial risks for its own and the consolidated public balance sheets and income statements by significantly shortening the duration of the outstanding stock of government bonds. In view of these looming financial risks, the RBNZ negotiated an indemnity for the LSAP program with the government before the program began. Because global and New Zealand interest rates would eventually rise from ELB levels, as economies recovered from the pandemic fallout, the RBNZ would likely incur mark-to-market losses on its portfolio of government bonds. Its interest income would likely turn negative as the interest paid on settlement balances would exceed the interest income from these holdings. Given the large size of the LSAP program, roughly 15 percent of GDP, these losses posed a significant risk to the consolidated public balance sheet. While the report estimates that these losses were reduced by half by the expansionary impact of the LSAP program (and the FLP) on government's budget position, this estimated impact seems to be an upper bound, given the uncertain impact of these programs on medium to longer term borrowing rates, as discussed earlier. Finally, it is not clear how well these financial risks were communicated to and understood by the public.

The report clearly explains the shift to the floor system for implementing monetary policy in the context of high settlement balances. However, less information is given about the likely evolution of these balances and their end state. Such information would be helpful for assessing the evolution of the RBNZ's balance sheet and its state of readiness to respond to future financial market liquidity shortages and dysfunction.

The LSAP program entailed other non-financial risks, including risks to the operational independence of the RBNZ. In particular, the public may have incorrectly perceived that the RBNZ was financing government borrowing. Also, this risk could arise, if the RBNZ were to become dependent on the government to cover its operating expenses or to operate with

---

<sup>23</sup> Figure 39 is complicated and deserves a clearer, more complete explanation in the text.

negative equity. Lastly, there are reputational risks associated with making large interest payments on settlement balances to commercial banks and inflating house and other asset prices. These risks are not directly addressed in the report.

The adoption of a negative OCR would have also carried operational and reputational risks, especially for the RBNZ and for commercial banks and their depositors. Again, it is not clear how well these risks were understood by the MPC, the government and the general public when a negative OCR was being considered.

***8. Recommendation: Information sharing between the RBNZ and the New Zealand Treasury should be improved.***

The report correctly recommends that the RBNZ should obtain a better understanding of the future role of fiscal policy. The experience of the pandemic has demonstrated that fiscal and monetary policy when working in tandem can complement each other and effectively boost aggregate demand and raise inflation. The evidence also indicates that expansionary fiscal policy is a powerful tool when a severe adverse shock occurs and the policy rate is at the ELB.

To achieve this better understanding of the future role of fiscal policy there should be improved information sharing between the RBNZ and the Treasury. On two occasions during the pandemic, monetary policies were announced without advance warning of the adoption of important fiscal or health measures shortly thereafter. Such information sharing would not only include various policy measures under consideration, but an understanding of their transmission, and estimates of multipliers and overall impacts. In particular, collaborative relationships between the RBNZ and the NZ Treasury at the working and senior levels should be encouraged. They would help build trust, enhance information sharing, and thereby lead to better policy outcomes.

The normal convention for central bank economic projections is to incorporate only announced fiscal policies, but more information sharing would facilitate the development of alternative scenarios for fiscal policy. Such scenarios should be performed to better inform and prepare the conduct of monetary policy. Monetary policy is generally more nimble than fiscal policy; it can be adjusted more easily to accommodate the projected impact of new fiscal measures.

A final point worth noting is that calls by some observers for improved coordination of the monetary and fiscal policies go beyond the basic need for better information sharing, and may be a step too far, potentially compromising the operational independence of the central bank and treasury. Nonetheless, a good case can be made for the government putting in place more effective automatic fiscal stabilisers to help support demand when the policy rate is at the ELB, as this would lessen the need for AMP tools whose effects, both positive and negative, are not well known.

**9. Recommendation: The RBNZ's mandate to promote sustainable house prices should be shifted from the remit of monetary policy to that of prudential policy.**

The report contains many references to house prices and to house price growth forecasts. They are not particularly helpful for understanding the broader economic outlook or the formulation of monetary policy. In addition, the house price growth forecasts are neither well explained, nor is much effort made to analyse their accuracy. House prices, like most asset prices, are very difficult to forecast accurately and most central banks avoid doing it.

The report rightly points out that prudential policies are more effective, than monetary policy, in promoting sustainable house prices. Such an approach has been adopted by financial prudential authorities and central banks in other jurisdictions.

While central banks should be mindful of the impact of monetary policy on financial vulnerabilities in the housing sector, being assigned a specific mandate for the sustainability of house prices is an unhelpful distraction and should be reconsidered.

**10. Recommendation: The report should provide more in-depth analysis of the global demand for New Zealand exports, global commodity price movements and the implications for the exchange rate. The RBNZ should construct a NZ-based commodity price index to help explain exchange rate movements.**

Employment, output, and income growth in New Zealand are greatly influenced by foreign demand for its exports, global commodity prices, the terms of trade, and the exchange rate. Exports and imports normally represent approximately 30 percent of New Zealand's GDP and exports primarily consist of agricultural commodities.

Given the importance of these external factors, the report should provide a more in-depth analysis of them in its review of the evolution of the New Zealand economy and inflation over this period, especially during the global pandemic. In particular, the significant effect of increases in the prices of globally traded goods on domestic inflation deserves more attention, as mentioned earlier, as does the impact on tourism and other exports of closing the borders to limit the spread of COVID-19 virus.

In addition, the adoption of the convention of a flat exchange rate profile in its economic projection should not lead to less analysis of exchange rate movements. The exchange rate is the most important relative price in an open economy such as New Zealand's, and its movements directly affect inflation via import prices.

To better explain exchange rate movements, given that such a large proportion of its exports are commodity based, the RBNZ should consider constructing its own commodity price index

using domestic production weights. It would likely have more explanatory power than the terms of trade, which is difficult to measure accurately.<sup>24</sup>

***11. Recommendation: The RBNZ should be clear as to what further analysis of the neutral policy interest rate is expected to achieve.***

The report analyses the behaviour of the neutral policy rate in some depth and contains a recommendation that more work should be done to understand better its evolution going forward. The report notes that the RBNZ's estimate of the neutral policy rate has drifted downward over time reflecting the impact of global forces, namely population aging, increasing longevity and slower productivity growth on the global equilibrium real interest rate.

The RBNZ's estimate of the neutral policy rate was 2 percent in early 2020. This seems too low because it implies a neutral real policy rate of zero in steady state with 2 percent inflation. It is also lower than estimates for other jurisdictions at the same time. For example, in the United States and Canada, the estimates were roughly 2.5 percent. Given the high degree of global integration of New Zealand's financial markets, it is not clear why its neutral rate would be materially lower than the U.S. estimate. The report should explain this deviation because it points to the declining neutral policy rate to argue that monetary policy may have been too tight during the 2017-19 period.

Analysis of the neutral policy rate could begin with an estimate of the global or US equilibrium real interest rate (and much analysis of this issue already exists), augmented by the target inflation rate of 2 percent plus a NZ-specific country risk premium. In general, while this risk premium could vary over time, one would expect that on average it should be relatively small because NZ assets carry relatively low risk. For example, NZ government debt is highly rated by credit rating agencies.

***Concluding remarks***

The RBNZ's self-assessment report provides a thorough and deliberate review of the formulation and implementation of monetary policy by the RBNZ and its MPC over the period, 2017-2022. The report explains well the challenges the RBNZ faced during this period of unprecedented economic turbulence and uncertainty and the rationale for the actions taken to achieve its operational objectives.

On the whole, the RBNZ's conduct of monetary policy was nimble and forward-looking and largely consistent with achieving these objectives. Its monetary policy framework was resilient and remained credible in the face of unprecedented global shocks stemming from the COVID-19 pandemic and Russian invasion of Ukraine.

---

<sup>24</sup> Although some correlation between the terms of trade and the exchange rate is visible in Figures 10 and 11, it does not appear to be very strong.

The RBNZ's "least regrets" monetary policy response to the COVID-19 pandemic helped restore financial market functioning, support the recovery and prevent a more severe outcome. The extraordinary nature of the economic shock caused by the pandemic and related health measures, both in terms of size and pervasive impacts on aggregate supply as well as demand, led to exceptional uncertainty around the economic outlook. Therefore, erring on the side of providing too much stimulus was appropriate in the early stages of the pandemic.

The NZ government's health and fiscal measures as well as the RBNZ's actions lead to a strong recovery of NZ economy from the immediate fallout from the pandemic and related health restrictions. However, the RBNZ, like other central banks, underestimated the resilience of economic activity to the health measures, the arrival of effective vaccines, the impacts of the fiscal measures adopted, and thus, the overall pace and strength of the recovery. Although it was one of the first central banks to begin tightening its monetary policy stance by winding down the stimulus provided by AMP tools and raising the policy rate, it contributed to the elevated inflationary pressure experienced at the end of the review period by not acting even sooner. Although much of the increase in inflation over the latter part of the review period reflected the pronounced and persistent impacts of the pandemic and the Russian invasion on supply disruptions and traded goods prices, the upside risk to inflation embedded in the "least regrets" approach was realized.

The unusual combination of external supply-related price shocks and excess domestic demand poses a significant challenge for the RBNZ and other central banks going forward. A balance must be struck in the conduct of monetary policy between preventing current high inflation from becoming embedded in expectations and in future price and wage setting, and causing a significant decline in economic activity and employment.

In addition, although the AMP tools implemented by the RBNZ were reasonably well designed and calibrated, they were somewhat inflexible to economic conditions and their implementation, including related communications, could have been better planned and executed. To date, the wind-down of these tools has been deliberate and has proceeded smoothly. The possible legacy effects from the adoption of these tools need to be monitored and analysed, and lessons drawn for the future use of these tools.

The report, to its credit, owns up to these shortcomings. It offers a set of useful lessons learned and constructive recommendations that will help strengthen the future conduct of monetary policy in New Zealand.

### ***References***

- Andersson, F.N.G. and L. Jonung. 2020. Don't do it again! The Swedish experience with negative central bank rates in 2015-19. Voxeu.org. 8 May.
- Arora, R., S. Gungor, J. Nesrallah, G. Ouellet Leblanc and J. Witmer. 2021. The impact of the Bank of Canada's Bond Purchase Program. *Bank of Canada Staff Analytical Note 2021-23*.
- Bank of Canada. 2021. *Monetary Policy Framework Renewal*. Chapter 5.
- Brunnermeier, M. and Y. Koby. 2018. The reversal interest rate. *National Bureau of Economic Research Working Paper 25406*.
- Fabo, B., M. Jancova, E. Kempf and L. Pastor. 2021. Fifty shades of QE: Comparing the findings of central bankers and academics. *Journal of Monetary Economics* 120: 1-20.
- He, Z. 2010. Evaluating the impact of the Bank of Canada's conditional commitment policy. *Bank of Canada Staff Discussion Paper 2010-11*.
- Johnson, G., S. Kozicki, R. Priftis, L. Suchanek, J. Witmer and J. Yang. 2020. Implementation and effectiveness of extended monetary tools: Lessons from the literature. *Bank of Canada Staff Discussion Paper 2020-16*.
- Orr, A. 2020. Navigating at low altitude: Monetary policy with very low interest rates. Speech delivered at the Reserve Bank of New Zealand Museum and Education Centre. 10 March.
- Sutherland, C. 2020. Forward guidance and expectations formation: A narrative. *Bank of Canada Staff Working Paper 2020-40*.