RESERVE BANK
OF NEW ZEALAND
TE PŪTEA MATUA

COVID-19 and the Reserve Bank's Balance Sheet

A speech delivered to 2020 KangaNews New Zealand Capital Markets Forum in Wellington

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Introduction

E nga mana, e nga reo. E nga karanga maha o te wa.

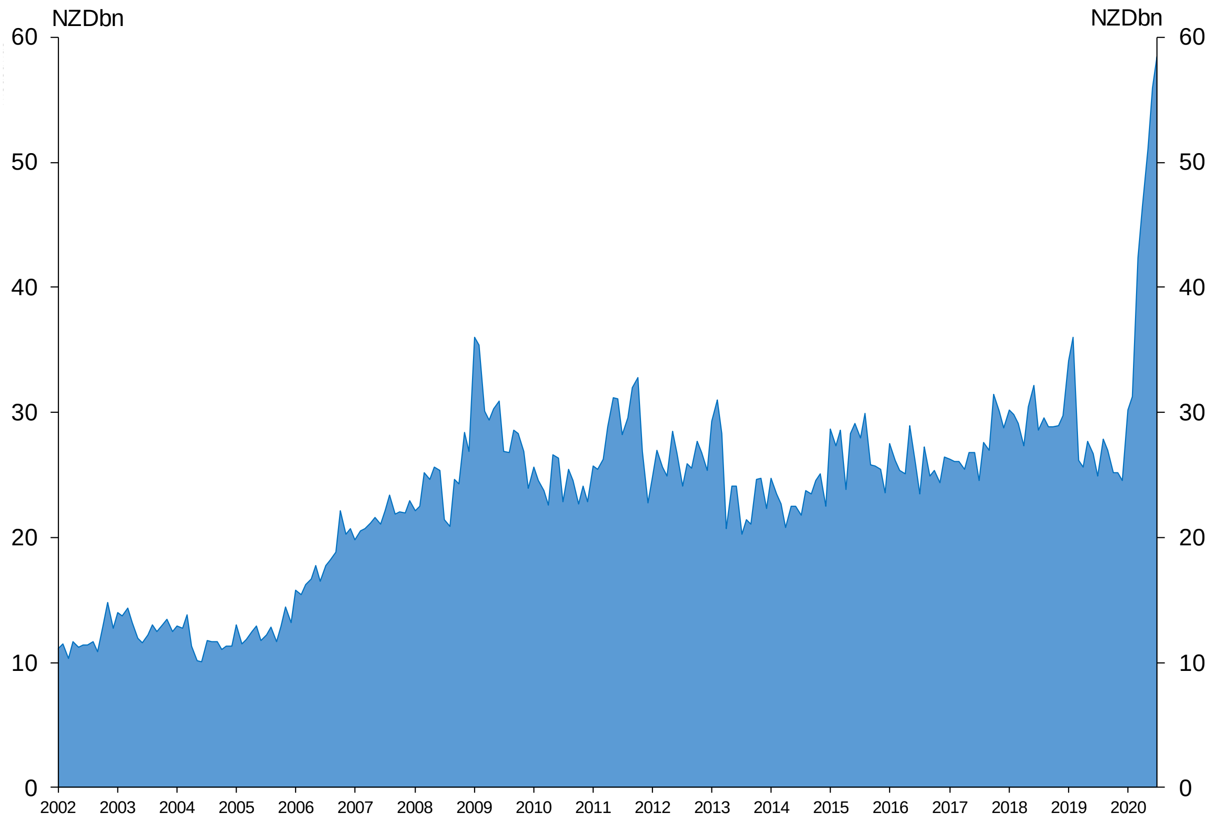
Tēnā koutou katoa.

It is great to be able to participate in this conference that was originally scheduled for late February, albeit still remotely due to COVID-19 restrictions.

The last time I spoke to a financial markets audience in person was in late-January at a conference in Sydney. I recall being struck at the time that I had never seen a conference organiser so happy to see me arrive at a venue. Turns out it was nothing personal. All the rest of the keynote speakers were part of a world tour and had got stuck in Hong Kong in self-isolation. Travelling from Wellington, I was the only one that had made it in person.

In my mind, that was a moment when COVID-19 became something very real and tangible, spreading to our part of the globe. Of course, the world has changed remarkably since late January in response to this global health crisis. One of those ways is that the Reserve Bank's balance sheet has increased from around $25 billion to $60 billion (Figure 1), and growing.

Figure 1: Size of the RBNZ Balance Sheet



Source: Reserve Bank of New Zealand.

For a long time, the Reserve Bank has been seen primarily as an institution that makes announcements on interest rates every six weeks.

However, periods like the Global Financial Crisis (GFC) and COVID-19 serve as stark reminders that we are ultimately a bank – the bank to the banking system and the bank to the Crown (the New Zealand Government).

In recent years, we have used the story of Tāne Mahuta to illustrate to the general public this broader perspective of the role of the Reserve Bank of New Zealand – Te Pūtea Matua –in the financial system.[2] Just as Tāne Mahuta is part of the forest and the guardian – kaitiaki – of that forest, the Reserve Bank is both a part of the financial ecosystem and kaitiaki.

Figure 2: Tāne Mahuta

Last month, my colleague, Geoff Bascand, spoke about the Reserve Bank's role as the regulator and supervisor of the financial system, the actions taken during COVID-19, and the agenda ahead.[3] The branches and leaves and roots of Tāne Mahuta.

Today, I would like to focus on how we have utilised our balance sheet flexibility to support the economy and financial system throughout COVID-19. That is, the roots, sap and vascular system of Tāne Mahuta. Specifically, I will:

- describe what the Reserve Bank's balance sheet looks like;
- outline our approach to managing it before COVID-19;
- explain our actions taken through the crisis; and
- share some reflections on that experience and the way ahead.

While I am also a member of our Monetary Policy Committee (MPC), I am speaking mostly as the chair of our Assets and Liabilities Committee (ALCO), responsible for the internal governance of our balance sheet. While the MPC sets monetary policy, our ALCO oversees its implementation and our activities in financial markets.

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[2] Reserve Bank of New Zealand (2018): The Journey of Te Pūtea Matua: Our Tāne Mahuta. Northern hapu Te Roroa is the kaitiaki to Tāne Mahuta, the kauri tree in Waipoua Forest.

[3] Bascand (2020): Banking the economy in post-COVID Aotearoa.

There are two key messages that I want to leave you with today about our role as a central bank.

- First, our goal is not to maximise our profits or dividend from the activities on our balance sheet. We use our balance sheet to achieve our ultimate policy objectives of monetary and financial stability. In an environment where the Official Cash Rate (OCR) is nearing its lower bound, the size and composition of our balance sheet will inevitably become a more active tool, particularly for our monetary policy decisions.

- Equally, it is not our goal to minimise financial risk on our balance sheet. Rather, our approach is to manage risk within a clear risk appetite framework, across the dimensions of operational, legal, financial, and reputational risk. In environments like the GFC or COVID-19, central banks need to take financial risks to succeed in achieving their objectives for monetary and financial stability. But these risks need to be very well-understood, well-explained, and managed on a no surprises basis.

Balance Sheet Pre-COVID-19

To appreciate the fundamental changes that happened to our balance sheet during COVID-19, it is useful to first touch on what it looked like before the crisis.

Like any bank, our liabilities include deposits and our assets are a combination of loans, bonds and other assets.

Liabilities

The Reserve Bank's liabilities predominantly consist of three core parts, which line up with three key roles that the Reserve Bank plays in the financial system: the sole issuer of currency, the bank for the banking system, and banker to the Crown.

i) Currency in circulation

The Reserve Bank has the trusted position of being the sole supplier of legal tender New Zealand dollar banknotes and coins. Currency is a liability on our balance sheet because it acts as an IOU from the Reserve Bank to the holder. Banks that hold physical currency can return it in exchange for a deposit in their account at the Reserve Bank. This liability is the sum of the 'physical cash' on issue. Before COVID-19, currency in circulation was around $7 billion.

ii) Settlement accounts

As the bank to the banking system, we hold deposits from settlement banks. Settlement balances in these accounts are a liability as banks can draw on this cash to make inter-bank payments to each other through a trusted intermediary – the Reserve Bank. There are currently 13 settlement banks in New Zealand out of the 27 banks registered here.[4] These deposits with us can be thought of as 'electronic money' rather than physical currency. These settlement accounts cannot be overdrawn. Before COVID-19, there was typically $7 billion-$8 billion in aggregate across these settlement accounts, to facilitate the smooth functioning of the money market and interbank payments.

[4] A list of registered banks can be found here: https://www.rbnz.govt.nz/regulation-and-supervision/banks/register

iii) Crown settlement account

Lastly, we act as the banker for the New Zealand Government. Like a normal bank, the Government can deposit surplus funds in their bank account with us, their Crown Settlement Account (CSA). It creates a liability on our balance sheet as it is money the Government can draw on. When the Government receives taxes, or sells a bond or bill, it produces an inflow into its bank account. Conversely, payments of welfare benefits, interest on Government bonds or repaying the principal of a bond as it matures, produces outflows from the CSA. Before COVID-19, the CSA typically had a positive balance up to $6 billion to manage the Crown's cash flows.There was an overdraft facility available up to $5 billion, which has primarily been used by the Crown under normal circumstances to help manage very short-term mismatches created by large Crown cash flows, such as around a bond maturity.

Liquidity management and other assets

Before COVID-19, the asset side of our balance sheet consisted of two main categories to achieve our policy objectives.

i) *Liquidity management and monetary policy implementation*

The first was liquidity management, where we were a net lender to actively influence conditions in money markets, to ensure that overnight interest rates in the market traded near the OCR set by the MPC. [5] In short, from 1999 the Reserve Bank operated a type of "corridor system" to implement monetary policy.[6]

Banks received the OCR on their settlement balances with us, up to a certain amount. If they held balances above this level, they received OCR less a penalty rate. Similarly, if banks found themselves with insufficient balances at the end of the day, they could borrow from us but at OCR plus a penalty rate. By ensuring it was costly for a bank to have insufficient cash and also offering a poor return if settlement balances were too high, it incentivised banks to manage their balances carefully. It also encouraged borrowing or lending in the inter-bank market.

The main role for the Reserve Bank in this framework was to be a net lender into short-term money markets to ensure there was enough settlement balances in aggregate in the system so that banks could collectively operate within this corridor, where there wasn't too little or too much liquidity.

An important feature of the amount of aggregate settlement balances – electronic central bank money – is that, alongside physical currency, it is a closed system. That is, one bank can reduce its settlement balance by paying another bank, but this only shifts the balance within the system, it doesn't reduce the amount of settlement balances in total. The only way that the amount of aggregate settlement balances can change is through payments to or from the Crown or the Reserve Bank, who are outside the system.

Therefore, the main role of our domestic market operations team before COVID-19 was to forecast the Government's cash flows in and out of the CSA and look to offset the impact of those flows with our Open Market Operations (OMOs) in money markets, injecting or withdrawing liquidity.

The tools we used to inject liquidity were reverse repurchase agreements (reverse repos) and foreign exchange swaps (FX swaps). These feature as assets on our balance sheet. The tools we used

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[5] For a detailed description of our approach, I would recommend Parekh (2016).

[6] Technically, the Reserve Bank moved from a "corridor" system to a "tiered remuneration" system between 2007-2020, which was a hybrid between a "corridor" and a "floor" system.

to withdraw liquidity were repurchase agreements (repos) and issuing Reserve Bank Bills. These feature as liabilities on our balance sheet.

Before COVID-19, lending via FX swaps was the largest asset held by the Reserve Bank for liquidity management purposes, with around $7 billion outstanding.

We also typically held around $3 billion of NZ Government Bonds on our balance sheet before COVID-19. These assets gave us the capability to withdraw liquidity via our repos. They were also available to lend to banks, thereby helping to avoid settlement failures if a bond became scarce in the secondary market. In addition, when a specific NZ Government Bond was within a year of maturity, we would typically start a repurchase programme to increase our holdings of that issue to help smooth out the impact of a large maturity on settlement balances.

ii) Foreign reserve management

Finally, we hold foreign currency assets, made up largely of liquid US, European and Japanese government bonds. Around 70 percent of these foreign assets are hedged against foreign exchange risk. These provide the capability to intervene in the foreign exchange market in response to disorderly conditions. Varying the size of our foreign exchange position also provide a tool to manage the level of the NZ dollar exchange rate if it was deemed exceptionally high or low, unjustified, consistent with MPC's Remit and the timing was opportune.[7]

Before COVID-19, we typically held around $12 billion in foreign currency reserves.

In summary, Figure 3 brings together how the Reserve Bank's balance sheet was structured at the end of 2019 – back in the days where the OCR was our primary monetary policy tool and the balance sheet was smaller and less dynamic.

Figure 3: Balance Sheet Pre-COVID-19

Assets (NZ$ million)	Dec-19	Liabilities (NZ$ million)	Dec-19
NZ Government Bonds	3,760	Notes and coins in circulation	7,557
Foreign Reserve Management assets	12,383	Crown settlement account	3,048
Foreign Investment Assets using FX Swaps proceeds	7,302	Bank settlement accounts	7,493
Reverse repurchases	600	Reserve Bank bills	1,225
Other assets	554	Repurchase agreements	-
		Other liabilities	2,524
		Equity	2,752
Total	**24,599**	**Total**	**24,599**

Source: Reserve Bank of New Zealand

[7] For a detailed explanation, see Eckhold and Hunt (2005).

Balance Sheet with COVID-19

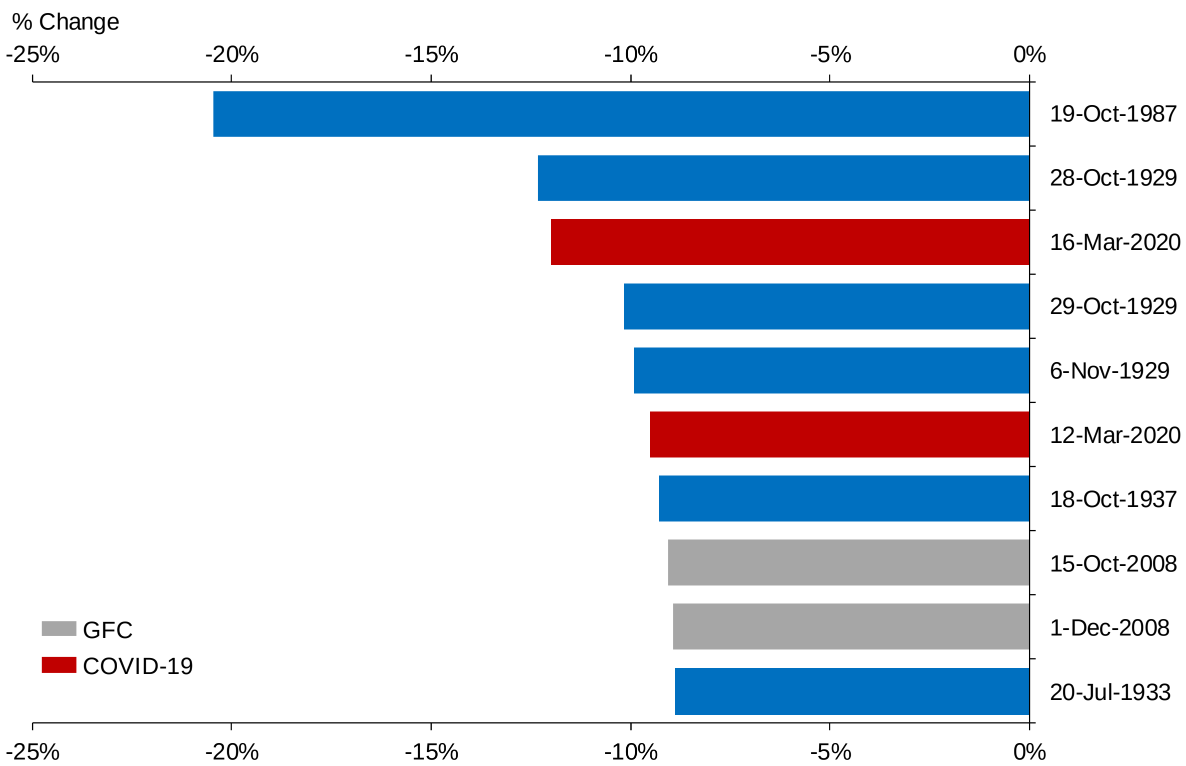
Conditions in global economies and financial markets deteriorated dramatically through February and early March.

On 16 March, after an extraordinary meeting the MPC decided to provide further monetary stimulus and cut the OCR by 75 basis points to 0.25 percent, and indicated that a Large Scale Asset Purchase (LSAP) programme of NZ Government Bonds would be the next tool deployed if required.[8]

It is hard to overstate the strain on global markets through this period.

Unlike many past crises caused by a vulnerability within the financial system, this was foremost a health crisis. This made it particularly hard for financial markets to judge how quickly or how widely COVID-19 would spread, the policy response, and the combined impact on economies. Equity markets experienced some of the largest daily falls of all-time (Figure 4a). Credit spreads widened sharply and government bond yields were also extremely volatile (Figure 4b). In response, liquidity in many secondary markets dried up as intermediaries withdrew to limit their risk. Internationally, financial markets were becoming dysfunctional.

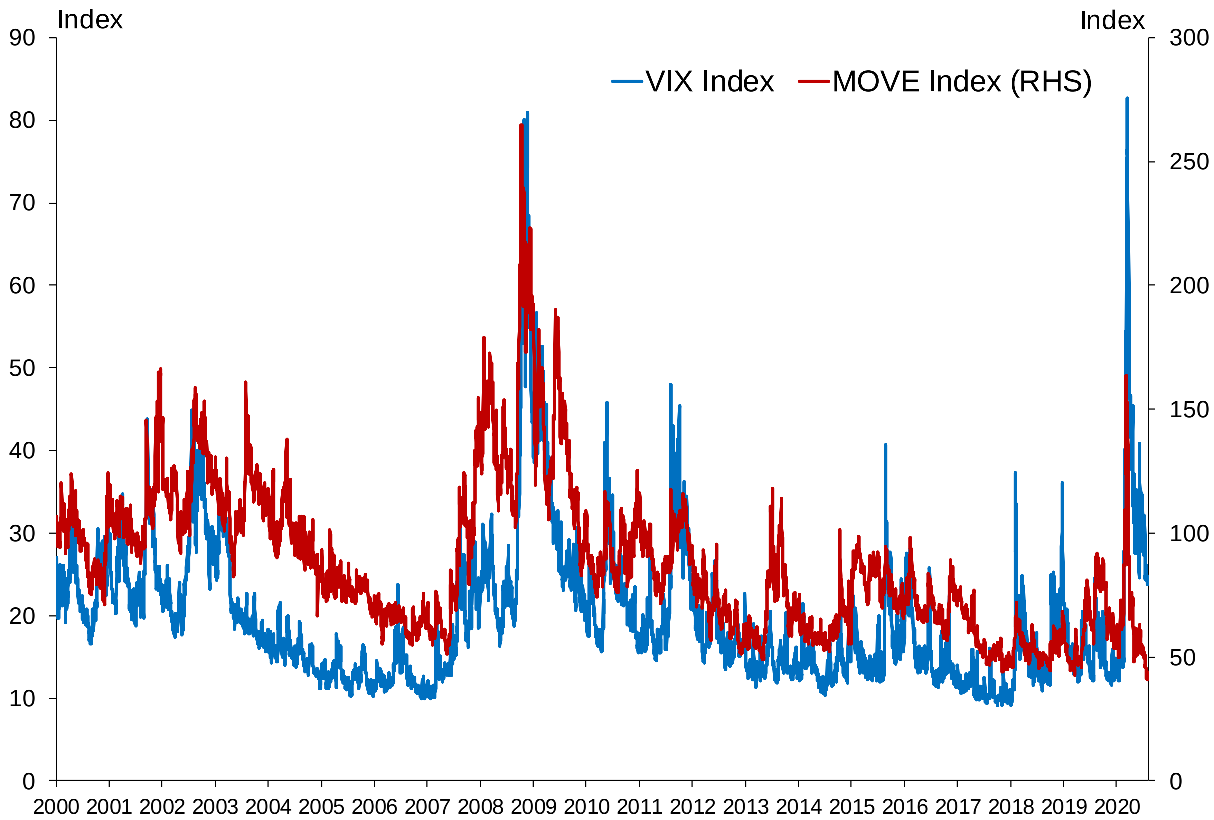
Figure 4a: Largest daily falls of the S&P500



Source: Bloomberg and Reserve Bank of New Zealand

[8] Reserve Bank of New Zealand (2020e): OCR reduced to 0.25 percent for next 12 months.

Figure 4b: Equity and Bond Market Implied Volatility



Source: Bloomberg and Reserve Bank of New Zealand

Note: The VIX Index measures the expected volatility of the S&P 500. The MOVE Index measures the volatility of interest rates on US Treasury bonds.

Asset side of our balance sheet

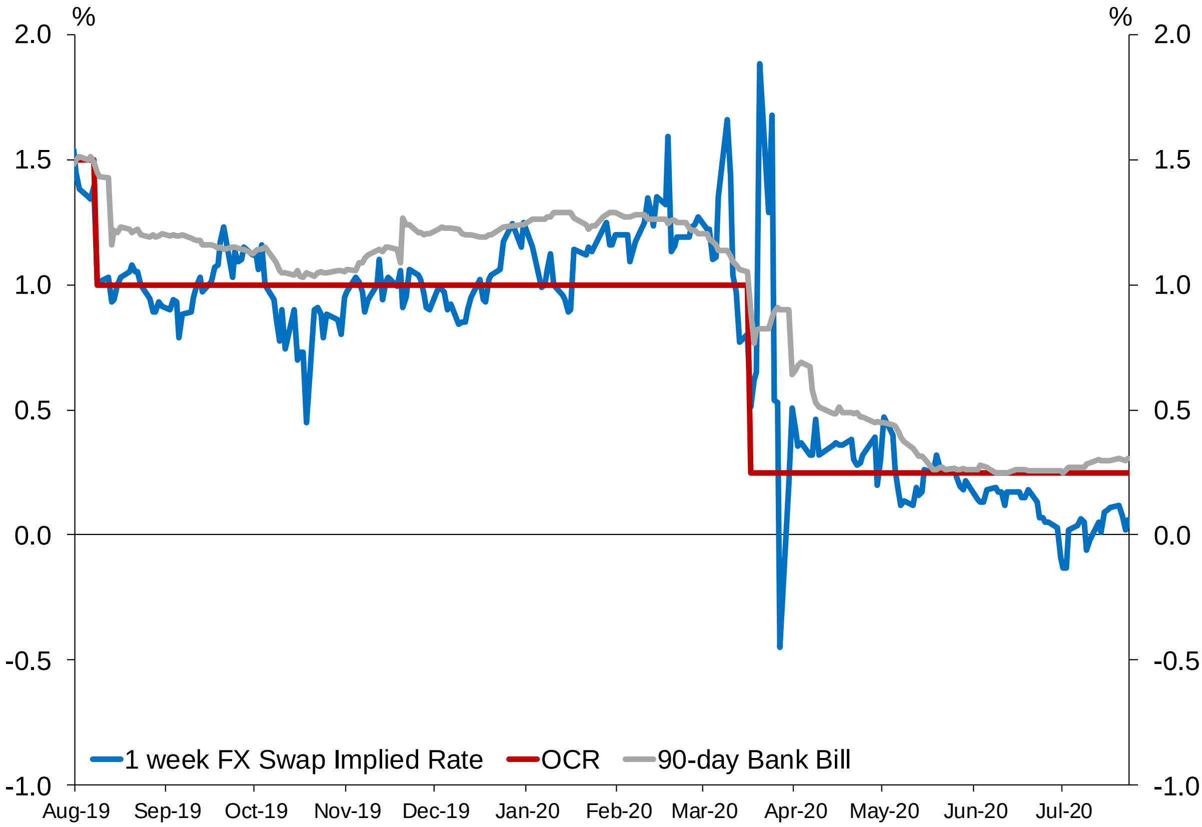
To continue to achieve our policy objectives, these conditions led us to take a number of actions across New Zealand's money markets, term lending market, government bond market, and corporate bond market that fundamentally transformed our balance sheet.

NZ dollar money markets

Our initial and primary concerns were around New Zealand's money markets.

The FX swap market had become extremely stressed. The global dash for US dollar liquidity had influenced our local money markets through its impact on the FX swap market. Pressure had begun to build in February, and by March the implied interest rates to borrow NZ dollars in the FX swap market were rising rapidly (Figure 5). Despite cutting the OCR to 0.25 percent, the implied NZ dollar interest rates had risen to nearly 2 percent to borrow for one week and had spiked to around 20 percent to borrow overnight. This was spilling over into the bank bill market and other indicators of short-term wholesale funding costs in New Zealand money markets.

Figure 5: New Zealand Money Market Rates



Source: Bloomberg and Reserve Bank of New Zealand.

Given the crucial role that the FX swaps market played as our primary tool for managing NZ dollar liquidity, we started lending in scale into this market in an attempt to lower these implied borrowing rates, and then drained excess liquidity using other tools to offset the impact on settlement balances. However, this was only having a marginal effect in stabilising interest rates.

As a result, on 20 March, we announced a decision to lend at a much larger scale and not drain the impact on settlement cash.[9]

This was a fundamental decision in our crisis response. It marked the end of a target for settlement balances and discarded the 'corridor system'. The penalty rate on excess deposits in settlement accounts was removed, moving us to a so-called 'floor system'. All settlement balances would be remunerated at the OCR. This gave us a much better chance to anchor short-term money market rates near the OCR.

This decision resulted in a dramatic expansion of our balance sheet. Within a week, our lending in the FX swaps market in maturities from overnight to six months rose to $20 billion, contributing to the amount of settlement cash in the system quickly rising from $8 billion to over $30 billion.

New Zealand dollar bank term funding

Longer-term funding for banks remained a key consideration through this period.

While we had confidence that the New Zealand banking system was well-funded for many months ahead, globally the primary issuance market had ground to a halt, creating uncertainty about when

[9] Reserve Bank of New Zealand (2020i): Reserve Bank announces new facility and removal of credit tiers.

this channel of funding would reopen. As a result, we launched a number of facilities to ensure that banks were confident they could access term funding to continuing supporting their retail, corporate, and business customers.

- On 20 March, we announced the Term Auction Facility (TAF), offering regular access to collateralised loans for 3, 6, and 12 month terms.[10]

- On 30 March, we launched the Corporate Open Market Operation (COMO), designed to support the functioning of the corporate paper market. [11]

- On 2 April, we introduced the Term Lending Facility (TLF), to provide banks funding for up to three years based on lending to businesses under the Government's Business Finance Guarantee Scheme (BFGS). The BFGS offered a partial Government guarantee on loans banks made to eligible small and medium-sized businesses. [12]

While none of these facilities have been drawn on in significant size to date, they are an important part of stabilising market conditions by providing an assurance that we were willing to provide term funding options for the banking system to access.

New Zealand Government Bonds

Through this period, government bond markets were also becoming strained globally.

A combination of factors were at play locally. Government borrowing requirements were increasing rapidly, as the Government announced a large fiscal package as a policy response to COVID-19. At the same time, many fund managers and global investors were looking to liquidate holdings of NZ Government Bonds as a precaution against client redemptions in other asset classes. Crucially, intermediaries such as bank dealers were also beginning to withdraw their services, to reduce their risk as volatility rose.

Bid-offer spreads on government bonds are one measure of market liquidity (Figure 6).[13] While these rose dramatically through this period, they understated the problem. In practice, holders of Government bonds could not find an intermediary to provide a bid, for even small parcels of NZ Government Bonds with only a few months left until maturity. The secondary market had become almost completely illiquid.

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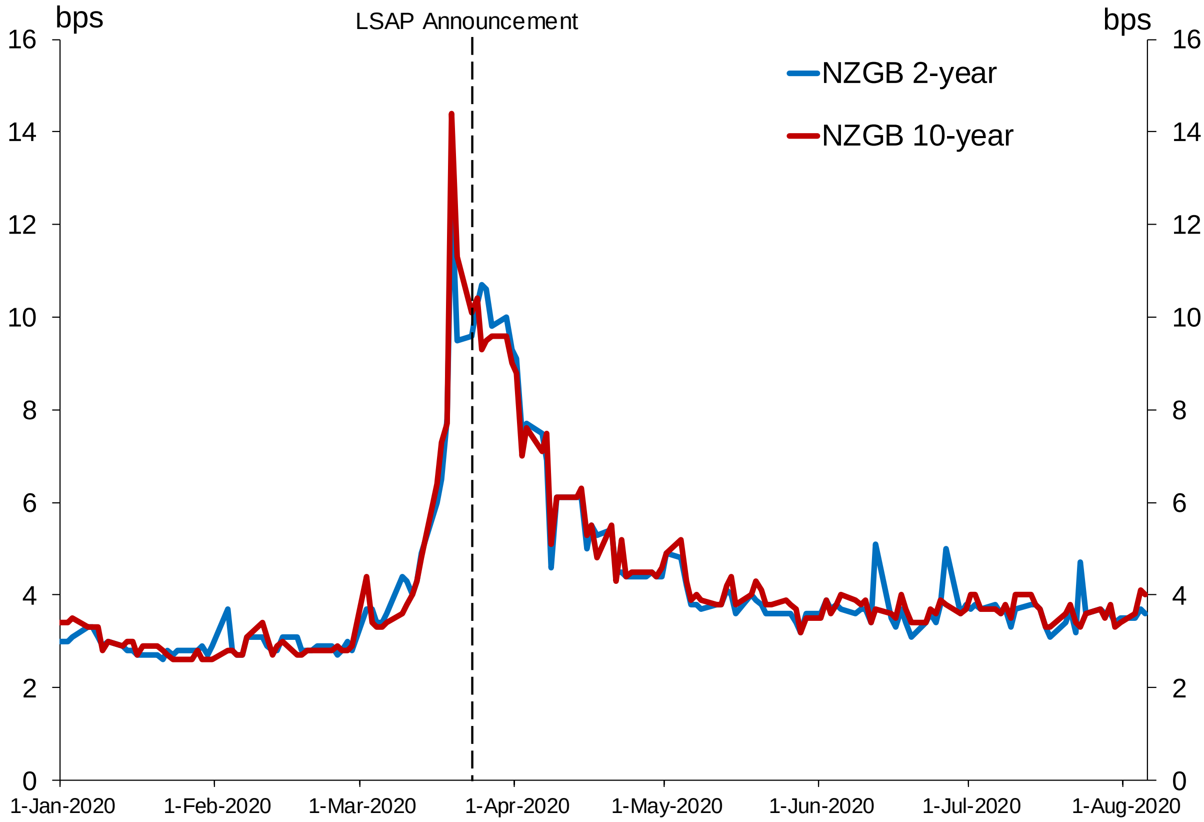
[10] Reserve Bank of New Zealand (2020i): Reserve Bank announces new facility and removal of credit tiers.
[11] Reserve Bank of New Zealand (2020h): Reserve Bank announces Corporate OMO and NZGB 2021 bond repurchase.
[12] Reserve Bank of New Zealand (2020c): Longer-term funding to support business lending.
[13] The bid-ask spread is a common measure of market liquidity. A bid is the yield at which a bond dealer is willing to buy a bond, whereas the ask or offer is the yield at which the dealer is willing to sell the bond. Wider bid-ask spreads make it more expensive to buy or sell bonds.

Figure 6: Bid-offer spreads on NZ Government Bonds



Source: Bloomberg and Reserve Bank of New Zealand.

There were three main measures we took in response to assist market functioning.

- First, we increased our early repurchases of maturing government bonds. We already had a programme in place to repurchase early the NZ Government Bond due to mature on 15 June 2020. On 30 March, we extended this programme to also include the NZ Government Bond maturing on 15 May 2021, beyond a year to maturity.[14] This provided an additional avenue for dealers to reduce their inventories, and freed up their ability to intermediate other flows in the market.

- We also announced our willingness to support liquidity in the secondary market for NZ Government Bonds,[15] implementing a separate Bond Market Liquidity Support (BMLS) scheme. This involved us placing bids for NZ Government Bonds in the wholesale broker market in conventional sized parcels of $5 million to $20 million, where no other bids were being offered by market participants. This small-scale intervention was designed to provide the market with confidence there was as a bidder of last resort, and enable price transparency in a market that had become illiquid and opaque.

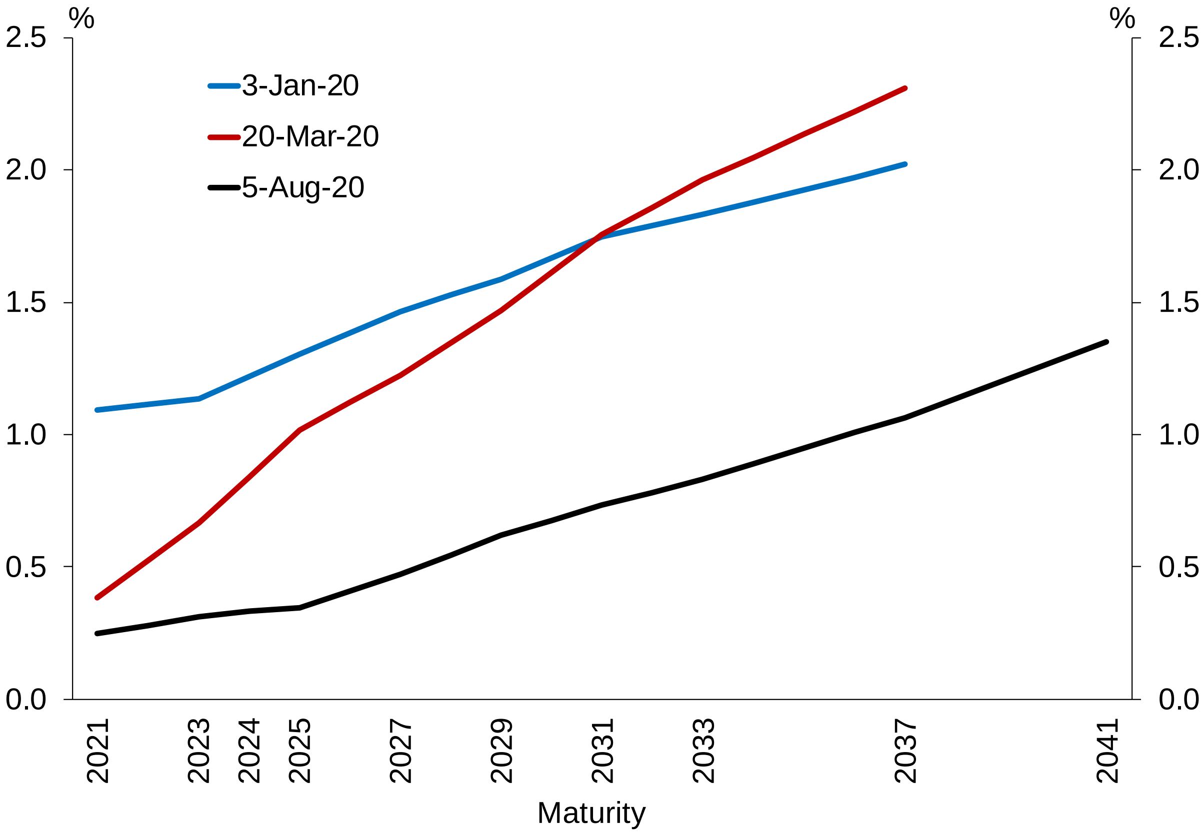
- On 25 March following an extraordinary meeting, the MPC decided that the Reserve Bank would undertake a LSAP programme of up to $30 billion of NZ Government Bonds, to

[14] Reserve Bank of New Zealand (2020h): Reserve Bank announces Corporate OMO and NZGB 2021 bond repurchase.
[15] Reserve Bank of New Zealand (2020j): The Reserve Bank is committed to ensuring smooth market functioning.

provide monetary stimulus by lowering interest rates across the yield curve.[16] Operational decision-making around the implementation of purchases was delegated to staff in the Financial Markets Department. This allowed us to purchase larger amounts initially, both to keep yields low and to support market functioning by introducing a buyer in large scale across the yield curve. The size of this LSAP programme was increased at subsequent *Monetary Policy Statements*. By early August, our holdings of NZ Government Bonds had risen to over $20 billion.

The combination of these actions helped restore market functioning and contributed to the yield curve of NZ Government Bonds becoming lower and flatter (Figure 7), consistent with the MPC's immediate objective of softening the blow from COVID-19 on the New Zealand economy.

Figure 7: New Zealand Government Bond yield curve



Source: Bloomberg and Reserve Bank of New Zealand.

New Zealand dollar corporate bonds

Finally, despite our actions in other interest rate markets, by early April the NZ dollar corporate bond market was becoming increasingly dysfunctional.

As had occurred earlier in the NZ Government Bond market, given heightened uncertainty and volatility, intermediaries were withdrawing from the secondary market, resulting in a lack of bids, a widening of spreads, and an absence of price transparency.

We had a particular concern about the lack of liquidity in bonds issued by the NZ Local Government Funding Agency (LGFA), which was the largest and most liquid issuer of non-government bonds in normal times, and a key benchmark for other issuers in the NZ dollar corporate bond market. A

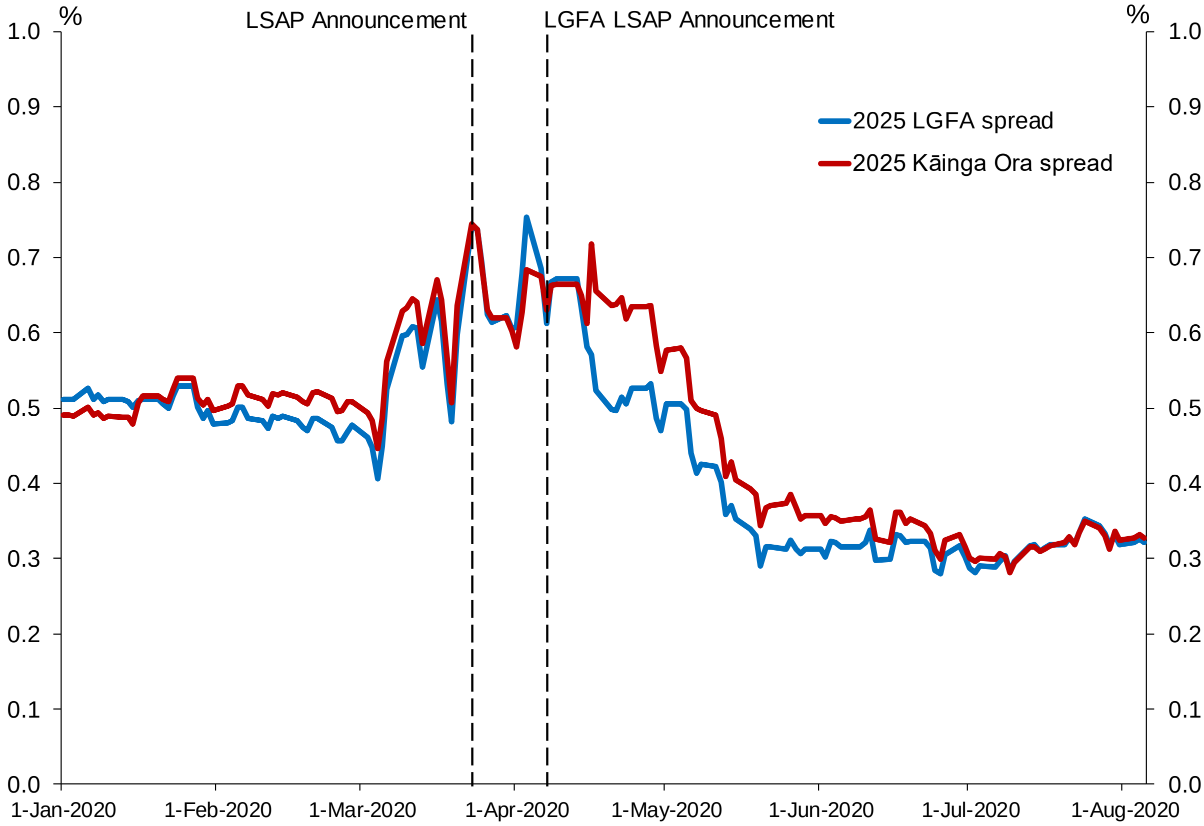
[16] Reserve Bank of New Zealand (2020k): Reserve Bank to begin Large Scale Asset Purchases.

continued absence of secondary market liquidity was creating a real risk that primary issuance in New Zealand's debt capital market – a key channel of monetary policy – could be closed for a prolonged period.

On 6 April, LGFA bonds were added to our BMLS scheme, and we began asking wholesale market intermediaries for offers to sell LGFA in conventional sized parcels of $5m to $20m. [17] On 7 April, following another extraordinary MPC meeting, LGFA bonds were also added to the LSAP programme, enabling purchases up to $3 billion. [18] In May this was reformulated as a cap of up to 30 percent of LGFA bonds on issue.

These actions saw benefits across the NZ credit market, even to issuers not included in the BMLS or LSAP programmes. The corporate bond spreads of LGFA and other issuers narrowed (Figure 8a and 8b), secondary market liquidity returned to more normal conditions, and primary issuance has been undertaken by both the LGFA and some other non-government issuers.

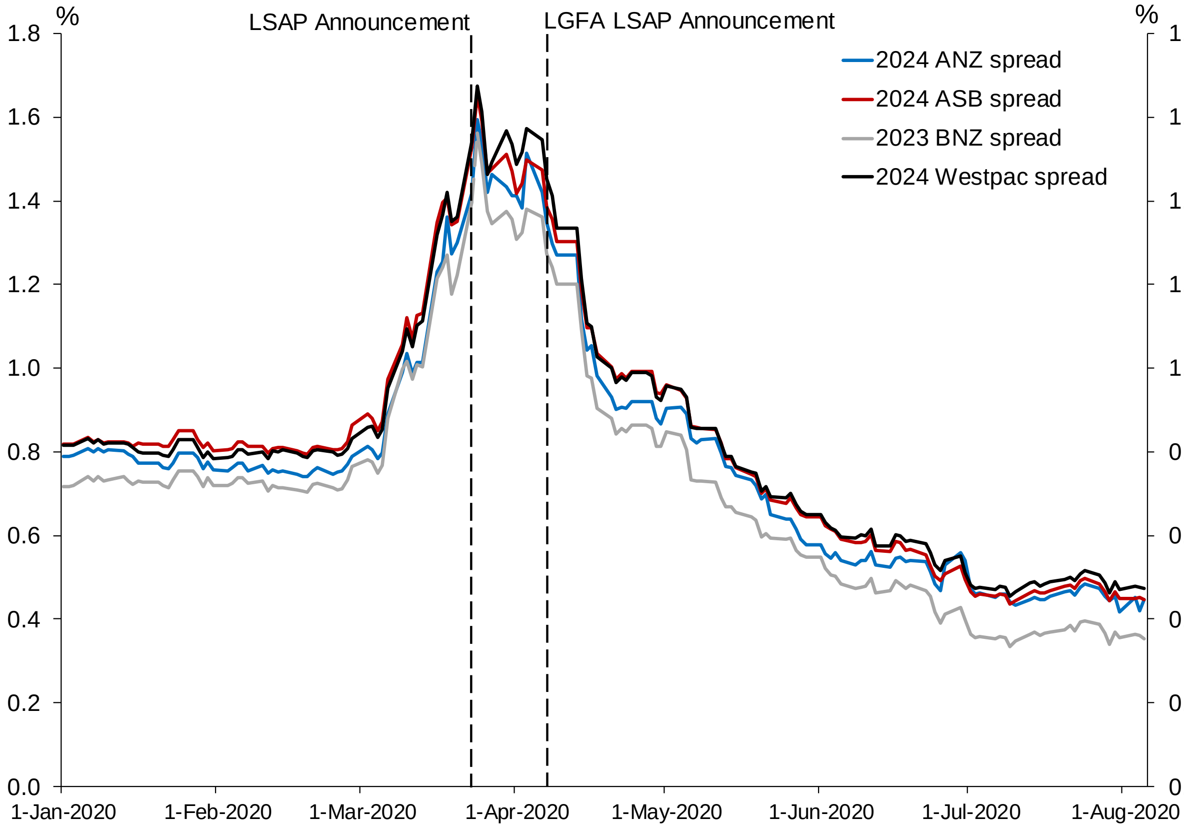
Figure 8a: LGFA and Kāinga Ora spreads to NZ Government Bonds



Source: Bloomberg and Reserve Bank of New Zealand.

[17] Reserve Bank of New Zealand (2020f): Offer to purchase Local Government Funding Agency bonds.
[18] Reserve Bank of New Zealand (2020l): Reserve Bank to extend Large Scale Asset Purchases.

Figure 8b: Bank spreads to NZ Government Bonds



Source: Bloomberg and Reserve Bank of New Zealand.

Liabilities

The rapid expansion of assets on our balance sheet was matched by an equally fundamental change in the size and composition of our liabilities.

Crown Settlement Account

It was an unprecedented time for the management of Crown liquidity through the CSA.

The largest immediate pressure was the Government's Wage Subsidy scheme that has paid out over $13 billion to date. From the start of Alert Level 4 lockdown in March, this involved upfront payments of three months' worth of subsidy covering around half of New Zealand's labour force.

At the end of March, we agreed with New Zealand Debt Management to temporarily increase the overdraft facility on the CSA from $5 billion to $10 billion for three months. This was designed to assist the Crown in managing significantly higher short-term uncertainty around fiscal flows and to afford the Crown more flexibility in its design and implementation of funding activity, as well as any associated NZ Government Bond issuance.

The CSA went briefly into overdraft in mid-April. Since then the balance in the CSA has grown steadily as the Government has raised funds through its weekly bond and T-bill tender programmes and large syndications of new bond issues. It has also been assisted by better-than-forecast fiscal outcomes in the near-term. At the end of July the CSA balance had grown to $18 billion.

Settlement balances

Since COVID-19, the settlement balances of the banking system have increased from around $8 billion to between $20-30 billion (Figure 9).

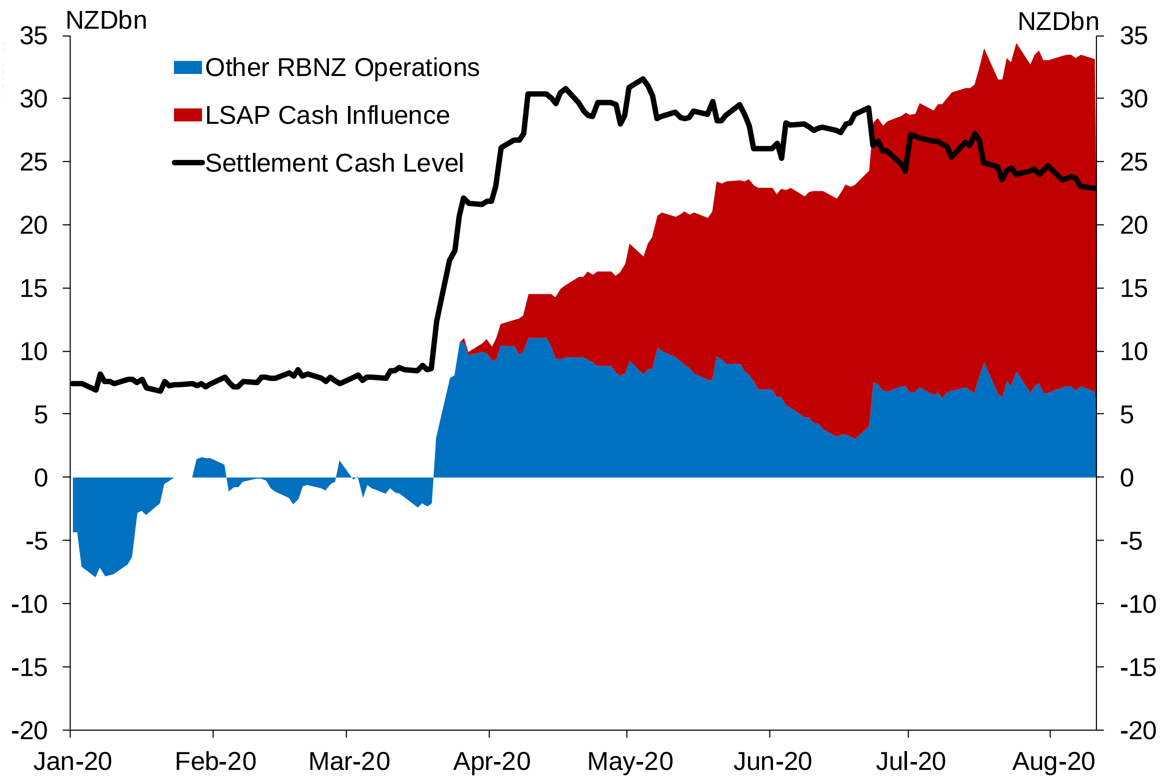
Under the previous corridor system, Government cash flows had to be offset through our OMOs to maintain the target amount of aggregate settlement cash in the banking system. This has not been required since the shift to a floor system, where all settlement cash balances receive the OCR. Since then, we have only partially smoothed out the lumpiest government cash flows.

Rather, our influence on the level of settlement cash has come through two main actions.

- *Open Market Operations:* Our initial liquidity injections in March to support the functioning of the FX swap market lifted the level of settlement cash considerably. Since then, we have let some of these maturities run off as conditions in NZ dollar money markets have returned to normal.

- *LSAP:* The purchases of bonds from banks in the LSAP programme are funded by increasing banks' settlement accounts. With purchases of up to $100 billion authorised by the MPC announced in total through to June 2022, this will be an ongoing upward influence on settlement balances and our overall balance sheet.[19]

Figure 9: Settlement Cash Level and Reserve Bank Influences



Source: Reserve Bank of New Zealand
Note: Other RBNZ Operations includes OMOs and the TAF.

Currency in Circulation

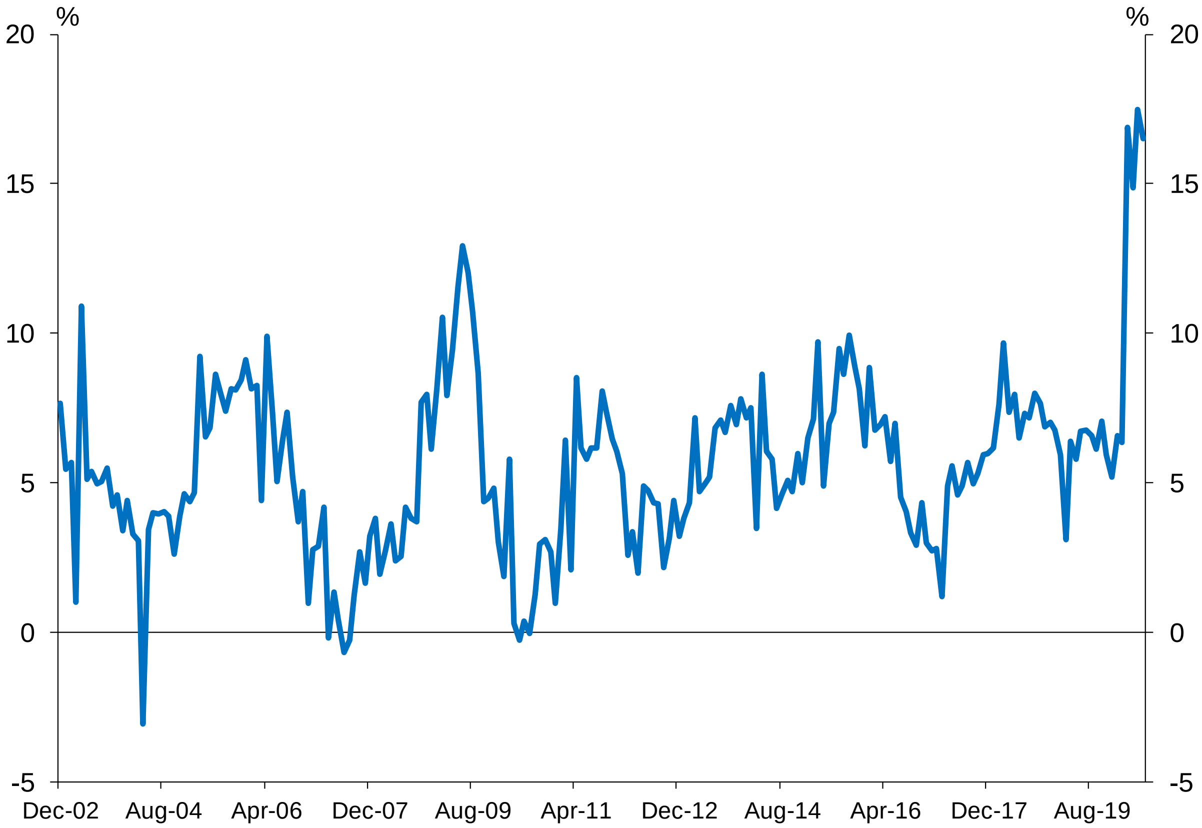
The final component of our balance sheet I'd like to touch on is currency in circulation, coming back to our core role as the monopoly provider of legal tender in New Zealand.

Many retailers chose contactless payment methods as a preference during the height of COVID-19, to reduce the amount of physical contact required to make payments.

[19] Reserve Bank of New Zealand (2020d): Monetary Policy Statement August 2020.

However, in practice we have experienced the very opposite of a decline in cash. Physical currency in circulation rose by around $800 million over the month of March.[20] Around a year's worth of normal demand for $50 notes was put into circulation by banks in the days leading up to the start of Alert Level 4 lockdown on 25 March. As a result, annual growth in currency in circulation rose to 18 percent, from its more normal average closer to 5 percent (Figure 10).

Figure 10: Rolling annual growth of currency in circulation



Source: Reserve Bank of New Zealand.

This increase in cash in circulation through COVID-19 is both consistent with international experience and our own recent engagement with New Zealanders on the Future of Cash.[21] The key message of that consultation was that while as a society we are using cash less, we are not becoming cashless. Cash still plays an important role for many people, including as a store of value outside the banking system or in its role as a contingency back-up method of payment. For some, particularly those financially or digitally excluded, access to cash remains an essential component of engaging in society.

Through COVID-19 we have worked with banks, security companies, and the New Zealand Defence Force to activate a number of emergency contingency measures to ensure that NZ dollar cash is ready and available in all regions of the country, and resilient to further disruptions in supply chains and distribution if the COVID-19 pandemic escalates.

[20] Reserve Bank of New Zealand (2020b): Financial Stability Report May 2020.
[21] Reserve Bank of New Zealand (2019a): The Future of Cash Use - Te Whakamahinga Moni Anamata; Reserve Bank of New Zealand (2019b): The Future of the Cash System - Te Pūnaha Moni Anamata.

We have also reiterated the message that cash is just one of a number of frequently touched surfaces – much like a debit or credit card, phone or watch – and reinforced the need for good hand hygiene regardless of the way payments are made or accepted.[22]

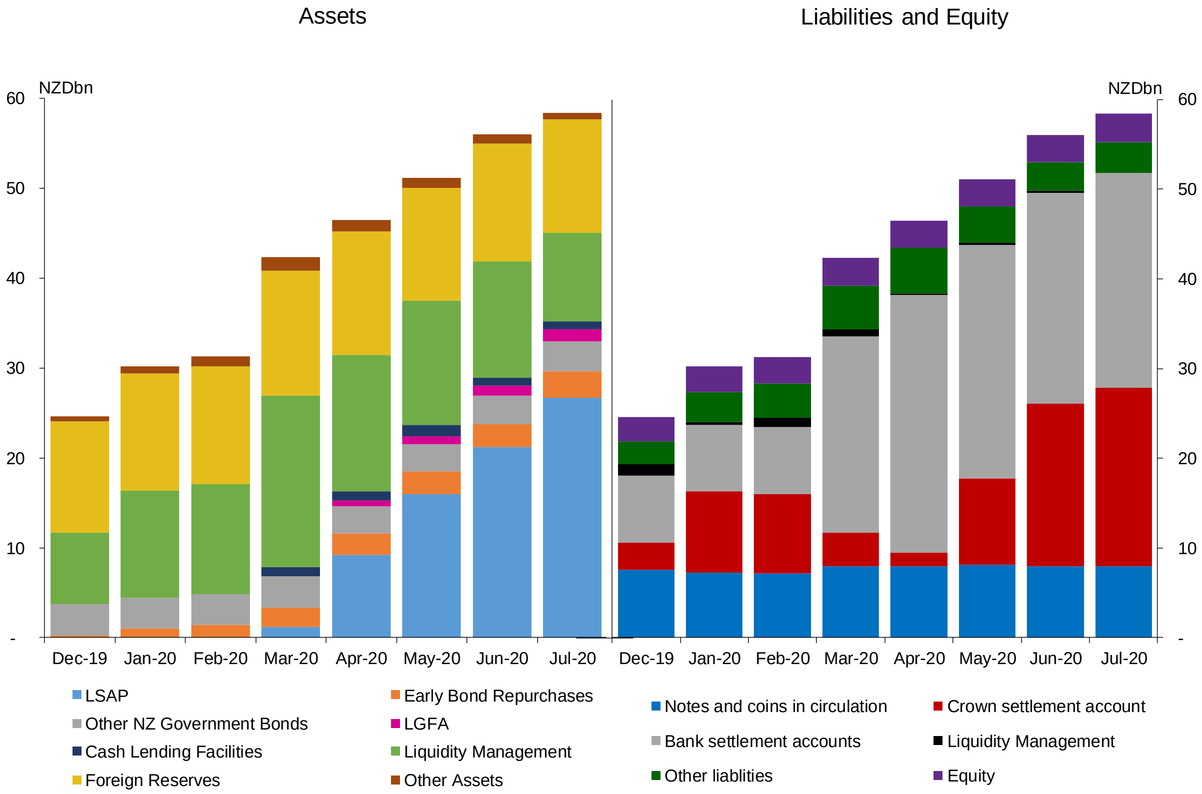
Balance sheet with COVID-19

Bringing the asset and liability sides of the balance sheet together, Figure 11 illustrates the evolution so far through 2020.

Figure 12 provides a more detailed background by each new scheme, programme and facility launched since COVID-19, against our balance sheet at the beginning of the year.

All this information is updated each month on our website.[23]

Figure 11: Balance Sheet with COVID-19



Source: Reserve Bank of New Zealand.

[22] Reserve Bank of New Zealand (2020a): Cash and other payments systems ready for COVID-19.
[23] Data for this chart and more detailed explanations are available here: https://www.rbnz.govt.nz/markets-and-payments/our-balance-sheet-at-work.

Figure 12: Balance Sheet with COVID-19

Assets (NZ$ million)	Programme/ Purpose	Dec-19	Jul-20	Max	Liabilities (NZ$ million)	Programme/ Purpose	Dec-19	Jul-20	Max
NZ Government Bonds	LSAPs - Nominal bonds	-	25,496	25,496	Notes and coins in circulation	Payment System	7,557	7,928	8,088
	LSAPs - Index Linked Bonds	-	1,086	1,086	Crown settlement account		3,048	19,917	19,917
	BMLS	-	140	141	Bank settlement accounts		7,493	23,927	28,737
	Early Repurchases	248	2,946	2,946	Reserve Bank bills	Liquidity management and monetary policy implementation	1,225	-	1,225
	Other	3,512	3,333	3,512	Repurchase agreements		-	71	166
LGFA	LSAPs	-	1,167	1,167	Other liabilities	-	2,524	3,393	5,054
	BMLS	-	140	140	Equity	Revaluation gains/losses	2,752	3,157	3,157
Cash lending	TAF	-	861	1,244					
	COMO	-	-	-					
	TLF	-	27	27					
	CSA overdraft	-	-	-					
Foreign Investment Assets using FX Swaps proceeds	Liquidity management and monetary policy implementation	7,302	9,854	18,668					
Reverse repurchases		600	-	600					
Foreign Reserve Management assets	Foreign Reserves	12,383	12,595	13,907					
Other assets	-	554	748	1,489					
Total		**24,599**	**58,393**		**Total**		**24,599**	**58,393**	

Source: Reserve Bank of New Zealand.
Note: Max is the maximum value of the month end figures since Dec-19.

Reflections, next steps and conclusion

While New Zealand's financial markets have been functioning again, with the global COVID-19 pandemic ongoing it feels far too early to claim victory. However, I think it is worthwhile to make some initial observations, reflections, and comments on next steps from here.

Risk Appetite Framework

As outlined in the narrative of what we have done through COVID-19, our goal has not been to maximise our profits or dividends from the activities on our balance sheet. Rather, it is to achieve our ultimate policy objectives of monetary and financial stability. However, we still need to anchor our balance sheet decisions within a clear risk appetite framework, across four key dimensions:

- Legal risk: meeting our mandate, operating within our legal powers, and working with others where additional powers are sought.
- Operational risk: designing, implementing and executing our plans.
- Financial risk: taking on additional credit, interest rate or liquidity risk from the assets and liabilities on our balance sheet.
- Reputational risk: explaining to all our stakeholders what we do, why we have taken certain actions, and where we see the limits of our capabilities and responsibilities.

As a central bank, we have a very low appetite for legal and operational risk.

However, we do understand that in situations like the GFC or COVID-19, we need to have a high appetite to take financial risks in order to successfully achieve our policy objectives. Some of these new activities on our balance sheet – such as the TAF, COMO, TLF, BMLS and increased activity in FX swaps – have been taken on using our existing capital and frameworks for managing financial risk. For some other new activities – such as the LSAP – we have received an indemnity from the Crown to cover the additional credit and interest rate risk from these holdings on our balance sheet.[24]

Equally, we are also aware that we need to have some appetite to take reputational risk to achieve our end goals. Undertaking anything new or uncertain will always increase the need to explain our actions under a heightened degree of scrutiny. That said, delivering on our mandate while engaging successfully with all our stakeholders along the way should be reputation enhancing.

Global developments and comparisons

In New Zealand, we launched a range of schemes and programmes across our balance sheet, including the TAF, COMO, TLF, BMLS and LSAP. At the same time, central banks around the world have unleashed an alphabet soup of measures. As a small open economy integrated into global markets, we have undoubtedly benefited from the actions of other central banks to calm markets, especially the US Federal Reserve in its crucial role as the global reserve currency.[25]

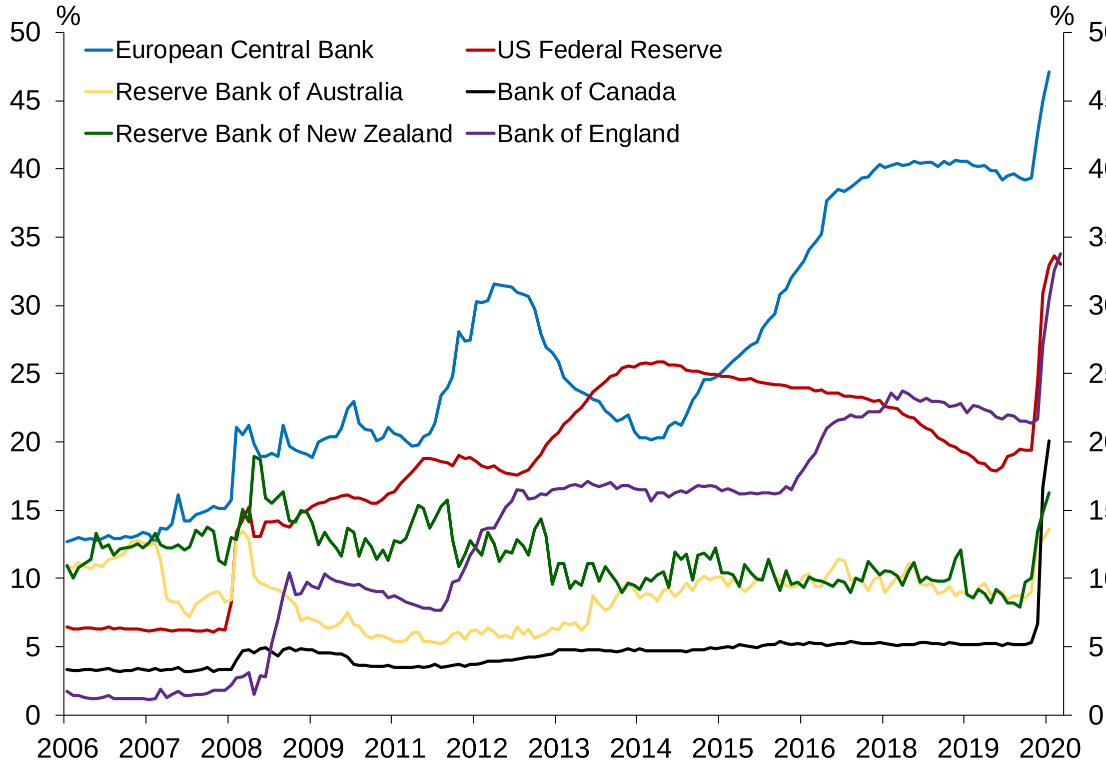
It is easy to focus on the differences in actions taken by central banks in other countries, either in the timing or the exact design of those actions.

[24] Robertson (2020): Letter of Indemnity – August 2020.

[25] The Fed also provided international USD liquidity by offering USD swap lines to nine major central banks, including the RBNZ. See Federal Reserve (2020).

But talking to other central bankers overseas and listening to their stories, the similarities are far more striking.[26] Within a four to five week period through March and April, many central banks deployed a range of emergency and unconventional measures that resembled the actions taken over an 18 month period during the GFC. We have not been alone, with central bank balance sheets expanding in concert (Figure 13).

Figure 13: Global central bank balance sheets as a percent of GDP



Source: Source: Haver, Bloomberg and Reserve Bank of New Zealand.

The experience of central banks in other countries also provides some insight into exit strategies, especially those countries that began large scale asset purchase programmes during the GFC. In many cases, central bank balance sheets have remained relatively large for a prolonged period.

There have been some instances where the size of balance sheets have started to reduce when policymakers had sufficient confidence their policy objectives could be achieved with less support. That said, it is not necessarily the case that central bank balance sheets should revert to their former size. It will be a case of what is optimal in the future to enable central banks to fulfil their remits.[27]

Country specific approaches

Each country needs to find its own unique approach to both expanding the balance sheet and its exit strategy.

Beyond the specific economic outlook, the approach of each country will also be dependent on the particular size, depth and structure of its financial markets; the composition of its financial system; and its governance and institutional arrangements between the central bank and government.

[26] Debelle (2020); Hauser (2020); Kent (2020); Logan (2020).

[27] Reserve Bank of New Zealand (2019c): The remit for the Monetary Policy Committee.

For example, there are a number of specific features for New Zealand that have shaped our balance sheet response to COVID-19.

- The relative importance of the FX swap market made this a focal point of actions to restore the functioning of New Zealand's money markets.

- The relatively small number of intermediaries, local investors and hedging tools in the NZ Government Bond market shaped the design of the LSAP programme. Regular and consistent purchases across the yield curve through a transparent tender process have been important to not only lower bond yields, but to restore market liquidity and confidence to intermediaries and investors.

- The relatively low normal amount of activity in New Zealand's corporate bond market also shaped our limited inclusion of the LGFA as the only non-government bond issuer within the LSAP programme. In April, we judged that a programme that included a wide range of corporate issuers on scale could potentially do more harm than good, by removing scarce supply and distorting conditions when normal activity resumed as market calm was restored.

Just as Tāne Mahuta is part of the forest and the guardian – kaitiaki – of that forest, the Reserve Bank is both a part of the financial ecosystem and kaitiaki. As such, our engagement with participants in New Zealand's financial markets has been crucial for us to assess and design how we have used our balance sheet and designed new facilities.

Ongoing dialogue with the heads of dealing rooms, treasurers, chief economists, corporate issuers, fund managers, market analysts, global investors, the New Zealand Financial Markets Association, and New Zealand Debt Management all added to our understanding of market conditions and the response needed to continue delivering our policy objectives.

Much of this was done remotely throughout the lockdown, sometimes into the night and weekends, demonstrating the importance of building strong relationships with market participants before the crisis.

Next steps

Of course, the implications of COVID-19 are not over, either globally or here in New Zealand.

At the August *Monetary Policy Statement* last week, the MPC kept the OCR at 0.25 percent and expanded the LSAP programme to up to $100 billion.

The Committee agreed that a lower or negative OCR, a Funding for Lending Programme (FLP), purchases of foreign assets, and interest rate swaps all provided policy optionality, to be assessed against the Committee's five principles for alternative monetary policy tools.[28]

That is, they all remain on the list of possible instruments that could shape our balance sheet into the future.

In particular, the Committee expressed a preference for considering a package of a negative OCR and a Funding for Lending Programme (FLP), in addition to the LSAP programme. Staff were

[28] Reserve Bank of New Zealand (2020g): Principles for Using Unconventional Monetary Policy in New Zealand.

instructed to actively prepare advice on their design and deployment if deemed necessary, taking account of the operational readiness of the financial system.

Once again, our goal will not be to use our balance sheet to maximise profit or minimise financial risk, but as a tool to achieve our policy objectives, within a clear risk appetite framework to assess and manage the legal, operational, financial and reputational risks of these tools.

As before, our external engagement with financial market participants is going to be crucial to help us design a potential package of measures to be as effective as possible, to help us bring stakeholders along the way with us, and to maximise the chance of success.

Not only that, we will collectively need to build on the story of Tāne Mahuta with the public of New Zealand, to explain what we are doing, why, and how it will ultimately contribute to the long-term prosperity of New Zealanders.

Nō reira,

Nau te rourou, naku te rourou, ka ora ai te iwi.

With your contribution, and my contribution, the people will prosper.

Tēnā koutou, tēnā koutou, tēnā tatou katoa.

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