02/2022

Monetary Policy STATEMENT

Reserve Bank of New Zealand
Te Pūtea Matua

STATEMENT of the MPC's monetary policy strategy

The Monetary Policy Committee's (MPC) monetary policy strategy is its overarching plan for how it will formulate monetary policy under different circumstances to achieve its objectives.[1] It outlines a consistent approach to how the MPC intends to achieve its objectives across time, accounting for trade-offs and uncertainty. Agreeing on and publishing a strategy promotes transparency, public understanding, and accountability.

Monetary policy framework and objectives

Under the *Reserve Bank of New Zealand Act 1989* (the Act), the MPC is responsible for formulating monetary policy to maintain a stable general level of prices over the medium term and to support maximum sustainable employment.[2] Operational objectives for monetary policy are set out in the *Remit*. The current *Remit* sets out a flexible inflation targeting regime, under which the MPC must set policy to:

- keep future annual inflation between 1 and 3 percent over the medium term, with a focus on keeping future inflation near the 2 percent mid-point; and
- support maximum sustainable employment, considering a broad range of labour market indicators and taking into account that maximum sustainable employment is largely determined by non-monetary factors.

In pursuing these objectives, the *Remit* requires the MPC to have regard to the efficiency and soundness of the financial system, seek to avoid unnecessary instability in the economy and financial markets, and discount events that have only transitory effects on inflation. The MPC must also assess the effect of its monetary policy decisions on the Government's policy to support more sustainable house prices.

The Reserve Bank's flexible inflation targeting framework and the MPC's monetary policy strategy reflect the fact that:

- low and stable inflation is monetary policy's best long-run contribution to the well-being of New Zealanders;
- in the short to medium term, monetary policy can influence real variables such as employment, and hence policy trade-offs can arise; and
- monetary policy is more effective if the Bank's policy targets are credible, so policy should be formulated in a way that ensures credibility is maintained.

Key aspects of monetary policy strategy

The MPC **practises forecast targeting**, which means that it sets monetary policy such that it expects to achieve its inflation and employment goals in the medium term. In most instances the MPC aims to return inflation to the target mid-point within a one to three year horizon. The appropriate horizon at each policy decision will vary based on how different policy paths will contribute to maximum sustainable employment, whether price-setters' expectations are consistent with the inflation target, and other considerations such as the balance of risks to the MPC's central economic outlook.

[1] For a more in-depth discussion of monetary policy strategy in New Zealand, see J. Ratcliffe and R. Kendall (2019), 'Monetary policy strategy in New Zealand', Reserve Bank of New Zealand, *Bulletin*, Vol. 82, No. 3, April.

[2] These economic objectives contribute to the overall purpose of the Act, which is to promote the prosperity and well-being of New Zealanders, and contribute to a sustainable and productive economy. See monetary policy framework for more information on New Zealand's monetary policy framework, including the full text of the *Remit*.

The MPC does not attempt to return inflation and employment to target immediately, because monetary policy actions take time to transmit through the economy. Attempting to return inflation to target too quickly would result in unnecessary instability in the economy and financial markets. The 1 to 3 percent target range for inflation provides the MPC with flexibility to ensure that managing inflation variability does not come at the cost of excessive variability in the real economy. For similar reasons, the MPC does not attempt to offset events that are expected to have only transitory effects on inflation.

The MPC **takes into account both its inflation and employment objectives** when setting policy. In the long run, no trade-off exists between the MPC's objectives. In the short to medium term, there may be situations where monetary policy can move one objective closer to target only at the cost of the other, resulting in a trade-off. When a trade-off does arise, the MPC will consider outcomes for both objectives in setting policy. In general, if employment is projected to be below its long-run sustainable level, the MPC would let inflation overshoot the target mid-point for a time, and vice versa (while staying within the 1–3 percent target range).

The MPC **responds to both deviations above target and deviations below target**. The MPC sets policy to stabilise employment near its maximum sustainable level, and to return inflation near to the target mid-point, regardless of whether inflation is currently below or above 2 percent. This approach helps to anchor inflation expectations at the target mid-point and promotes sustainable growth and employment by dampening fluctuations in the business cycle.

The MPC **considers the balance of risks** to its objectives that arise from uncertainty about the economic outlook and the transmission of its policy decisions. In general, the MPC will incorporate likely future developments into its central economic projections and set monetary policy in response. However, the MPC will also take into account risks to its central projections when setting policy. Under extreme uncertainty, the MPC may choose to publish scenarios instead of central projections to illustrate the range of possible situations and economic outcomes that could occur when circumstances are highly unpredictable.

The MPC **has regard to the efficiency and soundness of the financial system**, while recognising that in most instances prudential policy is better suited to leaning against risks to financial stability. The Reserve Bank takes prudential policy settings into account when setting monetary policy, and vice versa.

Implementation of strategy

The MPC applies the following process when formulating a policy decision:

1. Firstly, it assesses the outlook for the economy and the implications for its policy objectives. It then discusses risks to achieving its policy objectives.
2. Next, it considers which stance of monetary policy is most consistent with its monetary policy strategy given the current economic outlook, risks, and trade-offs.
3. Finally, the MPC decides how it will achieve the desired stance of monetary policy, including whether or not to adjust its policy settings at the current meeting and how it will communicate the policy outlook. The MPC has a suite of monetary tools to achieve its goals, and uses its Principles for Monetary Tools to make decisions on which tools to deploy.

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Monetary Policy STATEMENT

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The projection was finalised on 17 February 2022. The OCR projection incorporates an outlook for monetary policy that is consistent with the MPC's monetary policy assessment, which was finalised on 23 February 2022.

Policy assessment

CHAPTER 01

CHAPTER 1
Policy assessment

Tēnā koutou katoa, welcome all.

The Monetary Policy Committee today increased the Official Cash Rate (OCR) to 1 percent. The Committee also agreed to commence the gradual reduction of the Reserve Bank's bond holdings under the Large Scale Asset Purchase (LSAP) programme – through both bond maturities and managed sales.

The Committee agreed it remains appropriate to continue reducing monetary stimulus so as to maintain price stability and support maximum sustainable employment (MSE).

The level of global economic activity is generating rising inflation pressures, exacerbated by ongoing supply disruptions. The pace of global economic growth has slowed however, due to the general elevated uncertainty created by the persistent impacts of COVID-19, and clear signals that monetary conditions will tighten over the course of 2022.

In New Zealand, underlying strength remains in the economy, supported by aggregate household and business balance sheet strength, fiscal policy support, and continued strong export returns. However, some short-term economic disruption is expected given the current growing COVID-19 health challenge. The high vaccination rates across New Zealand will assist significantly to reduce this disruption.

Economic capacity pressures have continued to tighten. Employment is now above its maximum sustainable level, with a broad range of economic indicators highlighting that the New Zealand economy continues to perform above its current potential.

Headline CPI inflation is well above the Reserve Bank's target range, but will return towards the 2 percent midpoint over coming years. The near-term rise in inflation is accentuated by higher oil prices, rising transport costs, and the impact of supply shortfalls. These immediate relative price movements risk generating more generalised price rises, especially given the current domestic capacity constraints.

The Committee agreed that further removal of monetary policy stimulus is expected over time given the medium-term outlook for growth and employment, and the upside risks to inflation.

Meitaki, thanks.

Adrian Orr
Governor

SUMMARY
Record of meeting

The Monetary Policy Committee discussed developments affecting the outlook for monetary policy. Global economic activity experienced a robust recovery in 2021. The pace of growth is expected to slow, weighed down by resource and production constraints.

Global inflation is expected to peak during 2022 and then moderate, as supply disruptions are gradually resolved. However, global inflation is currently higher, and expected to ease more gradually than anticipated in the November *Statement*.

The Committee noted that central banks are now looking to increase interest rates sooner and by more than anticipated in the November *Statement*. The rise in global interest rates has resulted in a fall in the New Zealand dollar, as interest rate differentials have narrowed. Bond and equity prices have been more volatile of late, in part due to the shift in monetary policy expectations and a rise in geopolitical tensions. The Committee noted that asset valuations had been boosted by very low interest rates, and that higher interest rates may dampen these valuations in future.

The New Zealand economy has been resilient in the face of the COVID-19 pandemic to date. Export prices have remained high, supported by the solid international economic recovery. Domestic spending and investment have also been robust. However, conditions have been very difficult for some businesses, especially in service industries.

The recent emergence and spread of the Omicron COVID-19 variant is expected to further disrupt economic activity in the near term. People's ability and willingness to work and spend will be strongly determined by near-term health outcomes.

The Committee reconfirmed that house prices in New Zealand are above their sustainable level, but are expected to ease over time. They noted that house prices had begun to ease, with monthly falls in December and January. Mortgage lending growth has also slowed. Government regulatory and tax policy changes, and high rates of residential building are expected to slow house prices. Higher mortgage interest rates will also play a role in the transition of house prices toward a more sustainable level over coming years.

Resource constraints are evident in the economy, and will be exacerbated by further disruptions from the Omicron outbreak. Employment is above its maximum sustainable level. The Committee noted that there has been some upward pressure on nominal wages, as expected, consistent with the tight labour market. They also noted that wage growth continues to lag CPI inflation.

The Committee discussed the outlook for net migration to New Zealand with the international borders being reopened in stages over coming months. The impact on labour supply is uncertain in the near term, but a positive inflow is expected over time as border flows return to normal. The Committee noted that net migration is assumed to increase slowly, helping to gradually ease skill shortages.

Annual CPI inflation has increased largely as expected in the November *Statement*, reflecting domestic capacity constraints and higher prices for imported goods, in particular oil. The Committee noted that annual inflation is expected to peak in early 2022, and then ease over the course of the year, returning to within their target range in mid-2023. The Committee agreed that further removal of monetary stimulus is necessary to achieve their *Remit*.

The OCR remains the Committee's preferred tool for implementing monetary policy, and the impact of additional monetary policy tools is considered when determining the level of the OCR. With regards to the latter, members noted that the Funding for Lending Programme (FLP) window closes this year. They also noted that the cost of bank funding from the FLP is rising in line with the OCR.

The Large Scale Asset Purchase (LSAP) programme was introduced in March 2020, providing significant stimulus and supporting the functioning of the bond market. Purchases under the programme were halted in July 2021.

The Committee agreed that managing down the Bank's holdings of these bonds was now consistent with their monetary policy objectives. Members also agreed that managed sales of bond holdings, in addition to not investing the proceeds of maturities, were most consistent with achieving their mandate over time (further details below).

The Committee discussed the extent of monetary tightening required to meet their price stability and maximum sustainable employment mandate. In doing so, the Committee applied their least regrets framework, noting that the most significant risk to be avoided at present was longer-term inflation expectations rising above the target and becoming embedded in future price setting.

It was agreed that more monetary tightening was needed than signalled in the November *Statement*. The Committee confirmed that the outlook for a higher OCR at the end of the projection horizon was a balanced reflection of the likely path of interest rates.

The pace at which monetary stimulus should be reduced was discussed by the Committee. Members agreed there were many factors to assess, balancing the need to reduce monetary stimulus with many uncertainties. They considered the balance of risks and noted that the behavioural responses of household and businesses in the face of higher interest rates would be important for the appropriate pace of tightening.

The Committee agreed that while higher interest rates are necessary, households and firms may have become more sensitive to interest rate changes as their debt levels have risen. Members also noted that a significant proportion of mortgages will be reset at higher interest rates over calendar 2022.

The current Omicron outbreak will lead to economic disruption and may weigh on consumer and investor confidence in the near term. Health outcomes will be important, in particular how these impact the supply capacity of the economy and level of demand.

While government spending and investment remains strong, the impulse to growth from fiscal support is now ebbing and will wane.

The recent signs of slowing in demand for housing was discussed by the Committee, which noted that house prices may fall further. The Committee agreed that higher interest rates were consistent with house prices becoming more sustainable. They also noted the Reserve Bank's recent policy adjustments to support the stability of the financial system, including tightening of loan-to-value ratio restrictions last year and ongoing changes to improve the capital adequacy of banks. The Committee acknowledged that some recent, more highly-leveraged, borrowers may be financially stretched in a higher interest rate environment.

When deciding whether to move the OCR up by 25 or 50 basis points, many members saw this as a finely balanced decision.

When considering the case for a 50 basis point increase, the Committee noted the high starting point for inflation and the drift upwards in measures of inflation expectations. The Committee agreed that maintaining stable longer-term inflation expectations near the midpoint of their target would greatly assist their purpose.

When considering the case for a 25 basis point increase, members noted that interest rates had already increased significantly late last year, and are expected to continue rising as the OCR is progressively increased. They also noted that conditional on the outlook, the OCR is expected to peak at a higher level than assumed at the November *Statement*. In addition, sales of the Reserve Bank's LSAP bond holdings may put some upward pressure on longer-term interest rates. Members of the Committee were conscious of broader uncertainty in the midst of the current Omicron wave.

Weighing the options, the Committee came to a consensus to increase the OCR by 25 basis points. The Committee also affirmed that it was willing to move the OCR in larger increments if required over coming quarters.

On Wednesday 23 February, the Committee reached a consensus to:

- Increase the OCR to 1 percent.
- Not reinvest the proceeds of any upcoming LSAP bond maturities.
- In addition, direct the Reserve Bank to sell nominal New Zealand Government Bonds and Inflation-indexed New Zealand Government Bonds to New Zealand Debt Management at a rate of $5 billion per fiscal year, commencing in July 2022, provided it remained consistent with the Bank's monetary policy objectives, and subject to market conditions.
- Hold the Local Government Funding Agency bonds until maturity.

Attendees:

Reserve Bank members of MPC:

Adrian Orr, Christian Hawkesby, Yuong Ha

External MPC members:

Bob Buckle, Peter Harris, Caroline Saunders

Treasury Observer:

Bryan Chapple

MPC Secretary:

Elizabeth Kendall

The Monetary Policy Committee's deliberations on the gradual reduction of the LSAP portfolio

The Committee discussed options for gradually managing down the size of the LSAP portfolio, guided by its principles for monetary policy tools (see Chapter 2, Box B). The Committee agreed that gradual reduction in the LSAP portfolio should seek to achieve three objectives:

- Have minimal impact on monetary stimulus – the bond holdings will not be actively used to remove monetary stimulus;
- Avoid harming the efficient functioning of financial markets which is essential for the functioning of the economy and the transmission of monetary policy; and
- Ensure that the MPC have the capacity to use the LSAP tool effectively, if economic and financial conditions deteriorate.

Reducing bond holdings will provide the Committee more scope to use LSAPs in the future and will support the management of liquidity in the financial system. Some members noted that some longer-term interest rates may change as the market analyses the net effect on bond supply. However, bond holdings will be gradually reduced to minimise unnecessary volatility in interest rates, consistent with the Committee's *Remit*.

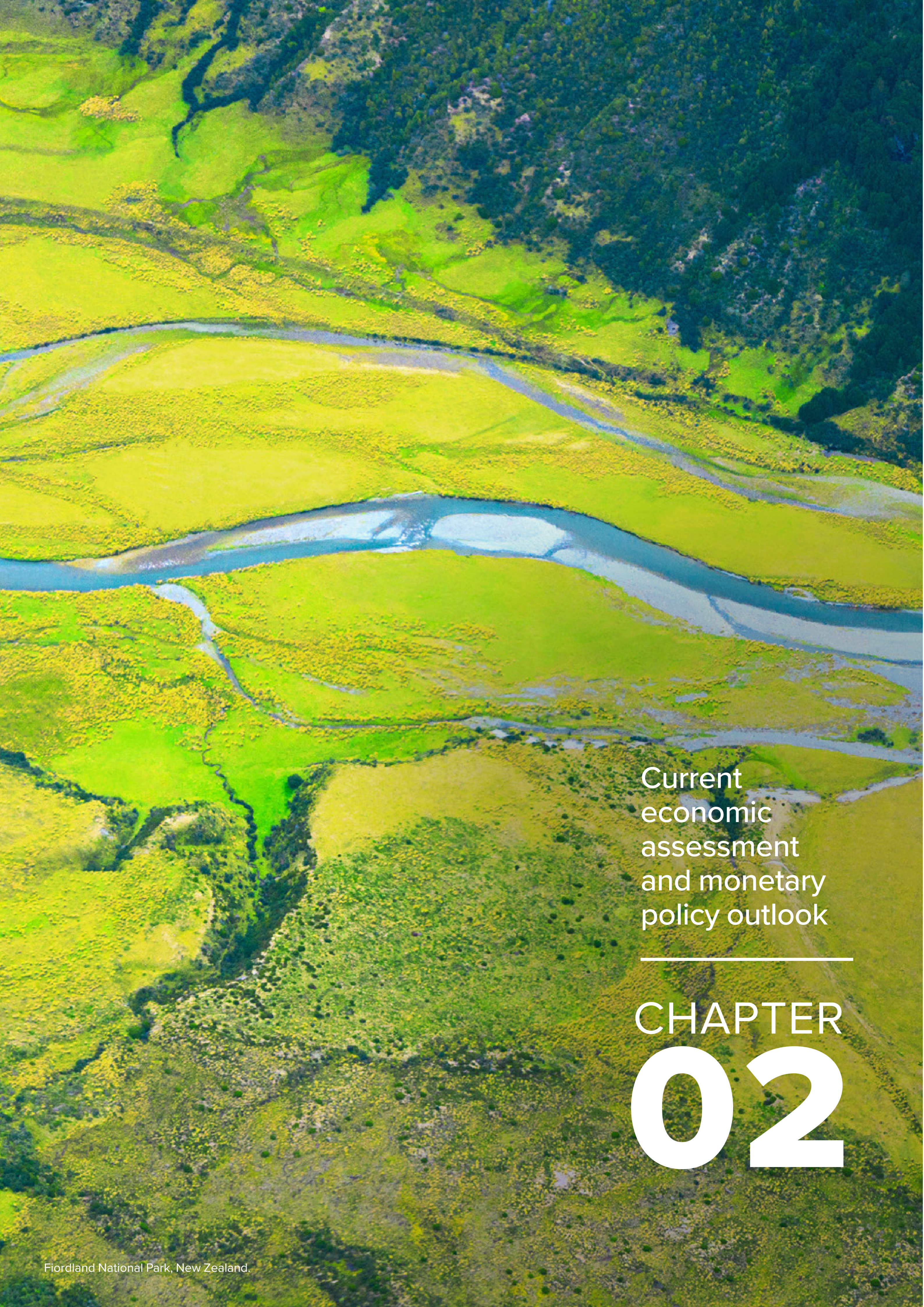
The Committee considered whether selling bonds back into the secondary market would be appropriate and noted that selling bonds to New Zealand Debt Management (NZDM) would be the most efficient approach, providing the market with clarity around net bond supply.

The Committee agreed not to reinvest the proceeds of any upcoming bond maturities and directed the Reserve Bank to sell the nominal New Zealand Government Bonds and Inflation-indexed New Zealand Government Bonds to NZDM at a rate of $5 billion per fiscal year. The Committee agreed to hold the Local Government Funding Agency Bonds until maturity, as the holdings of these bonds are comparatively small.

This pace of sales would continue provided it remained consistent with the Reserve Bank's monetary policy objectives, and subject to market conditions. The Committee reserves the right to change the rate of sales or halt sales should conditions change, but do not foresee such changes to be common. The Reserve Bank intends to commence bonds sales in July following further consultation with the NZDM, and will issue a market announcement in coming months outlining operational details prior to commencement.

In accordance with the LSAP indemnity, staff consulted the NZDM on a range of options for reducing the LSAP portfolio. The Committee's decision to sell bonds back to the NZDM will have implications for the NZDM's funding programme and the NZDM will provide updated issuance guidance at the *Budget* in May.

Members noted that the bond holdings would continue to provide a small amount of ongoing marginal monetary stimulus, which would gradually reduce over time as bonds holdings are reduced. Members reiterated that the OCR remains the most effective and efficient way of adjusting monetary stimulus in either direction. Therefore, the stance of monetary policy will continue to be communicated primarily via changes to the OCR and conditional forward guidance through the published OCR track.



Current economic assessment and monetary policy outlook

CHAPTER 02

Fiordland National Park, New Zealand.

CHAPTER 2
Current economic assessment and monetary policy outlook

Summary

- The New Zealand economy has remained robust in the face of the COVID-19 pandemic to date. The economy has been aided by high export prices, low interest rates and government support for workers and businesses.
- Economic activity will likely remain volatile in the near term. The spread of the Omicron variant is expected to weigh on household and business spending in the first half of this year. This reflects greater uncertainty, some hesitancy to go out and spend in places like restaurants and bars, and increased sick leave for workers.
- Strong demand has put pressure on available resources. This has been worsened by supply-chain bottlenecks, and border restrictions causing fewer international workers to come to New Zealand. The labour market remains tight, with the unemployment rate at its lowest-ever recorded level and wage inflation picking up. Employment is currently assessed to be above its maximum sustainable level.
- Annual Consumer Price Index (CPI) inflation increased to 5.9 percent in the December 2021 quarter and measures of core inflation have also risen. High inflation has been due to international factors, such as an increase in oil prices and the prices of other goods we import, and strong domestic demand. These influences are expected to persist in coming months. In addition, the New Zealand dollar has recently fallen against a basket of key trading partner currencies, making imports more expensive.
- Expectations for inflation one and two years ahead have increased significantly, consistent with recent high CPI inflation outturns. Looking five and ten years ahead, inflation expectations remain near the 2 percent midpoint of the target band. Elevated near-term inflation expectations are expected to contribute to higher inflationary pressures in the short term.
- Interest rates faced by households and businesses have increased only slightly following a sharp rise before the November *Statement*. However, expectations for further increases in the Official Cash Rate (OCR) have risen. Our central projection assumes that higher interest rates will be required to dampen demand pressures and domestic inflation over the next few years. Tradables inflation is assumed to ease as global oil prices fall back and supply-chain bottlenecks are at least partially cleared.
- Conditional on our current economic assessment and the balance of risks, the outlook for the OCR is higher than in the November *Statement*. This ensures the MPC meets its inflation and employment objectives.

Current economic assessment

The New Zealand economy remains robust

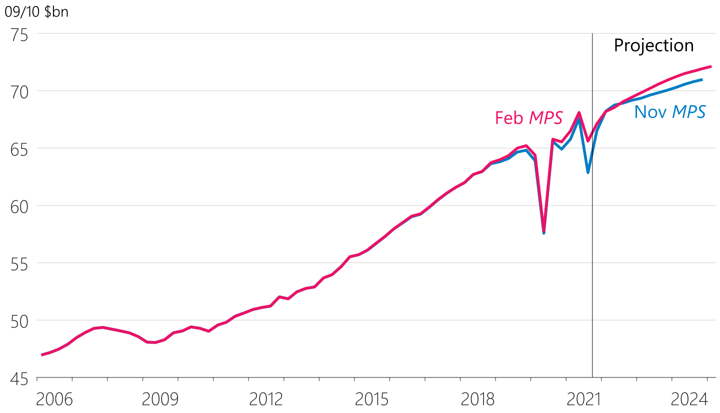
The New Zealand economy has remained robust in the face of the COVID-19 pandemic to date. This strength has been supported by low interest rates and significant government support to help workers and businesses, as well as continued high demand and strong prices for our goods exports. Restrictions over the second half of 2021 to slow the spread of COVID-19 have created significant challenges for many businesses and individuals. However, the overall impact on economic activity appears smaller than anticipated as households and firms have likely adapted to the ongoing disruption (figure 2.1).

Economic activity has remained volatile due to the prolonged restrictions in parts of the North Island in late 2021 and the nationwide move to the red traffic light setting under the Government's COVID-19 Protection Framework in January. High-frequency data suggest that the impact of the move to red has been fairly limited to date (figures 2.2 and 2.3). However, conditions could change quickly as the Omicron variant becomes more widespread. A variety of factors have led to more subdued domestic tourism and travel this summer holiday period compared to a year ago (figure 2.4). These factors likely include uncertainty related to the spread of the virus, more opportunities for international travel later in the year, and less pent-up demand.

Figure 2.1

Quarterly production GDP

(seasonally adjusted)

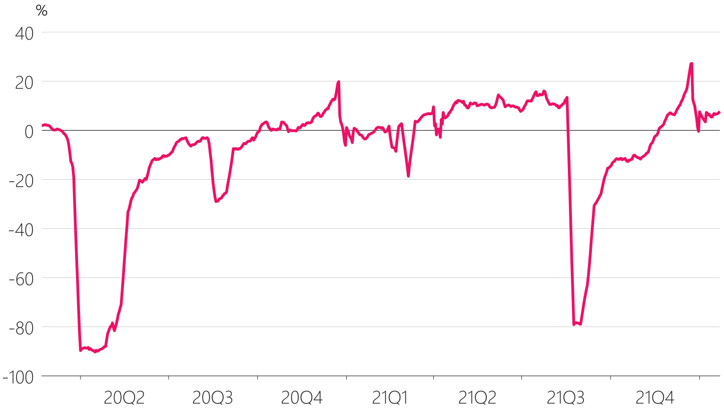


Source: Stats NZ, RBNZ estimates.

Figure 2.2

Household mobility

(change from baseline)



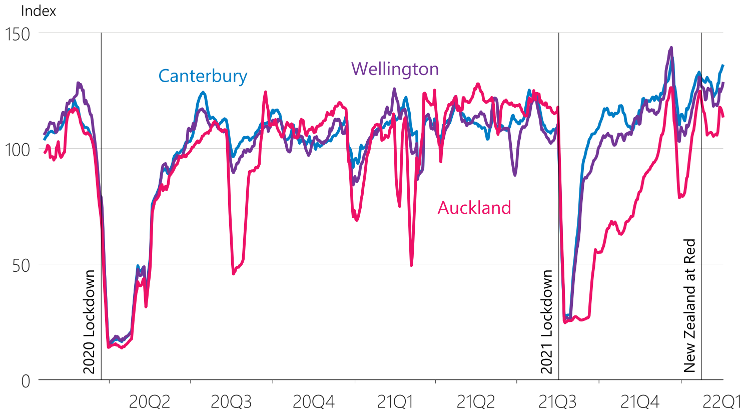
Source: Google.

Note: The data show individuals' movements from their Google location history. The measure is the percentage change compared to the median value in the five-week period from 3 January to 6 February 2020.

Figure 2.3

Driving mobility

(7-day moving average)



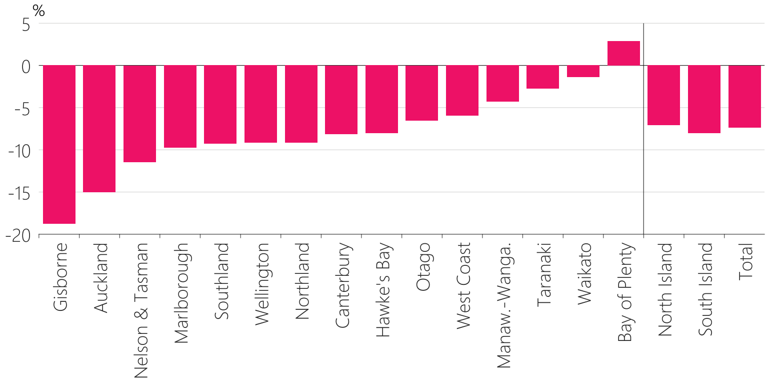
Source: Apple.

Note: The data show individuals' movements from Apple Maps data. The measure is indexed to a baseline value taken on 13 January 2020.

Figure 2.4

Domestic travel by region

(December 2021 to January 2022, relative to the same period last year)



Source: Tourism New Zealand, Data Ventures, RBNZ estimates.

Note: The data are based on anonymised location information of mobile phone devices. A device outside its home area is captured as domestic travel. The home area is based on the most common night-time location over the previous 14 days. Devices with international SIM cards are excluded from domestic travel.

Omicron spread to weigh on household and business spending in the near term

The accelerating spread of the Omicron variant is expected to weigh on household and business spending in the first half of this year. This reflects greater uncertainty, some hesitancy to go out and spend in places like restaurants and bars, and more workers off sick or needing to self-isolate and/or care for family. The economic impacts of COVID-19 becoming widespread in the community depend on the frequency with which regions face tighter restrictions and how households and businesses respond to developments, as discussed in the November *Statement*.

Economic activity is expected to recover in the latter part of 2022, as New Zealanders adapt to widespread COVID-19 and border restrictions are gradually eased. Household consumption is assumed to be supported by high employment and people spending some of the money saved during lockdowns. Business investment is assumed to be supported by high prices for our key goods exports and ongoing capacity pressures. The recently announced timing of a gradual freeing up of the border is assumed to see a slow recovery in international visitors towards the end of 2022. However, the number of visitors is expected to remain below pre-COVID-19 levels for several years.

Financial conditions have tightened only slightly this year. This follows a tightening of conditions in the lead-up to the November *Statement*. Aside from the recent depreciation of the New Zealand dollar trade-weighted index (TWI), New Zealand's financial conditions as experienced by most households and businesses have been relatively unaffected by the recent increase in volatility in global markets (see chapters 3 and 4.1). Alongside elevated export prices, the lower New Zealand dollar will add further support to already-high export incomes. Overall, monetary conditions are still supporting the economy but financial conditions are expected to tighten as the OCR is increased, weighing on gross domestic product (GDP) growth.

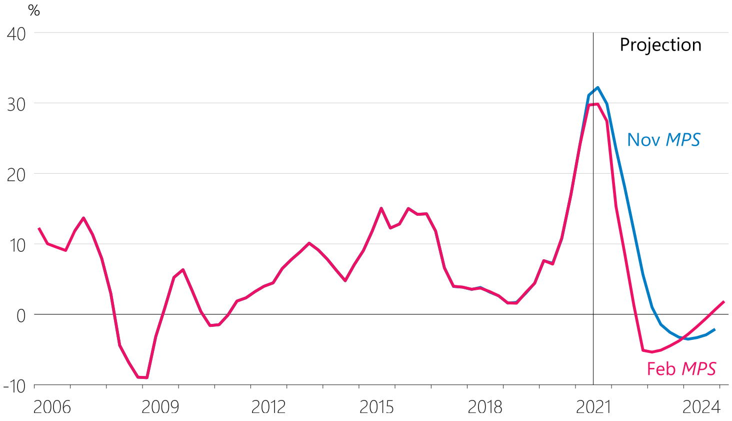
House price inflation shows early signs of easing, but residential construction is expected to remain strong

Strong house price inflation since 2020 has supported household spending, particularly on long-lasting goods. House prices have been expected to decline moderately towards more sustainable levels since the August 2021 *Statement*. However, the magnitude and timing of house price falls have always been uncertain. Nationwide house prices fell in December and January. Higher mortgage interest rates, policy changes related to investors and tighter credit lending standards are some of the key factors weighing on housing demand.

Figure 2.5

House price inflation

(annual)

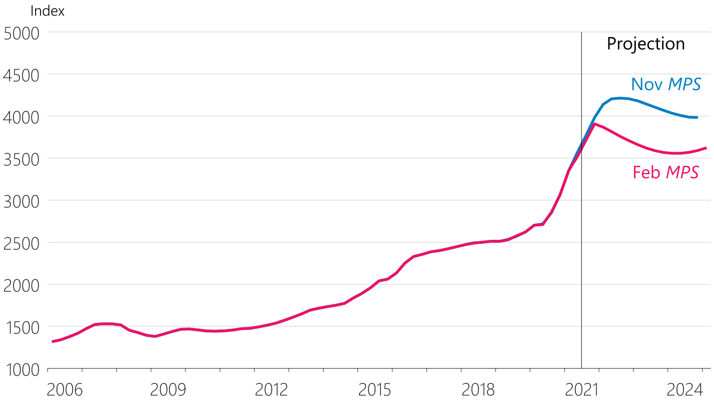


Source: CoreLogic, RBNZ estimates.

Figure 2.6

House prices

(nominal)



Source: CoreLogic, RBNZ estimates.

Our central forecast is for annual house price inflation to slow over the coming year, before declining moderately (figure 2.5). This results in the level of house prices declining about 9 percent from the end of 2021 to mid-2024 (figure 2.6). The assumed slowdown in prices also reflects a significant increase in supply of new homes at a time when there is near-zero net migration. Nationwide residential building consents are at record high levels, and residential construction is assumed to remain high for at least the next few years.

Labour market tightness continues, despite COVID-19-related disruption

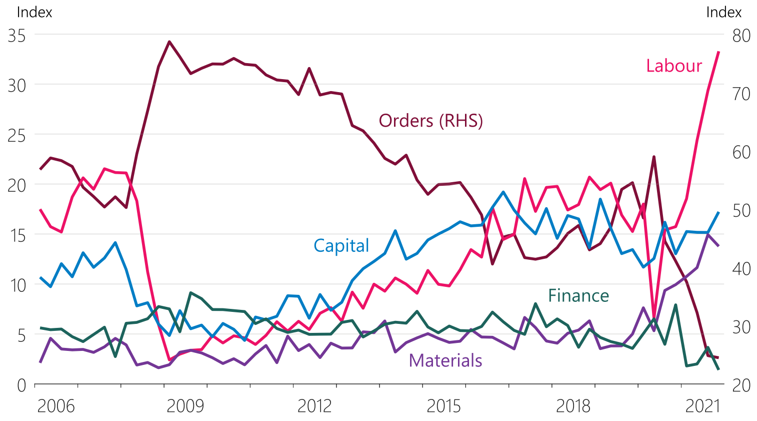
Pressure on available labour and capital resources remains tight. Strong demand for labour has been partially unmet because of already low unemployment within New Zealand and ongoing international border restrictions, limiting the arrival of migrant workers. More firms are reporting labour as the factor most limiting production (figure 2.7), and the reported difficulty in finding both skilled and unskilled labour remains near record highs.

Despite recent volatility in economic activity due to COVID-19-related restrictions, the unemployment rate declined to 3.2 percent – its lowest-ever recorded level – in the December 2021 quarter (figure 2.8). Strong demand for labour has encouraged high levels of participation in the workforce. Labour shortages and fiscal support measures have seen businesses retain workers even through periods of lower than normal activity. The unemployment rate has fallen across most age and ethnic groups, including those most sensitive to economic changes. This points to the broad-based nature of labour demand.

Figure 2.7

QSBO factor most limiting production

(seasonally adjusted)

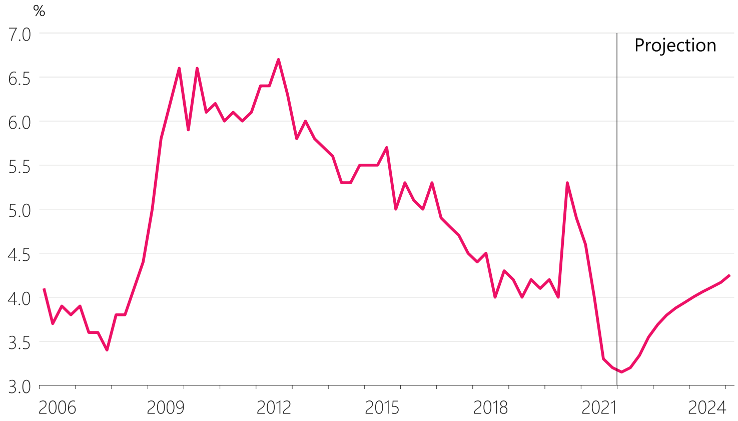


Source: NZIER, RBNZ estimates.

Figure 2.8

Unemployment rate

(seasonally adjusted)

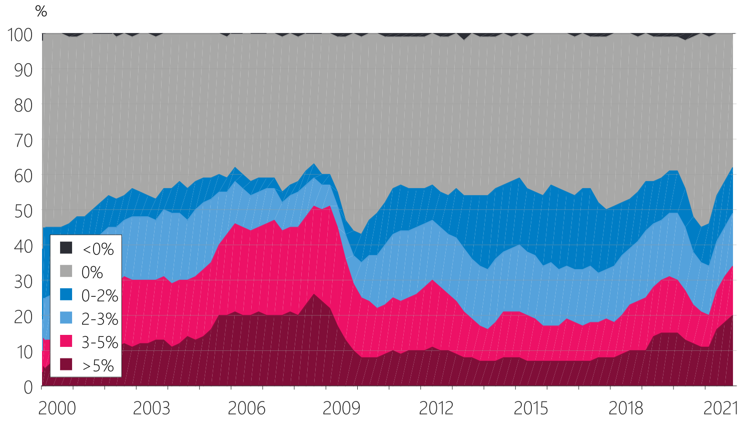


Source: Stats NZ, RBNZ estimates.

Figure 2.9

Distribution of annual wage increases

(labour cost index, all sectors combined, salary and ordinary time wage rates)



Source: Stats NZ.

Significant near-term disruption to the labour market is expected to result from COVID-19 becoming more widespread in the community. Absenteeism is expected to increase sharply due to illness, the need to self-isolate or the need to look after unwell family members. This will weigh on economic output. International experience indicates that this increase in absenteeism will be sharp but relatively short-lived. Given recent difficulties in finding labour, businesses are expected to smooth through any near-term weakness in demand by cutting hours rather than employment. However, there are risks to both sides of this assumption.

Wage growth increasing, but lagging inflation

Consistent with the tightness in the labour market, wage growth has been rising steadily. Increases in wage growth have been relatively broad-based across the economy. However, agriculture and goods-producing industries that are more heavily reliant on international labour or have the strongest ongoing demand are experiencing more sustained wage growth. Measures that intend to capture same-job wage growth are more muted than broader measures that also capture movement between jobs and changes in productivity. Tight labour market conditions have encouraged movements between jobs and promotions with the same employer in order to secure higher pay. While nominal wage growth has been increasing, it has been outstripped by higher CPI inflation to date. The share of workers receiving wage increases greater than five percent has been increasing in recent quarters, but the share of wages increasing between three and five percent remains relatively low (figure 2.9).

Employment is above its maximum sustainable level

Employment is currently assumed to be above its maximum sustainable level, as reflected in a wide range of indicators (figure 2.10). However, labour market tightness is assumed to peak in the first half of 2022. High frequency jobs data suggest that employment growth is starting to slow and higher interest rates are expected to reduce demand over the medium term. More international workers are expected to arrive during 2022 as border restrictions are gradually eased. Net inward migration is expected to increase gradually towards its 20-year average over coming years, depending on decisions related to any changes to immigration policy currently being reviewed.

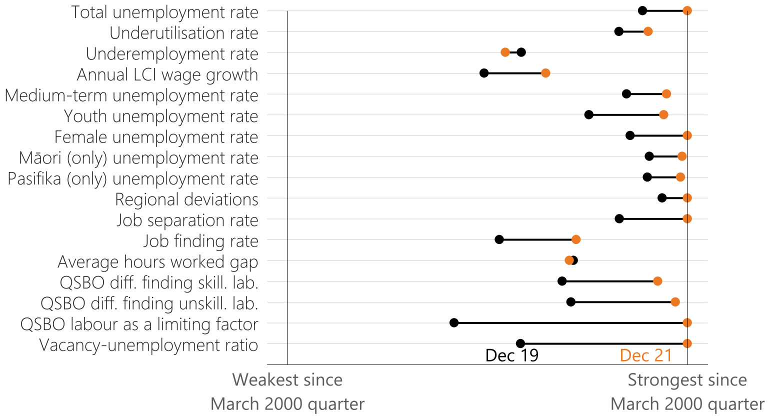
Inflation has increased further, reflecting global and domestic factors

Higher wage growth, pressure on available domestic resources, disruptions to global supply chains and increases in global prices for our imports have all contributed to annual consumer price inflation increasing to 5.9 percent in the December 2021 quarter (figure 2.11). This was slightly more than the 5.7 percent expected in the November *Statement*.

Annual inflation for goods and services exposed to international competition – also known as tradables inflation – increased to 6.9 percent in the December 2021 quarter. While shortages of imported consumer goods and shipping costs are pushing prices higher, petrol prices have been the largest contributor to tradables inflation. Prices for crude oil have increased at their fastest pace since the early 2000s as the restart in global demand met constrained supply, especially from OPEC countries. Fuel prices accounted for almost 45 percent of annual tradables inflation during 2021 (figure A1, Box A) and are likely to increase further in the short term (figure 2.12).

Figure 2.10

MSE indicator suite

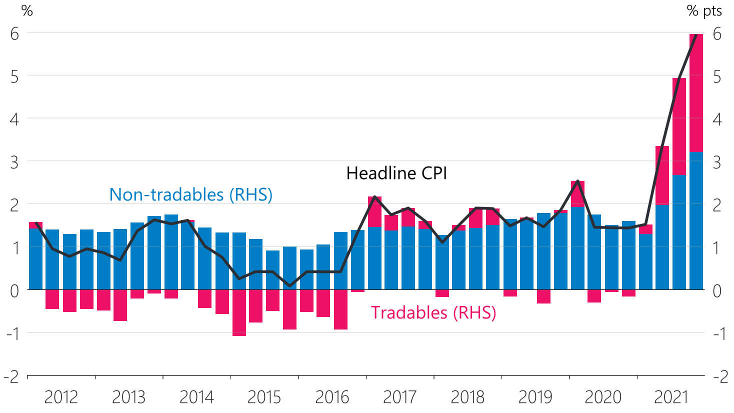


Source: NZIER, Stats NZ, MBIE, ANZ, RBNZ estimates.

Note: The Reserve Bank uses a range of indicators when assessing MSE and regards the December 2019 quarter as a period when this selection of indicators pointed to employment being at MSE. However, current outturns should not be directly compared to 2019Q4 as the level of MSE is likely lower (discussed further in the August 2021 *Statement*). The vertical lines on the left-hand and right-hand sides represent the lowest and highest data outcomes since 2000, respectively. For example, an orange dot to the right of a black dot means that the latest data outcome was stronger than in the December 2019 quarter.

Figure 2.11

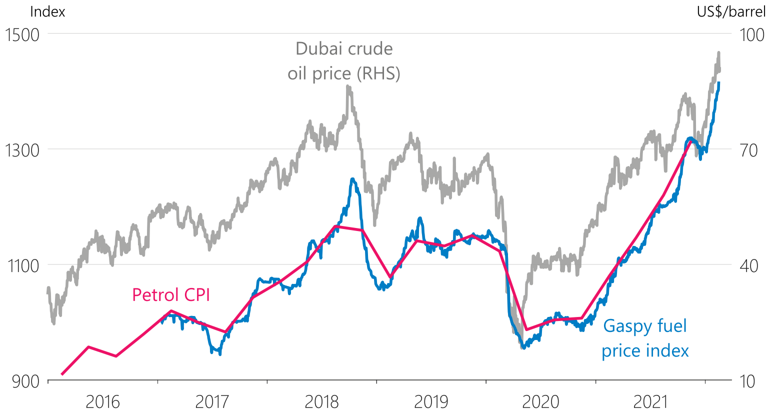
Contributions to annual CPI inflation



Source: Stats NZ.

Figure 2.12

Petrol and Dubai oil prices



Source: Datamine – Gaspy data, Stats NZ, Reuters, RBNZ estimates.

Note: Gaspy fuel prices are indexed to the petrol CPI level in the December 2019 quarter.

Annual domestic or non-tradables inflation – which captures goods and services not exposed to international competition – has also been strong, increasing 5.3 percent in the December 2021 quarter. Continued acceleration in the prices of goods related to the housing sector has accounted for much of the recent increase (figure A2, Box A). Housing construction costs have increased at their fastest pace since the late 1980s, reflecting strong demand and labour and materials shortages. However, measures of core inflation have increased and inflationary pressures appear to be becoming more broad-based (discussed further in Box A).

The recent increase in consumer price inflation has also led to increases in inflation expectations, particularly at shorter-term horizons. Elevated near-term inflation expectations are expected to contribute to higher inflationary pressures in the short term. Expectations at longer horizons have remained anchored near the 2 percent midpoint of the target range.

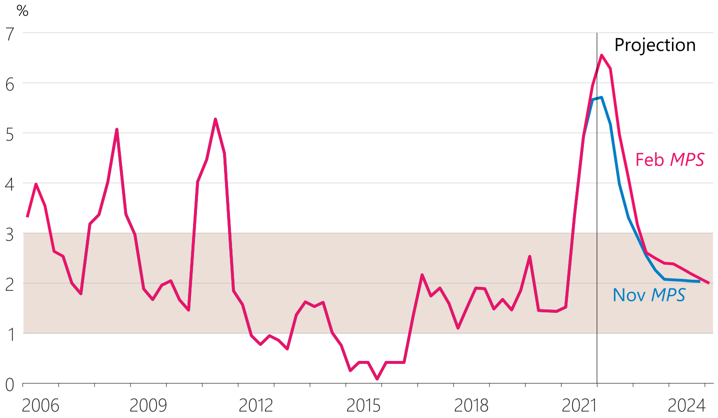
CPI inflation is assumed to stay elevated, peaking in annual terms in the March 2022 quarter, due to ongoing capacity pressures and high global prices for our imports. The outlook for tighter monetary policy in some of our key trading partners is placing downward pressure on the New Zealand dollar exchange rate (see chapters 3 and 4.1). This will also place upward pressure on imported inflation.

Annual CPI inflation is assumed to ease gradually towards the 2 percent target midpoint over the medium term. This reflects tightening monetary policy reducing demand and leading to less pressure on available resources, recent spikes in petrol prices falling out of the annual calculation, and supply-chain pressures at least partially unwinding.

Figure 2.13

CPI inflation

(annual)



Source: Stats NZ, RBNZ estimates.

Box A

How broad-based is inflation?

Annual CPI inflation hit a three-decade high at 5.9 percent in the December 2021 quarter, bringing it well above the MPC's *Remit* target band of 1 to 3 percent.

To some extent, the recent increase in inflation has been driven by global developments that have caused sharp price increases for some commodities and imported goods. In particular, fast-rising oil prices have caused petrol prices to increase significantly, pushing annual tradables inflation to a multi-decade high of 6.9 percent in the December 2021 quarter (figure A1). Annual petrol price inflation reached 30.5 percent in the last quarter. While strong price movements up and down in petrol prices are not unusual, this degree of inflation was last seen in 2008.

Tradables inflation has also become more broad-based, with prices for tradable food and other tradable components having steadily increased in the past year. Significant government and monetary support globally has helped to avoid prolonged negative impacts on demand from the COVID-19 pandemic. However, this robust demand has not been met with sufficient global supply due to continued COVID-19 outbreaks, related restrictions and shipping disruptions. These factors have created an inflationary environment globally (see chapter 4.1). As New Zealand is a small open economy, we are directly impacted by these developments.

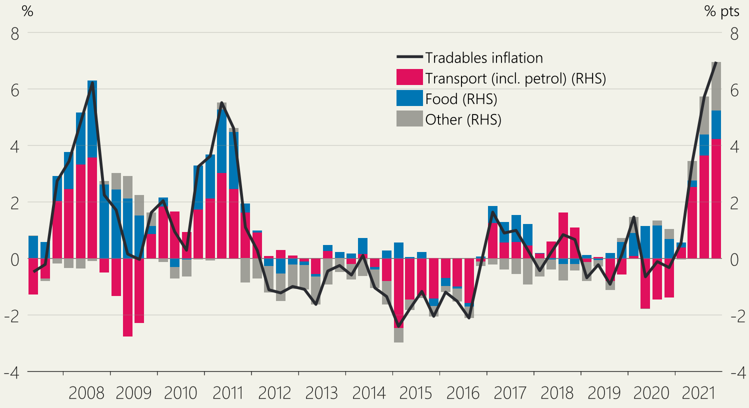
While global factors account for much of the recent high inflation, domestic factors are also playing a large role. Economic activity in New Zealand has remained relatively robust since the outset of the COVID-19 pandemic, due to fiscal policy and monetary policy support, household and business adaptability, and prolonged periods of relatively low restrictions by global standards.

Demand for housing has been particularly robust, as seen in record high consent numbers. Strong housing demand has contributed to significantly higher inflation of construction prices and prices of other housing-related components, contributing to an acceleration of annual non-tradables inflation to 5.3 percent in the December 2021 quarter (figure A2).

Figure A1

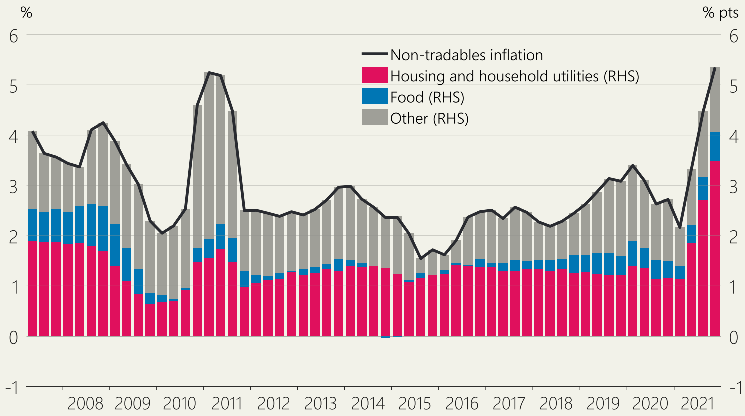
Contribution to tradables inflation

(annual)



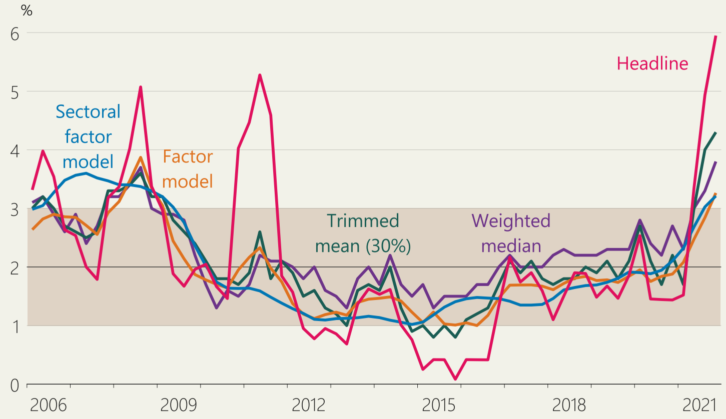
Source: Stats NZ, RBNZ estimates.

Figure A2
Contribution to non-tradables inflation
(annual)



Source: Stats NZ, RBNZ estimates.

Figure A3
Core inflation measures
(annual)



Source: Stats NZ, RBNZ.

Annual inflation for the construction of new houses has increased to 15.7 percent. This increase reflects both strong housing demand and the higher costs of imported building materials. While smaller in contribution to non-tradables inflation, annual inflation for the price of renting a residential property has also increased materially, to 3.8 percent.

Housing-related components make up almost 50 percent of non-tradables inflation. Higher inflation in these components in addition to stronger price increases for non-tradable food in recent quarters suggests that non-tradables inflation is also becoming more broad-based.

More widespread inflation is also reflected in core inflation measures. Core inflation measures aim to capture underlying, more long-term inflationary pressures by removing price movements that fluctuate materially in the short term. All of the main core inflation measures that the Reserve Bank considers are now above the target band (figure A3).

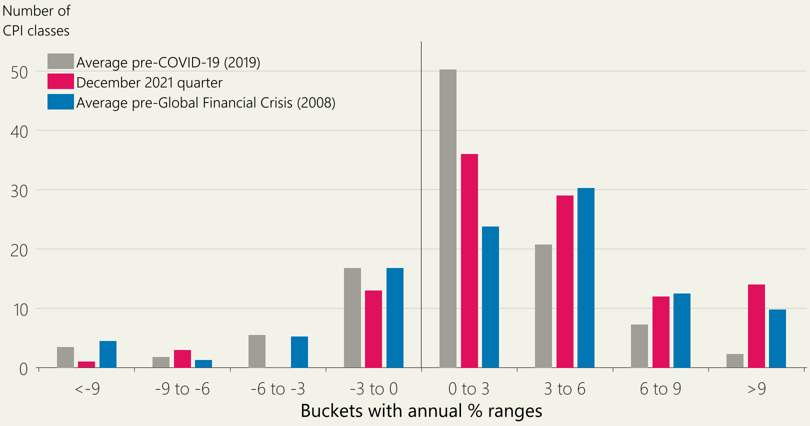
Another way of examining the extent to which inflation is becoming increasingly widespread is to look at how many of the different CPI classes have seen higher or lower annual changes than usual. There are more than 100 CPI classes, each capturing prices for a defined range of goods and services. The stronger inflation data in the December 2021 quarter has been accounted for by more CPI classes with positive and larger annual changes compared to pre-COVID-19 times (figure A4). This means that inflation has not just been driven by some one-off price increases for a few goods and services, but that inflation has become more broad-based. The distribution of the CPI classes is currently very similar to the average distribution in 2008, just prior to the Global Financial Crisis.

While not directly captured in the CPI, annual wage inflation has also increased significantly to 2.8 percent in the December 2021 quarter.[1] Although this is below current CPI inflation, the increase is still reflective of high capacity pressures in the economy. Labour is scarce, so businesses have to offer higher wages to attract and retain staff. At the same time, employees may ask for higher wage increases to cover increased living costs. Consequently, businesses face higher labour costs and try to pass these on to consumers by increasing their selling prices. This process is a sign of CPI inflation becoming more broad-based.

Overall, a mixture of strong domestic demand, scarce labour and high commodity and import prices has resulted in a more inflationary environment in 2021. Although some factors driving the current spike in inflation are likely to settle in the coming year (see chapter 5), the central projection still implies that the OCR will need to increase further to reduce inflationary pressures and return inflation to the 2 percent midpoint of the target band.

Figure A4

Distribution of annual inflation rate by class



Source: Stats NZ.

[1] The adjusted labour cost index (LCI) for the private sector (all salary and wage rates) is used as the main indicator for wage inflation. The adjusted LCI measures wage inflation for the same job and quantity of work.

Monetary policy outlook

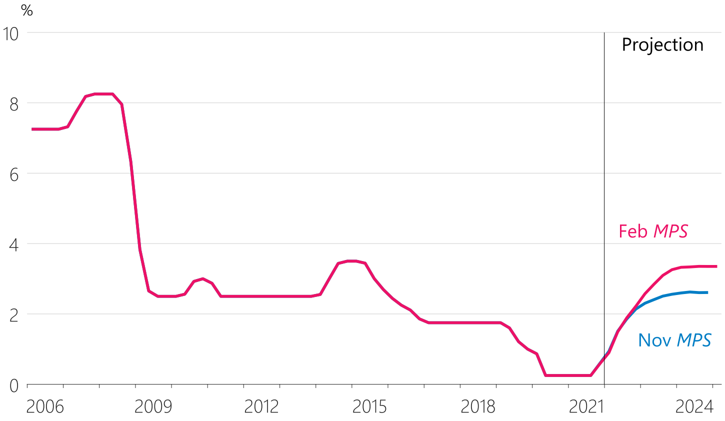
While the OCR has been increased in recent quarters, it remains below the Reserve Bank's estimate of a nominal neutral interest rate of about 2 percent. Given the current and expected strength in the labour market, and heightened inflationary pressure from global and domestic sources, our central projection implies that the OCR should be increased in order for the MPC to meet its economic objectives (figure 2.14).

The peak of the OCR over the projection horizon is higher than assumed in the November *Statement* due to more persistent inflationary pressures, as seen in measures of core inflation and higher inflation expectations. These additional pressures are assumed to more than offset the risk posed by the spread of the Omicron variant, in part because the effects of COVID-19 becoming widespread – albeit not Omicron specifically – were already captured in the November *Statement*. This projection for the OCR is conditional on the economy evolving in line with the assumptions outlined in this chapter and chapter 5.

Figure 2.14

OCR

(quarterly average)



Source: RBNZ estimates.

In November 2021, the MPC communicated that it intended to gradually manage down bond holdings from the Large Scale Asset Purchase (LSAP) programme introduced in 2020. Box B presents an overview of the principles that will be used by the MPC when deciding how to reduce bond holdings. As the holdings are assessed as providing only a small amount of ongoing stimulus, their reduction is not assumed to have a material impact on the outlook for the OCR.

Box B

The Monetary Policy Committee's framework for the Large Scale Asset Purchase programme

The MPC sets monetary policy in pursuit of its economic objectives: to achieve and maintain stability in the general level of prices over the medium term; and to support maximum sustainable employment. Guided by its *Risk Appetite Statement* and *Principles governing monetary policy tools*, the MPC chooses the combination and settings of monetary policy tools necessary to achieve the amount of monetary stimulus required to achieve its objectives.

In March 2020, the MPC launched a Large Scale Asset Purchase (LSAP) programme as part of its broad monetary policy response to the COVID-19 pandemic. The MPC stopped these purchases in July 2021.

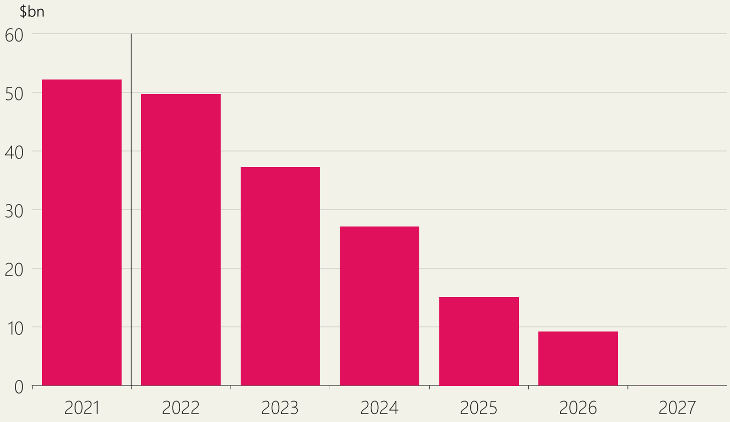
The MPC's assessment of the LSAP tool against its principles is noted in table 2.1. When the MPC launched the LSAP programme, its principles led to the adoption of a front-loaded and dynamic approach to asset purchases. This approach helped deliver stimulus effectively and efficiently when needed, and stabilised important financial market channels of monetary policy by providing the financial system with additional liquidity.

When applying its principles in the current environment, the MPC has decided to adjust monetary stimulus primarily using the OCR. LSAP bond holdings will not be dynamically used to adjust monetary stimulus. Sales of bonds in addition to maturities will be done gradually and predictably to maintain market functioning and avoid unnecessary volatility in interest rates. The MPC acknowledges that bond yields may adjust as the bond holdings are reduced, and is comfortable that any changes will be orderly and not undermine the desired stance of monetary policy. A gradual and predictable reduction in bond holdings is also consistent with how other central banks intend to reduce their asset holdings. The expected path of the two LSAP portfolios are presented in figures B1 and B2.

Figure B1

Expected LSAP portfolio of New Zealand government bonds

(holdings as at calendar year end)



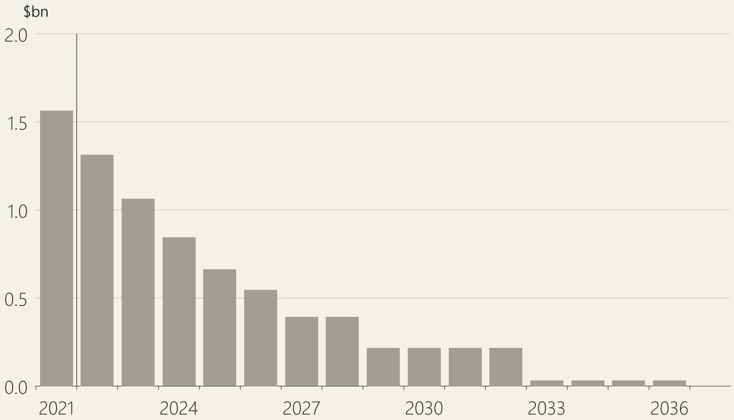
Source: RBNZ estimates.

Note: Includes nominal and inflation-indexed New Zealand government bonds. Sales are in addition to bond maturities and are expected to begin in mid-2022.

Figure B2

Expected LSAP portfolio of New Zealand Local Government Funding Agency bonds

(holdings as at calendar year end)



Source: RBNZ estimates.

Table 2.1

The MPC's approach to LSAP against its principles for monetary policy tools

	Adding stimulus (buying bonds)	**Removing stimulus (bonds maturing and selling bonds)**
Effectiveness	Objective of purchases is to lower and flatten the yield curve; purchases front-loaded and adjusted dynamically	Objectives of maturities and sales are to have minimal impact on monetary stimulus; undertaken gradually and predictably
Efficiency	Purchases and sales to be undertaken while minimising unnecessary volatility and distortions in financial markets	
	Bonds purchased in the secondary market	Bonds sold to New Zealand Debt Management (NZDM) or allowed to mature with no reinvestments
Financial stability	Purchases help to restore market functioning and provide liquidity	Maturities and sales undertaken gradually and predictably to maintain market functioning
Public balance sheet risk	The MPC is guided by the Reserve Bank's internal financial risk appetite, institutional arrangements and indemnities from the Crown. As required under the indemnity, throughout the programme the Reserve Bank has coordinated with NZDM to ensure that the objectives of both the MPC and NZDM can be achieved.	
Operational readiness	The Reserve Bank is operationally ready to undertake both bond purchases and sales on behalf of the MPC, and undertake necessary market operations to manage liquidity in the financial system.	

Financial conditions

CHAPTER 03

Dart River: Glenorchy, New Zealand

CHAPTER 3
Financial conditions

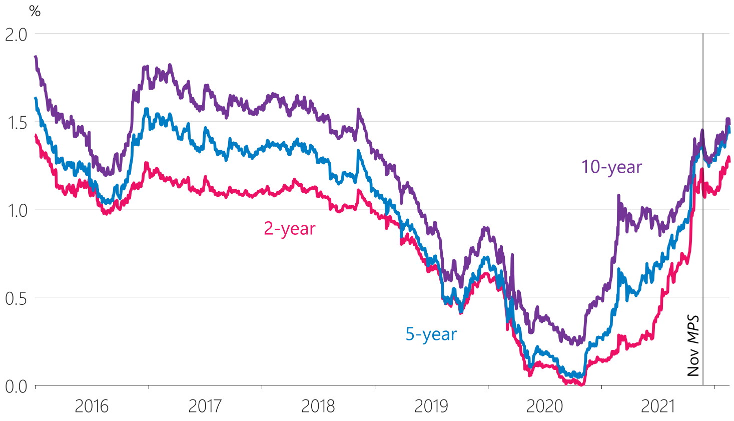
The Reserve Bank's monetary policy tools affect economic activity by influencing conditions in financial markets, including the interest rates at which households and businesses save and borrow, plus the exchange rate. After providing strong monetary support as the pandemic broke out, financial conditions gradually tightened during the latter half of 2021. However, financial conditions are still relatively accommodative.

Changes in financial conditions have been mixed since the November *Statement*

Financial conditions tightened materially in the lead-up to the November *Statement*. This was in response to improving economic data and a repricing of inflation risks, both in New Zealand and globally. Since then, movements in domestic financial conditions have been mixed, but conditions have remained broadly unchanged overall. Wholesale interest rates, term deposit rates and mortgage rates have increased slightly, but the New Zealand dollar has fallen against other currencies.

New Zealand interest rate swap rates have risen slightly since the November *Statement* (figure 3.1). Domestic wholesale interest rates at terms most relevant to businesses and mortgage borrowers (2 to 10 years) increased substantially over the course of 2021, and are currently near five-year highs.

Figure 3.1
Interest rate swap rates



Source: Bloomberg.

Financial market expectations for the OCR, as measured by overnight indexed swap (OIS) pricing, show a 25-basis-point increase in the OCR at each scheduled meeting in 2022 (figure 3.2). These expectations are currently similar to what they were at the end of last year. However, the market now expects additional OCR increases to be necessary in 2023 and beyond.

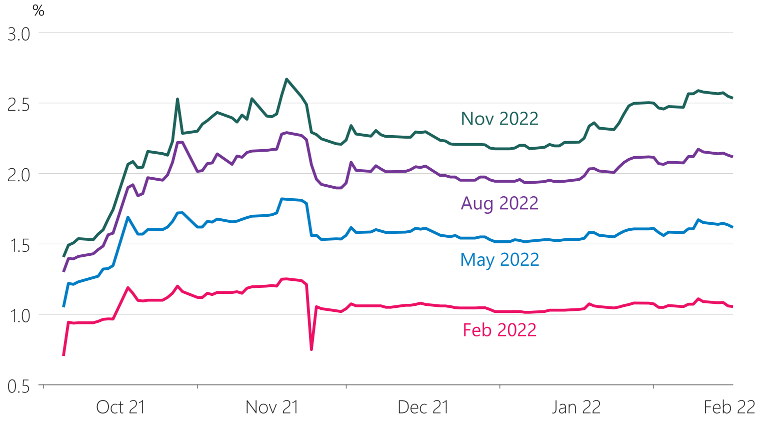
The New Zealand government bond (NZGB) market is functioning normally. The market has responded in an orderly way to the halt of the LSAP programme in July 2021 and the reduction in forecast bond issuance that NZDM announced in the Half-Year Economic and Fiscal Update 2021. Since November 2021, usage of the Reserve Bank's Bond Lending Facility (BLF), which provides market participants with access to NZGBs as a lender of last resort, has declined. Declining BLF usage implies NZGB supply is sufficient in the secondary market.

The New Zealand dollar has fallen as overseas central bank policy rate paths increase

Expectations for policy interest rates are increasing for New Zealand's trading partners (figure 3.3). Interest rate differentials between New Zealand and the US have fallen for terms greater than one year, due to growing expectations that the US Federal Reserve will tighten monetary policy faster than was expected in November.

Figure 3.2

Market expectations for the OCR

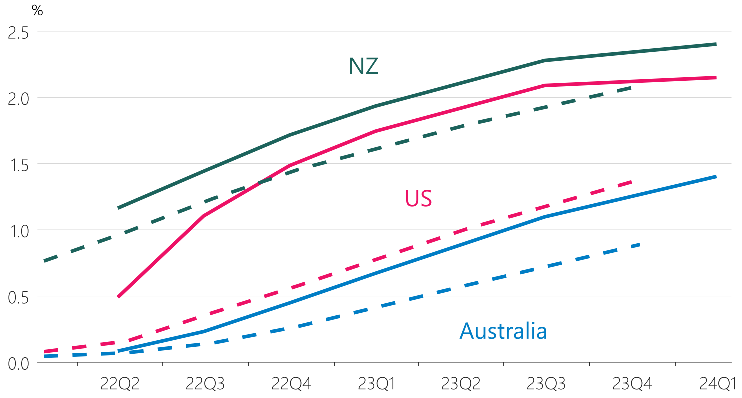


Source: Bloomberg.

Note: Each line represents the expectations of the level of the OCR at a given point in time in the future, as measured by overnight indexed swap pricing. For example, the Feb 2022 line shows expectations over time for what the OCR decision would be at the February 2022 *Statement*.

Figure 3.3

Market expectations for average central bank policy rates



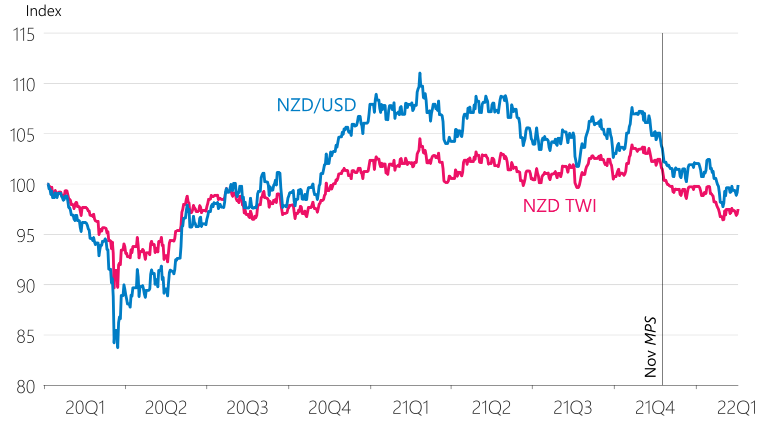
Source: Bloomberg.

Note: Solid lines are the overnight indexed swap rate pricing at 17 February 2022, representing the average expected future policy rates across time for each country. For example, the rate at the end of 2023 represents the expectation of the average policy rate between 17 February 2022 and the end of 2023. Dotted lines represent the same expectations from the date of the November *Statement*.

Figure 3.4

New Zealand dollar exchange rates

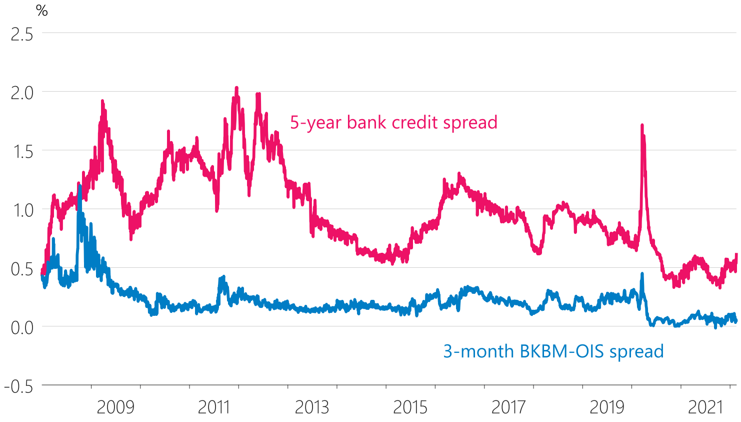
(3 January 2020 = 100)



Source: Reuters, RBNZ.

Figure 3.5

Bank funding costs



Source: Bloomberg, RBNZ estimates.

Note: Credit spreads are the differences between secondary market bond yields and the interest rate swap curve. The bond yields used for the five-year measure are the averages of bonds with a remaining maturity of five years issued in New Zealand dollars from ANZ, ASB, BNZ and Westpac. A lower spread represents a lower implied borrowing cost.

The New Zealand dollar measured against a basket of trading partner currencies, the TWI, has depreciated around 4 percent since the November *Statement* (figure 3.4). Expectations of relatively higher interest rates abroad, alongside greater investor concern about risk, have seen the TWI fall in the past three months, outweighing the positive influence of rising commodity prices on the New Zealand dollar.

Uncertainty about when and how fast central banks will raise interest rates has contributed to increased volatility in global financial markets recently (see chapter 4.1). New Zealand financial conditions as experienced by most households and businesses have been broadly unaffected by this volatility to date. However, the volatility is likely to have placed additional downward pressure on the New Zealand dollar TWI and New Zealand equity market prices.

Bank funding conditions are still accommodative

Measures of wholesale bank funding costs have increased since the November *Statement*, but remain accommodative from a historical perspective. Short-term bank funding remains very cheap, as evidenced by the three-month BKBM-OIS spread (which captures the difference between the Bank Bill Benchmark rate and the OIS rate) (figure 3.5). Longer-term bank funding costs have increased slightly but remain close to, or below, their 2019 levels. This implies that wholesale funding is still relatively cheap for banks. Recent volatility in overseas markets has not yet had a material impact on New Zealand banks' ability to source wholesale funding.

Mortgage rate increases continue to be passed through to consumers

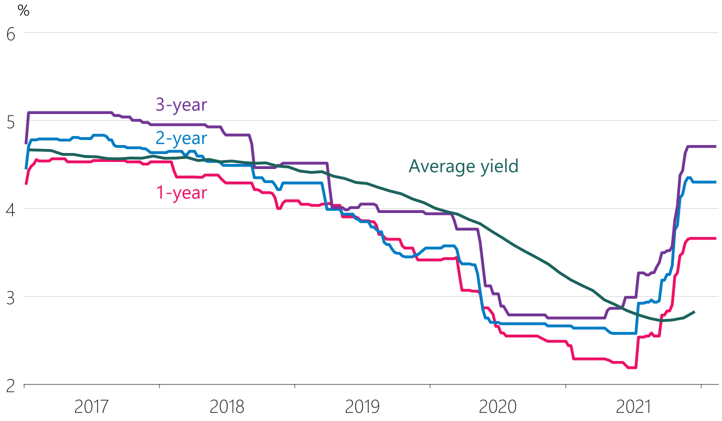
Relatively small upward movements in mortgage rates since November 2021 suggest most of the pass-through of higher wholesale rates happened before the November *Statement*. The two-year interest rate swap rate increased nearly 100 basis points between the October *Review* and the November *Statement*, and this move was reflected in mortgage rates before the November announcement.

Increases in the OCR will be passed through to the economy further as more fixed-term mortgages come due to reprice, and will do so at higher rates (figure 3.6). Over half of total mortgage debt is due for repricing during 2022. Additionally, in the past few months more borrowers have been fixing at terms longer than one year. This means they will face even higher interest rates than if they re-fixed at the same term, as the two-year and three-year rates have increased by around 20-30 basis points more than other shorter-term rates since October 2021. Although mortgage rates are rising, they are still low relative to their longer-term history.

Mortgage credit growth remains high, but slowed slightly at the end of 2021 (figure 3.7). This slowing was due to rising mortgage rates, tighter loan-to-value ratio (LVR) requirements, and changes in responsible lending practices under the Credit Contracts and Consumer Finance Act 2003 (CCCFA).[2] It is unclear at this stage whether the CCCFA changes will have persistent and widespread impacts on mortgage lending in light of other policies and factors (such as higher interest rates). Annual business lending growth has increased to around pre-pandemic levels (figure 3.8). The average interest rate on existing business lending is still low relative to before the pandemic, but is increasing as the recent monetary policy tightening passes through.

Figure 3.6

Mortgage rates and average interest rate on outstanding mortgages



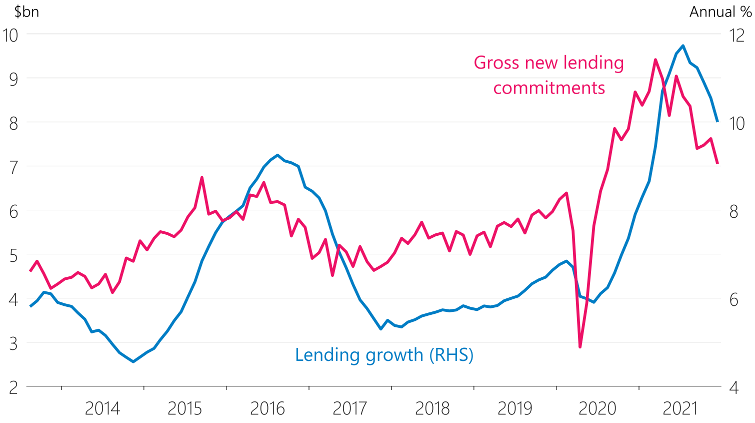
Source: interest.co.nz, RBNZ.

Note: The rate shown for each term is the average of the latest 'special' fixed-term rates on offer from ANZ, ASB, BNZ and Westpac.

Figure 3.7

Residential mortgage lending

(registered banks)

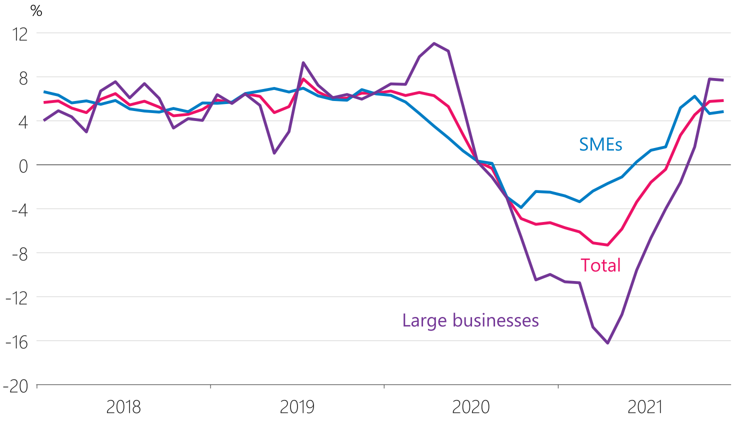


Source: RBNZ.

Figure 3.8

Business lending growth

(annual)



Source: RBNZ.

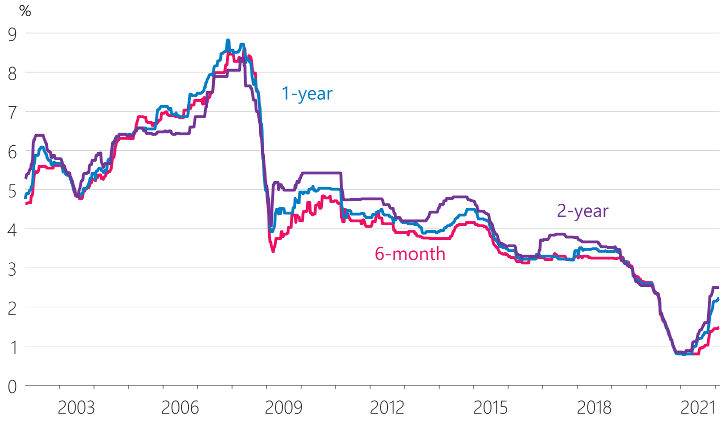
[2] Changes to the CCCFA came into force in December 2021 and require lenders to perform more extensive checks of borrowers' incomes and expenses when assessing the ability of borrowers to service the loan.

Term deposit volumes and rates are increasing

Deposit growth remained strong in the last quarter of 2021. There had been more movements of deposits into term accounts after term deposit balances decreased over 2020, and were relatively flat through 2021. Term deposit interest rates fell to historical lows in 2020 (figure 3.9), in part due to monetary policy actions including the Funding for Lending Programme. Term deposit rates have increased in the past few months as the MPC has tightened monetary policy.

Figure 3.9

Term deposit rates



Source: interest.co.nz.

Note: The rate shown for each term is the average of the latest term deposit rates on offer from ANZ, ASB, BNZ and Westpac.

Special topics

CHAPTER 04

Coromandel Peninsula, New Zealand.

CHAPTER 4

Special topics

Before each *Statement*, the MPC is provided with analysis of some topical issues.

Topics for the February *Statement* included:

1. International developments and risks.
2. Inflation expectations.

International developments and risks

As New Zealand is a small open economy, global economic and financial market conditions can have a significant influence on domestic activity and inflation. Global inflationary pressures have increased since the November *Statement*. There is a risk that New Zealand will see stronger imported inflation if these pressures persist for longer than currently assumed.

The global recovery continues, but the pace of growth is expected to moderate

The global recovery in 2021 was robust, with all New Zealand's major trading partners now at or above pre-pandemic levels of GDP. However, the pace of trading partner growth is expected to moderate this year. This moderation reflects the spread of the Omicron variant and growth returning to a more sustainable pace after recovering sharply from the COVID-19-related restrictions. It also reflects downward revisions for growth in the US and China for idiosyncratic reasons.

In the US, the weaker growth outlook is being driven by expectations of tighter fiscal and monetary policies than previously anticipated, and ongoing supply shortages. In China, the continuation of strict COVID-19-related policy, financial stress in the real estate sector, increasing regulation and slowing consumer demand are all contributing to a weaker outlook.

Since the November *Statement*, the emergence and spread of the highly transmissible Omicron variant has increased uncertainty around the global economic outlook. While Omicron appears to be more transmissible than previous variants, evidence suggests that the risk of severe disease is lower, limiting the impacts on health and the need for mobility restrictions. This suggests that the disruptive impacts on global economic activity may be relatively short-lived. However, the significant increase in case numbers will impact labour supply in the near term as people become unable to work due to illness or self-isolation. The spread of the Omicron variant will likely add further disruption to global supply chains. Both of these factors will add to near-term inflationary pressures.

Inflationary pressures are broadening and labour markets continue to tighten

Global inflation continues to increase (figure 4.1). This reflects both increases in energy prices and the impacts of disruptions in global supply chains in light of strong goods demand. However, inflationary pressures vary between countries. Higher inflation in the US has reflected strong, broad-based demand. In the euro area, price pressures are showing less evidence of broadening and have been largely driven by higher energy prices. In Australia and China, consumer demand pressures have been weaker, which has translated into lower inflationary pressure than elsewhere.

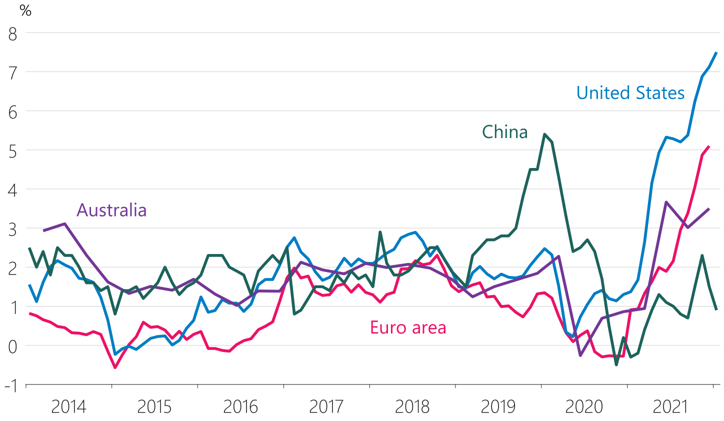
Global inflationary pressures are expected to ease over 2022. Fiscal and monetary policies, which have supported a recovery in demand since the beginning of the pandemic, are expected to be unwound this year. Fewer COVID-19-related restrictions means that consumer spending is expected to rebalance from goods to services, easing pressure on the goods market. Outlooks for supply-side disruptions being resolved range from a few months to several years.

Labour markets continue to tighten globally and wage inflation is increasing in some countries. In the US, key labour market indicators suggest that conditions are now tighter than prior to the pandemic. This is feeding through to higher wage inflation. In both the euro area and Australia, labour market indicators are now broadly in line with pre-pandemic levels. However, this is not yet resulting in significantly higher wage inflation.

Figure 4.1

Headline CPI inflation

(annual)



Source: Haver Analytics.

Monetary policy has responded to global inflationary pressures

There have been varied policy responses from central banks to rising global inflationary pressures. This reflects differences in economic starting points and central banks' inflation targets and policy strategies (table 4.1).

Table 4.1

International snapshot

Central bank	Central bank inflation target	Unemployment rate (%)	2022 output gap as % of potential GDP	Targeted inflation measure (% YoY)
US Federal Reserve	Inflation averages 2% over time; employment objective	4.0	3.3	4.9
Bank of England	2% inflation target	4.1	-0.4	5.5
Reserve Bank of Australia	2–3% inflation target; employment objective	4.2	0.0	3.5
European Central Bank	Symmetric 2% inflation target	7.0	-0.6	5.1
Reserve Bank of New Zealand	1–3% inflation target; employment objective	3.2	1.3	5.9

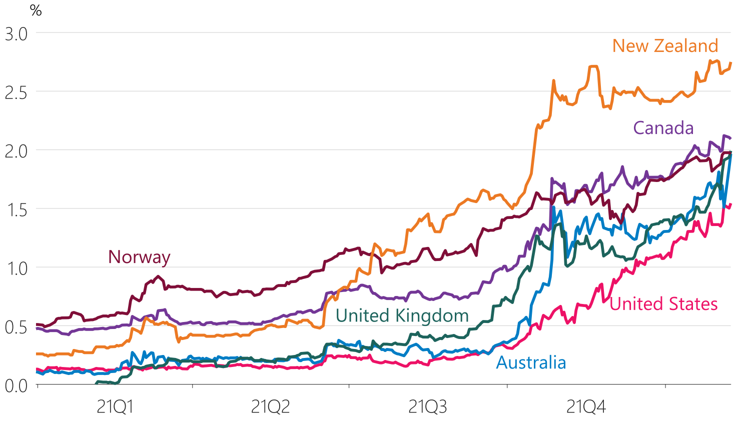
Source: Respective central banks and official statistical agencies, International Monetary Fund (IMF), Stats NZ, RBNZ estimates.

Note: Output gap projections are based on IMF estimates, except for New Zealand's, which is based on our current projection. All other data reflect the respective latest outturns.

Central banks such as the Norges Bank and the Bank of Korea began the process of removing monetary stimulus early, citing strong economic recoveries and progress toward their mandates. In response to tightening labour markets and broadening global inflationary pressures over recent months, this type of policy response has become more internationally widespread. Most major central banks are now priced to increase their policy rates earlier, and by more than expected at the time of the November *Statement* (figure 4.2). In addition, a number of central banks have recently ceased their asset purchase programmes, with some contemplating balance sheet reductions.

Figure 4.2

One-year forward one-month overnight-indexed swap rates

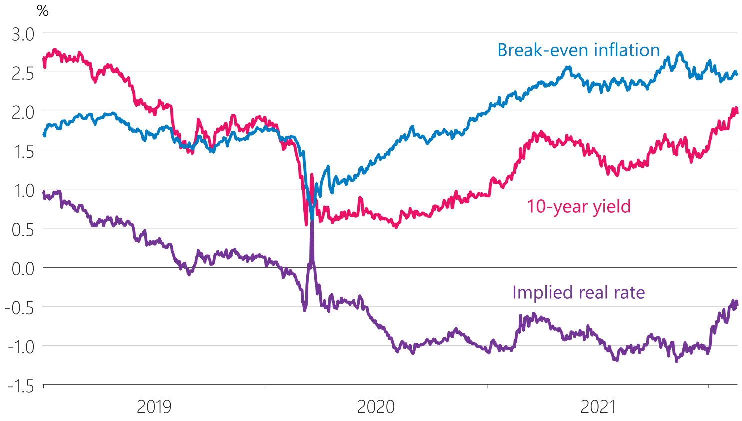


Source: Bloomberg.

Note: These rates represent where market participants expect central bank policy rates to be in one year.

Figure 4.3

US 10-year sovereign yield decomposition



Source: Bloomberg.

While inflation has recently increased in many countries, price pressures are more muted in some of New Zealand's key trading partners. For example, measures of headline and core CPI inflation in China remain low, and economic momentum has recently moderated. In response, the People's Bank of China has mildly loosened monetary policy over the past few months. Likewise, although inflation has increased in Australia and the Reserve Bank of Australia has halted bond purchases, it has assessed that it is too early to conclude that inflation is sustainably in its target range.

However, expectations of earlier monetary policy tightening by many central banks, particularly the US Federal Reserve, have resulted in higher interest rates and increased volatility in global financial markets. The move higher in longer-term government bond yields has been driven by rising real long-term interest rates, with financial market measures of long-term inflation expectations broadly unchanged since the November *Statement* (figure 4.3). Relatively unchanged inflation expectations at very long horizons may reflect the expectations of higher interest rates to address inflationary pressures.

Risks to the global outlook and implications for New Zealand

Recently, New Zealand has benefited from a strong global recovery, elevated export commodity prices and accommodative global financial conditions. But economic, financial and geopolitical risks all have the potential to change the outlook.

There are risks in either direction as the global monetary tightening cycle resumes. Tightening in monetary policy is expected to dampen risky asset prices and demand in the global economy. If this happens too quickly it could lead to a significant slowdown in economic activity or a large decline in the value of risky assets. Rising global interest rates also pose a risk for emerging market economies that have significantly increased public debt in recent years. On the other hand, tightening monetary policy too slowly would increase the risk that higher inflation will raise inflation expectations, which would place upward pressure on both prices and wages, internationally.

Geopolitical tensions in Europe pose downside risks to global growth and upside risks to global inflation. An escalation of geopolitical tensions would likely lead to higher commodity prices, particularly for oil. Associated economic sanctions would likely dampen global economic activity and may lead to further disruptions to supply chains. This could further weigh on risk assets and tighten global financial conditions.

New Zealand does not have significant direct trade or financial links with Russia or Ukraine. However, in the near term, an escalation in tensions would impact New Zealand primarily through increased risk aversion in financial markets and higher international commodity prices, boosting inflation for our imported goods. If tensions were resolved more quickly than currently expected, this would pose a downside risk to global inflation given the recent moves in international energy prices.

A continuation of supply-chain disruptions would pose upside risks to global inflation this year. These could persist for longer if the impacts of the Omicron variant were larger or more persistent than currently expected. This could also delay the anticipated shift in spending from goods to services, making supply-chain disruptions worse. Importantly, a widespread Omicron outbreak in China, where COVID-19 cases have remained low for some time, would have a significant impact on the demand for New Zealand's goods exports, and on the global outlook more generally.

Higher-than-expected global inflation, due to a strong recovery in global demand and supply-chain disruptions, has put upward pressure on global prices for New Zealand's imports. As a result, tradables inflation has increased more than expected over recent quarters and is assumed to remain elevated before moderating as supply constraints ease. The recent depreciation of the TWI is assumed to contribute to the stronger outlook for tradables inflation, while also supporting export incomes. These assumptions have been incorporated into the central projection (see chapter 5). While there are risks in either direction, on balance there is currently a greater risk that higher global inflation will persist for longer. This increases the risk that high inflation will become embedded in New Zealand.

2 Inflation expectations

Inflation expectations refer to what businesses, financial market participants and households expect inflation to be in the future. Inflation expectations are important for monetary policy as they impact household and firm behaviour, indicate the credibility of the MPC's ability to meet its inflation objective, and influence the effective stance of monetary policy.

Expectations of future inflation can have a significant influence on current inflation. If businesses expect their input costs to increase in the future, they often choose to increase the prices of their goods and services now. This results in higher costs to consumers, who may require wage increases to offset the increased cost of living. In turn, this further increases input costs for businesses, putting more pressure on general price levels today. This process can create an ongoing price-wage feedback loop. Therefore expectations must be carefully monitored by the Reserve Bank when assessing inflationary pressure.

Inflation expectations are an indicator of the credibility of the MPC's policy strategy. If inflation expectations remain 'anchored' near the target midpoint of 2 percent, it indicates there is confidence that the communicated outlook for monetary policy will return inflation towards the target in the medium term. When expectations are anchored, it means that smaller changes in monetary policy are required to return inflation towards the target in the face of economic disruptions. This results in better economic outcomes through time.

In addition, inflation expectations influence the stance of monetary policy; that is, the extent that interest rates are acting to boost or dampen economic activity. Increases in expected inflation can put downward pressure on the *real* interest rates that households, businesses and investors perceive they face, once they adjust for their own expectations for inflation. Lower real rates boost economic activity. For instance, if households expect real returns on their savings to be lower, they may be willing to spend more today rather than save. This means that, at the same level of interest rates, there is more monetary stimulus in the economy if expectations of inflation rise. The opposite is also true. Therefore, monetary policy must take inflation expectations into account when setting nominal interest rates so that the policy has the desired effect on the economy.

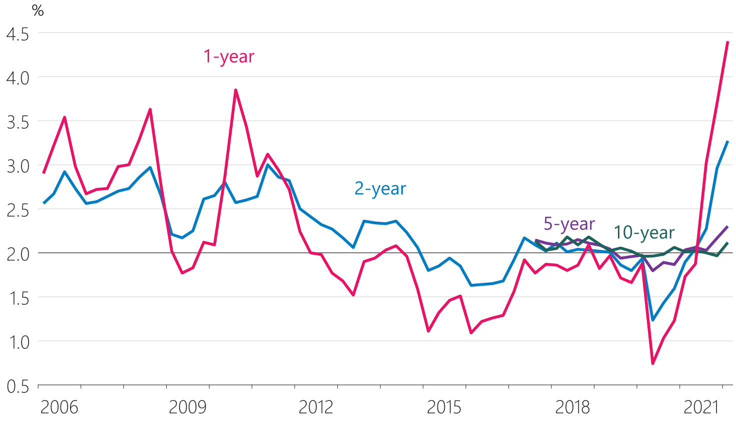
To monitor inflation expectations the Reserve Bank undertakes a survey of expectations each quarter, in the week following each CPI inflation data release. The survey is aimed at large businesses from different industries and financial institutions. Respondents are asked to record their expectations for CPI inflation in one, two, five and 10 years' time (figure 4.4). Additional sources, such as the ANZ Business Outlook survey and outlooks from Consensus Economics surveys of international economic forecasts, are used to provide insights on expectations of inflation.[3]

[3] The Reserve Bank does not currently tend to place much weight on market-based measures of inflation expectations. This is because they are influenced by other factors, such as changes in appetite for liquidity and insurance against the risk of lower or higher inflation in the future, and therefore do not provide a pure read of market participants' expectations. This is particularly the case in New Zealand, where the small size and depth of the inflation-indexed bond market has typically led to a higher liquidity premium than in other developed countries. That said, while the level of inflation implied by these measures may be difficult to interpret, changes in these measures can be informative.

Figure 4.4

Reserve Bank survey of expectations, inflation expectations

(annual)

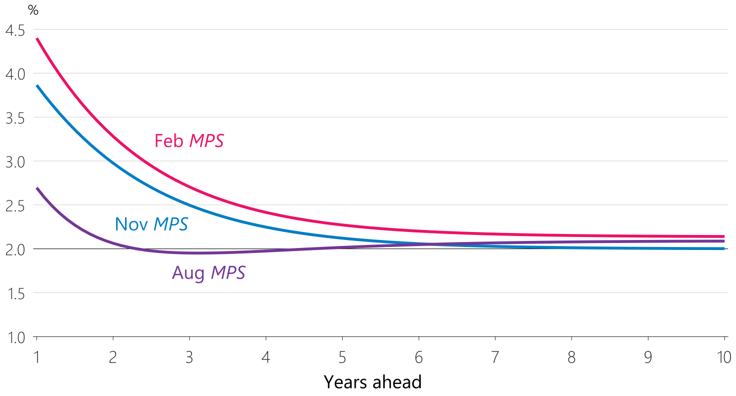


Source: RBNZ.

Figure 4.5

Inflation expectations curve

(annual)



Source: ANZ, RBNZ, Consensus Economics, RBNZ estimates.

Note: The November *Statement* curve has been revised due to the removal of one data source from the calculation. This data was not always available with sufficient timeliness, and the change will improve the responsiveness of the curve to changes in inflation expectations over time.

To understand and interpret inflation expectations at each time horizon, the Reserve Bank uses available data to form an inflation expectations curve (figure 4.5). The Reserve Bank uses a common method from financial market analysis to fit this curve to surveyed inflation expectations.[4] This curve gives the structure of inflation expectations at various time horizons.

Short-term inflation expectations – those at one- and two-year horizons – tend to move similarly to CPI inflation data outturns. Near-term expectations also have a greater impact on current wage- and price-setting behaviour. Longer-term expectations tend to move less and are reflective of whether respondents believe that the MPC will act against inflationary pressure. Therefore, it is these longer-term expectations that better indicate the credibility of the monetary policy strategy and outlook.

In recent quarters the inflation expectations curve has risen, particularly at near-term horizons. To date, the movements in near-term expectations have evolved as would be expected given the recent increases in actual CPI inflation. The much smaller movement in longer-term expectations is consistent with inflation expectations remaining anchored at the MPC's target. That is, the perception that the Reserve Bank's outlook for higher interest rates will see capacity pressures ease and inflation decline in the medium term. These movements in domestic inflation expectations are similar to those seen internationally.

The increases in longer-term expectations in New Zealand since the November *Statement* remain within the range of changes in recent decades. However, there is a risk that persistently high inflation will lead to a change in wage- and price-setting behaviour and influence how prices are set. More persistent inflationary pressures would, all else equal, require tighter monetary policy to ensure the MPC meets its economic objectives.

[4] A Nelson-Siegel model is used to fit a curve through the surveyed inflation expectations data at different horizons, an approach common in the yield curve modelling literature. Lewis, McDermott and Richardson (2016), 'Inflation expectations and the conduct of monetary policy in New Zealand', *Reserve Bank Bulletin*, Reserve Bank of New Zealand.

Economic projection

CHAPTER 05

Musick Point. Auckland, New Zealand.

CHAPTER 5

Economic projection

This chapter summarises the baseline economic projection that the MPC members considered when making their policy assessment. The projection was finalised on 17 February 2022.

This projection relies on a set of key assumptions about the domestic and global responses to the ongoing COVID-19 pandemic. These relate to:

- the economic impacts of, and recovery following, the recent Government restrictions on economic activity;
- how the New Zealand health system fares with widespread COVID-19 in the community, and whether higher levels of restrictions are required;
- how businesses, households and workers change behaviour with COVID-19 in the community;
- the duration and pricing impacts of supply-chain bottlenecks and the extent they are eased; and
- the pace of global monetary policy normalisation and investors' risk appetites.

There is significant uncertainty about these assumptions, and outcomes could be substantially different if they do not hold.

The projection takes into account recent data, which show resilient economic activity during the latest lockdown, further inflationary pressure and continued tightness in the labour market. These are somewhat offset by a weaker housing market and the move to heightened restrictions due to the Omicron outbreak. The factors underpinning this starting point are discussed in chapter 2.

The projection also accounts for the assumed impacts of the announced COVID-19 Protection Framework, the five-step border reopening schedule, the tightening of LVR restrictions, and the announced policy changes aimed at increasing housing supply through new housing intensification rules. The projection assumes that heightened restrictions within the COVID-19 Protection Framework and self-isolation requirements persist for some time, with these restrictions assumed to hamper both demand and supply. While we had assumed COVID-19 would become widespread in the November *Statement*, the higher transmissibility of the Omicron variant means it weighs more on our near-term outlook.

Annual inflation will remain elevated in the near term due to heightened capacity pressures, ongoing supply-chain bottlenecks and high oil prices. Over the medium term, we assume that tighter monetary policy will help to ease demand, supply-chain bottlenecks will be at least partially eased and global oil prices will gradually decline. These factors contribute to annual CPI inflation returning to the 2 percent target midpoint towards the end of the projection. Employment is expected to remain above its maximum sustainable level over much of the projection horizon, but to return towards MSE as capacity pressures ease.

Table 5.1

Key projection assumptions

Key factors	
House prices	• Annual house price inflation is assumed to slow sooner than expected, declining from 27.4 percent in the December 2021 quarter to -5.1 percent in the December 2022 quarter. • A variety of factors, including higher interest rates, increased home building, low net migration, announced changes to tax policy and tightened lending standards, are expected to constrain house price growth over the projection horizon. House prices are assumed to decline by about 9 percent from the end of 2021 to mid-2024, towards more sustainable levels. • Falling house prices reduce household wealth relative to the November *Statement*, and are expected to weigh on consumption over the projection.
COVID-19 and health restrictions	• We assume that COVID-19 becomes widespread in New Zealand, with heightened restrictions under the COVID-19 Protection Framework maintained during the early part of the projection. These restrictions are anticipated to further hamper demand, particularly as people self-isolate, beyond what we had included in our November *Statement* outlook. However, the reduction in demand is partially offset by a reduction in the supply of labour, as more workers fall ill or are required to isolate. • COVID-19 restrictions are expected to become less stringent over the projection horizon. • New Zealand's border restrictions are expected to be lifted incrementally over the course of 2022, in line with the recent Government announcement on reopening New Zealand.
Global factors	• Annual average trading-partner GDP growth is expected to have recovered to 5.8 percent in 2021 and then return to its long-term average growth rate from there. While the global recovery has been impeded recently by the Omicron outbreak, the ongoing COVID-19 vaccine rollout and further booster doses are assumed to help ease disruptions. • Recovering global demand and supply-chain impacts are supporting expectations of continued higher global inflation. Tighter monetary policy in some of our key trading partners is assumed to place continued downward pressure on the TWI, increasing domestic inflationary pressures. The New Zealand dollar is assumed to remain at its current level over the entire projection horizon. • The Dubai oil price is assumed to ease gradually towards 80 USD per barrel in the medium term, in line with futures market pricing.

Economic growth

Production

- Economic activity was less negatively impacted by the August 2021 lockdown than we expected in the November *Statement*. However, activity over the 2021/22 summer has still been constrained by periods of higher Government restrictions. Activity is expected to recover, with annual average GDP growth peaking at 3.0 percent in 2022.
- New Zealand's productive capacity (potential output) continues to be constrained by the domestic and international measures put in place to contain COVID-19. Mismatches in labour demand and supply have resulted in higher structural unemployment than prior to the pandemic, while supply-chain disruptions are reducing the availability of materials. These temporary disruptions are expected to dissipate as domestic border restrictions and bottlenecks ease.
- The output gap is starting from a stronger point than assumed in the November *Statement*. This reflects stronger-than-expected economic growth, a tight labour market and indications that businesses were facing substantial capacity pressures during lockdown.
- Capacity pressures are assumed to ease as the Omicron outbreak weighs on near-term economic activity, wealth effects from housing dampen consumption and increasing interest rates reduce demand over the projection horizon.

Consumption

- Consumption is expected to rebound after declining in the August 2021 lockdown. However, consumption is assumed to remain relatively subdued in the near term due to heightened restrictions under the COVID-19 Protection Framework and some hesitancy by New Zealanders to go out and spend as COVID-19 becomes more widespread.
- Consumption is projected to increase at a moderate pace over the medium term. Consumption is supported by a resilient labour market and accumulated savings, but dampened by rising interest rates and house price deflation.

Investment

- Despite heightened capacity pressures, business investment is expected to be subdued in the near term. This reflects an initial period of heightened uncertainty as COVID-19 becomes widespread in New Zealand. Thereafter, business investment is expected to grow in line with capacity pressures.
- Residential investment rebounds from the August 2021 lockdown, reflecting home-building consents. Government policies that permit more intensive residential builds are expected to provide further medium-term support. Despite the slowdown in house price inflation and increases in interest rates, residential investment is projected to remain elevated over the projection horizon.

Exports and imports

- A stronger outlook for imports is assumed to weigh on the trade balance over the medium term. This is exacerbated in the near term by lower dairy and meat export volumes resulting from a less favourable pastural season.
- Import prices are assumed to remain slightly higher than expected in the November *Statement*. This is due to higher oil prices and the pass-through of supply-chain disruptions to the cost of producing goods and transporting them to New Zealand.
- Over the projection, recovering global growth is expected to underpin demand for New Zealand's exports. Dairy prices are expected to moderate to $3,500 USD/MT by the end of the projection horizon, in line with current market pricing.
- We continue to assume that New Zealand's geographic remoteness will somewhat discourage international travellers from visiting once border restrictions are eased. However, New Zealanders are expected to be more comfortable with international travel after an initial period of adaptation to widespread COVID-19 in the community. This asymmetry weighs on net service exports over the projection horizon.

Labour market

Employment and wages

- The New Zealand labour market remains very tight. The unemployment rate is assumed to remain at around 3.2 percent in the first half of 2022. This reflects ongoing demand and supply-side constraints, particularly from closed borders.
- We assume that the structural level of unemployment remains elevated compared to pre-COVID-19 levels, largely reflecting a mismatch of skills in New Zealand's labour market. This has lowered the level of maximum sustainable employment, particularly while New Zealand has border restrictions limiting new migrant workers from filling current labour shortages.
- Employment is expected to remain above its maximum sustainable level over much of the projection horizon, but to return towards MSE as capacity pressures ease.
- Annual LCI private sector wage inflation is assumed to accelerate further, peaking at 3.7 percent at the beginning of 2023. This reflects increases in the minimum wage, the currently tight labour market, and rising living costs.
- Net working-age migration is assumed to have remained mildly negative in 2021, as asymmetric border restrictions impeded arrivals but not departures. Net migration is projected to increase gradually as border restrictions ease over 2022, to a long-run average of about 24,000 people per year.

Inflation

Tradables

- Annual tradables inflation is expected to reach 7.5 percent in early 2022, reflecting increases in oil prices, the ongoing impacts of supply-chain disruptions and a lower New Zealand dollar TWI.
- Supply-chain disruptions are currently assumed to ease from around mid-2022, with ex-oil import prices normalising towards the end of 2022.

Non-tradables

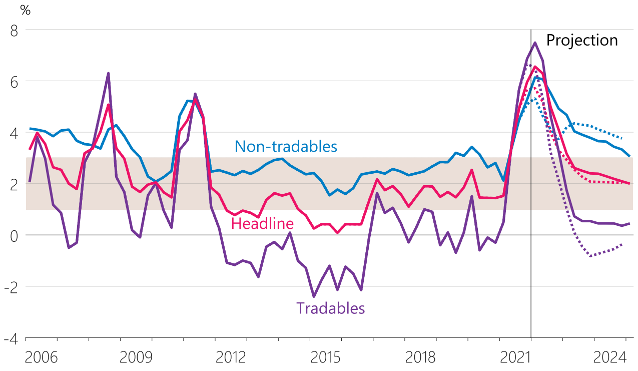
- Annual non-tradables inflation remains at or above 3 percent over the projection.
- High starting-point momentum in construction costs supports housing-related components of non-tradables inflation, including rents, in the near and medium term. Capacity pressures and a tight labour market provide additional support, but are assumed to ease over the latter part of the projection as monetary policy tightens.

Headline

- Annual CPI inflation is projected to peak at 6.6 percent in the March 2022 quarter, reflecting strength in both tradables and non-tradables inflation.
- Headline inflation is expected to decline towards the 2 percent midpoint of the target band towards the end of the projection, reflecting both easing tradables and non-tradables inflation.

Charts

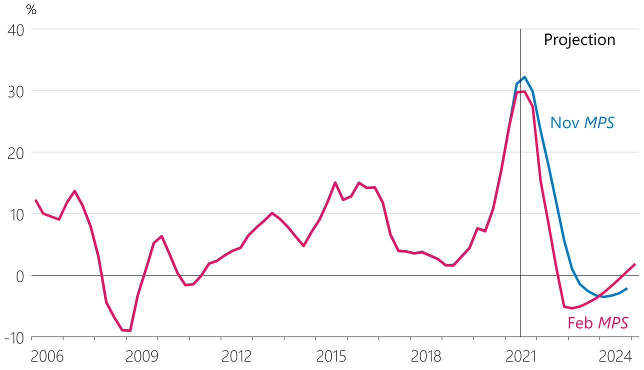
Figure 5.1
Inflation breakdown
(annual)



Source: Stats NZ, RBNZ estimates.

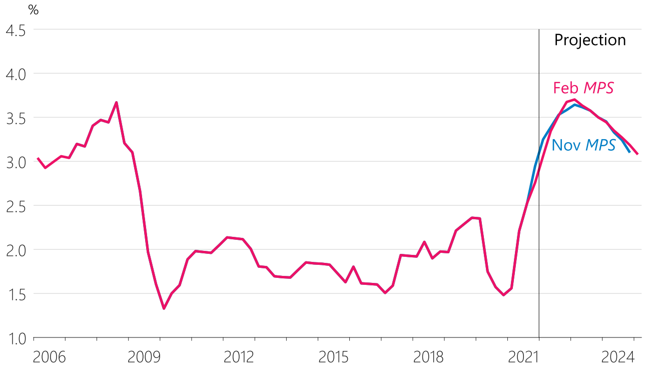
Note: Dotted lines show the projection from the November *Statement*.

Figure 5.4
Annual house price growth
(quarterly, seasonally adjusted)



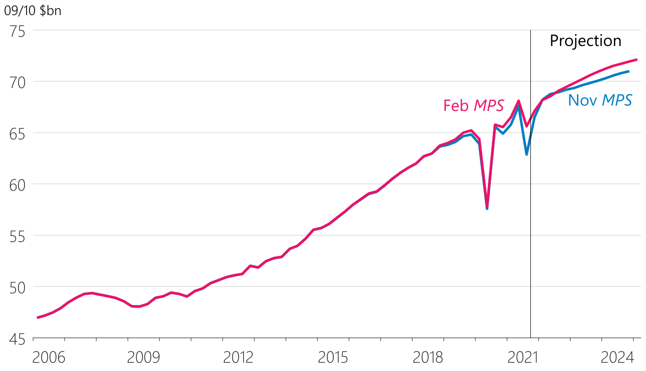
Source: CoreLogic, RBNZ estimates.

Figure 5.2
Private sector LCI wage inflation
(annual)



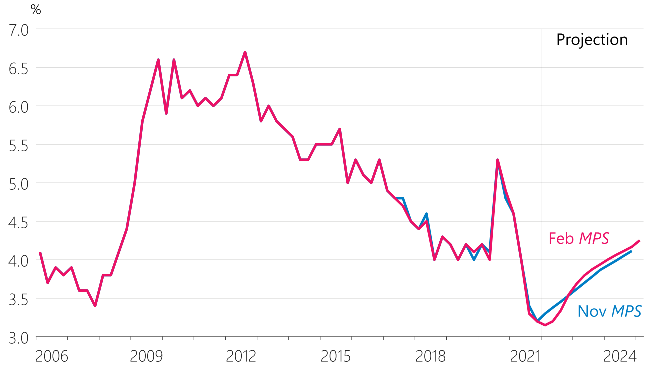
Source: Stats NZ, RBNZ estimates.

Figure 5.5
Quarterly production GDP
(seasonally adjusted)



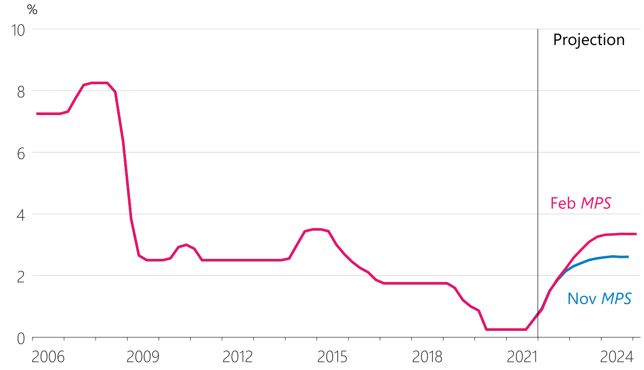
Source: Stats NZ, RBNZ estimates.

Figure 5.3
Unemployment rate
(share of labour force, seasonally adjusted)



Source: Stats NZ, RBNZ estimates.

Figure 5.6
OCR
(quarterly average)



Source: RBNZ estimates.

Appendices

CHAPTER 06

CHAPTER 6
Appendices

Appendix 1:
Our recent research

This appendix summarises the Reserve Bank's monetary policy-related research and speeches made by the Reserve Bank's senior leaders at various forums over the past nine months.

The MPC is responsible for achieving and maintaining price stability and supporting maximum sustainable employment. Since March 2021, the MPC's *Remit* has also directed the MPC to assess the effects of its decisions on the Government's policy of supporting sustainable house prices. The Reserve Bank's assessment of the impacts of MPC decisions on the wider economy, including the Government's housing objective, is underpinned by its research programme. Over the past nine months, Reserve Bank staff have assessed how interest rate movements influence household cash flows and the distribution of wealth, and how social welfare is affected by the monetary policy mandate. Staff have also published work outlining alternative monetary policy tools, as well as research that sets out the Reserve Bank's conceptual framework to assess house price sustainability.

The Reserve Bank's research is primarily disseminated through *Analytical Notes, Bulletin articles* and *Discussion Papers*. It is also published in external outlets such as academic journals and working paper series of other policy institutions and universities. In addition, the Reserve Bank produces a series of accompanying videos where staff present their research.

Analytical notes

Monetary policy pass-through to mortgage rates

Severin Bernhard, James Graham and Shaun Markham find that the pass-through of changes in the OCR to retail mortgage rates is imperfect; a 1 percent change in the OCR moves mortgage rates by 0.34 percent within a month's time, while the peak impact on mortgage rates occurs about six months after the change in the OCR. Pass-through varies across banks – some of the differences between banks could be attributed to the share of retail funding or foreign funding on the balance sheet, and the size of the bank.

The household cash flow effects of low interest rates in New Zealand

Gulnara Nolan finds that cuts in interest rates between 2016 and 2020 increased the disposable incomes of people with home mortgages by about 1 percent on average. In particular, low-income households with mortgages, and middle-aged mortgage holders were found to have more cash in hand as borrowing rates fell. However, the incomes of people without mortgages – that is, renters and those who had paid off their mortgages – were found to have fallen by 0.4 percent due to lower bank deposit rates.

Monetary policy easing and the distribution of wealth in New Zealand

Karsten Chipeniuk and Gulnara Nolan investigate the effects of surprise movements in monetary policy on the distribution of wealth, using a theoretical model of the New Zealand economy. They find that a 50-basis-point reduction in the OCR leads to a more equal distribution of wealth in the economy – with the Gini coefficient falling by approximately 0.5 percentage points. This drop occurs gradually and reaches its trough after five quarters, remaining persistently lower thereafter.

Measures for assessing the sustainability of house prices in New Zealand

House prices are considered to be sustainable when they are aligned with the outlook for the fundamental drivers of the housing market, such as long-term interest rates, population growth and the supply response to demand. Matthew Brunton describes a range of metrics that can be used as indicators to determine whether current prices have deviated from sustainable levels. Using these metrics, he finds evidence suggesting house prices became more unsustainable over 2020 and 2021. Furthermore, these metrics point to tighter household balance sheets and income constraints as interest rates increase.

Bulletin articles and external publications

RAMPed up: RBNZ’s additional monetary policy toolkit

The Reserve Bank’s policy response to the economic headwinds associated with the arrival of COVID-19 included introducing monetary tools not previously used in New Zealand. These Additional Monetary Policy (AMP) tools were developed to provide further stimulus when the OCR is constrained. In this *Bulletin* article, Brandon Kengmana summarises the Reserve Bank’s current thinking around AMP tools in the context of the MPC’s AMP principles.

Welfare gains in a small open economy with a dual mandate for monetary policy

In a working paper published by the Centre for Macroeconomic Analysis at the Australian National University, Punnoose Jacob and Murat Özbilgin assess how household welfare is impacted when monetary policy is set a dual mandate, being directed to target both inflation and MSE. They find that in most circumstances household welfare outcomes can be improved by strengthening the stabilisation of employment around its maximum sustainable level. However, the size of the benefit of additionally responding to employment is smaller if a central bank already responds strongly to deviations of inflation from its target.

Speeches on monetary policy

Insights from staff research also inform the speeches made by the Reserve Bank's senior leaders at various domestic and international forums. This section lists recent Reserve Bank speeches on monetary policy that have been made available on the Reserve Bank's website.

A strategic view of Te Pūtea Matua's balance sheet

2 June, 2021

Head of Financial Markets, Vanessa Rayner discusses the strategic use of the Reserve Bank's balance sheet in light of the unprecedented economic crisis triggered by the COVID-19 pandemic. The Reserve Bank's balance sheet has expanded rapidly in order to meet our policy objectives, and is expected to remain large for some time. Although domestic and global financial market conditions have improved, leading to the removal of some temporary liquidity facilities, we continue to monitor market conditions and are ready to respond in the future if needed. The Reserve Bank will continue to engage with financial market participants as it designs a balance sheet that best serves the needs of New Zealanders.

A least regrets approach to uncertainty: Hawks, Doves and the White Heron (he Kōtuku)

21 September, 2021

Followers of monetary policy have typically categorised central banks as 'hawks' or 'doves', for signalling higher or lower interest rates. Departing from these conventional analogies, Christian Hawkesby, then Assistant Governor, uses the movements of the kōtuku (the white heron) as a metaphor to describe the MPC's 'least regrets' approach to monetary policy. The extreme uncertainty around the economic outlook demands an approach that is adaptable, sometimes moving with caution in slow, small steps, and at other times moving with confidence, quickly in large steps to remain successful. Two proverbs that are associated with the kōtuku – 'he kōtuku rerenga tahi' ('a white heron's flight is seen but once') and 'tapuwae kōtuku' ('considered steps') – capture the ideas of moving with purpose and confidence at the right moment, and carefully assessing your environment. This approach will help the MPC traverse uncharted waters to achieve its monetary policy mandate.

Housing matters

2 November, 2021

Governor Adrian Orr discusses the Reserve Bank's approach to housing through the lenses of the financial stability and monetary policy mandates. Movements in interest rates do affect the demand for, and ultimately the price of, housing assets. However, the long-term declines in global interest rates, rather than the easing of short-term rates related to monetary policy, are likely to have supported the persistent increase in house prices. House prices and housing affordability are affected by both supply and demand factors. These range across immigration, tax policy, government benefits or transfers, land availability, building standards, infrastructure and apprenticeship programmes. Solutions to any identified problem in the housing market require collaboration between many government agencies, businesses, financial institutions and broader community groups.

Appendix 2: Statistical tables

Table 6.1

Key forecast variables

		GDP growth Quarterly	CPI inflation Quarterly	CPI inflation Annual	TWI	OCR
2020	Mar	-1.3	0.8	2.5	70.9	0.9
	Jun	-10.3	-0.5	1.5	69.7	0.3
	Sep	13.9	0.7	1.4	72.0	0.3
	Dec	-0.4	0.5	1.4	72.9	0.3
2021	Mar	1.5	0.8	1.5	74.9	0.3
	Jun	2.4	1.3	3.3	74.7	0.3
	Sep	-3.7	2.2	4.9	74.4	0.3
	Dec	**2.3**	1.4	5.9	74.3	0.6
2022	Mar	**1.6**	**1.4**	**6.6**	**71.6**	**0.9**
	Jun	**0.5**	**1.1**	**6.3**	**71.6**	**1.5**
	Sep	**0.8**	**1.0**	**5.0**	**71.6**	**1.9**
	Dec	**0.6**	**0.6**	**4.1**	**71.6**	**2.2**
2023	Mar	**0.5**	**0.5**	**3.2**	**71.6**	**2.6**
	Jun	**0.5**	**0.5**	**2.6**	**71.6**	**2.8**
	Sep	**0.6**	**0.8**	**2.5**	**71.6**	**3.1**
	Dec	**0.5**	**0.5**	**2.4**	**71.6**	**3.3**
2024	Mar	**0.4**	**0.5**	**2.4**	**71.6**	**3.3**
	Jun	**0.4**	**0.4**	**2.3**	**71.6**	**3.3**
	Sep	**0.3**	**0.7**	**2.2**	**71.6**	**3.4**
	Dec	**0.3**	**0.4**	**2.1**	**71.6**	**3.4**
2025	Mar	**0.3**	**0.4**	**2.0**	**71.6**	**3.4**

Table 6.2

Measures of inflation, inflation expectations, and asset prices

	2020			2021				2022
	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar
Inflation (annual rates)								
CPI	1.5	1.4	1.4	1.5	3.3	4.9	5.9	
CPI non-tradables	3.1	2.6	2.8	2.1	3.3	4.5	5.3	
CPI tradables	-0.6	-0.1	-0.3	0.5	3.4	5.7	6.9	
Sectoral factor model estimate of core inflation	1.9	1.9	2.1	2.3	2.7	3.0	3.2	
CPI trimmed mean (30 percent measure)	2.1	1.7	2.2	1.7	3.0	4.0	4.3	
CPI weighted median	2.4	2.2	2.7	2.3	3.0	3.3	3.8	
GDP deflator (expenditure)	2.4	1.8	0.8	0.4	2.3	3.7		
Inflation expectations								
ANZ Business Outlook – inflation one year ahead (quarterly average to date)	1.4	1.4	1.5	1.9	2.2	2.9	4.0	
RBNZ Survey of Expectations – inflation 2 years ahead	1.2	1.4	1.6	1.9	2.0	2.3	3.0	3.3
RBNZ Survey of Expectations – inflation 5 years ahead	1.8	1.9	1.9	2.0	2.1	2.0	2.2	2.3
RBNZ Survey of Expectations – inflation 10 years ahead	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1
Long-run inflation expectations*	1.8	2.0	2.0	2.1	2.1	2.0	2.1	2.1
Asset prices (annual percent changes)								
Quarterly house price index (CoreLogic NZ)	7.1	10.8	16.9	24.1	29.7			
REINZ Farm Price Index (quarterly average)	-8.0	-3.7	-0.5	6.9	6.3	15.1	20.5	
NZX 50 (quarterly average)	6.4	8.6	13.2	14.4	17.1	10.3	3.0	-2.5

Source: ANZ, Aon-Hewitt Consulting, Consensus Economics, RBNZ estimates.

*Long-run expectations are extracted from a range of surveys using a Nelson-Siegel model.

Table 6.3

Measures of labour market conditions

(seasonally adjusted, changes expressed in annual percent terms, unless specified otherwise)

	2020			2021			
	Jun	Sep	Dec	Mar	Jun	Sep	Dec
Household Labour Force Survey							
Unemployment rate	4.0	5.3	4.9	4.6	4.0	3.3	3.2
Underutilisation rate	12.0	13.2	11.9	12.1	10.5	9.2	9.2
Labour force participation rate	69.9	70.1	70.2	70.4	70.5	71.2	71.1
Employment rate (percentage of working-age population)	67.1	66.4	66.8	67.1	67.7	68.8	68.8
Employment growth	1.6	0.4	0.6	0.2	1.6	4.2	3.7
Average weekly hours worked	30.6	33.7	35.0	33.8	34.0	31.2	33.5
Number unemployed (thousand people)	115	151	141	133	114	98	93
Number employed (million people)	2.73	2.71	2.73	2.75	2.78	2.83	2.83
Labour force (million people)	2.85	2.87	2.87	2.88	2.89	2.93	2.92
Extended labour force (million people)	2.96	2.97	2.97	2.99	2.98	3.01	3.01
Working-age population (million people)	4.07	4.09	4.09	4.09	4.10	4.11	4.11
Quarterly Employment Survey – QES							
Filled jobs growth	0.3	-0.6	0.3	0.5	2.5	4.0	4.2
Average hourly earnings growth (private sector, ordinary time)	2.4	3.7	4.5	4.1	4.4	3.6	4.1
Other data sources							
Labour cost index growth, private sector	1.7	1.6	1.5	1.6	2.2	2.5	2.8
Labour cost index growth, private sector, unadjusted	2.8	2.6	2.4	2.8	3.7	4.1	4.5
Estimated net migration (published, thousands, quarterly)	0.4	0.4	-2.5	-1.7			
Change in All Vacancies Index	-50.1	-19.1	-1.1	26.1	164.1	56.6	38.0

Note: The All Vacancies Index is produced by MBIE as part of the monthly Jobs Online report, which shows changes in job vacancies advertised by businesses on internet job boards. It is converted to quarterly and seasonally adjusted by the Reserve Bank. The unadjusted LCI is an analytical index that reflects quality change in addition to price change (whereas the official LCI measures price changes only). For definitions of underutilisation, the extended labour force, and related concepts, see Statistics New Zealand (2016), *Introducing underutilisation in the labour market*. Estimated net migration (published) is the Stats NZ outcomes-based measure.

Table 6.4

Composition of real GDP growth

(annual average percent change, seasonally adjusted, March years, unless specified otherwise)

	Actuals							Projection			
March year	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Final consumption expenditure											
Private	3.3	4.2	6.5	4.8	4.5	2.5	0.6	**4.3**	**2.6**	**1.4**	**1.7**
Public authority	2.9	2.2	1.9	3.7	3.3	5.5	7.5	**7.8**	**1.6**	**0.9**	**0.8**
Total	**3.2**	**3.7**	**5.4**	**4.5**	**4.3**	**3.2**	**2.2**	**5.1**	**2.4**	**1.3**	**1.5**
Gross fixed capital formation											
Residential	8.3	7.1	8.8	-1.8	-0.1	2.8	1.8	**9.9**	**9.2**	**1.4**	**0.8**
Other	8.0	2.5	-0.1	10.3	7.0	2.4	-6.7	**8.7**	**8.7**	**2.7**	**-1.3**
Total	**8.1**	**3.6**	**2.2**	**7.0**	**5.2**	**2.5**	**-4.7**	**9.0**	**8.8**	**2.4**	**-0.7**
Final domestic expenditure	4.3	3.7	4.6	5.1	4.5	3.0	0.6	**6.0**	**3.8**	**1.5**	**0.9**
Stockbuilding*	0.5	-0.3	0.1	0.2	-0.2	-0.2	-0.3	**1.3**	**-0.7**	**-0.2**	**0.0**
Gross national expenditure	**4.6**	**3.2**	**4.8**	**5.6**	**4.3**	**2.7**	**-0.7**	**7.9**	**3.2**	**1.5**	**1.0**
Exports of goods and services	4.7	6.8	2.1	3.8	3.4	0.3	-17.7	**4.4**	**6.3**	**8.6**	**4.7**
Imports of goods and services	7.7	2.6	5.6	7.8	4.3	1.0	-15.9	**17.9**	**7.4**	**4.8**	**2.2**
Expenditure on GDP	**3.6**	**4.4**	**3.7**	**4.3**	**4.0**	**2.6**	**-0.3**	**4.2**	**2.6**	**2.2**	**1.5**
GDP (production)	3.8	3.8	3.8	3.6	3.4	2.2	-1.3	**5.3**	**2.9**	**2.2**	**1.5**
GDP (production, March qtr to March qtr)	3.8	4.1	3.3	3.6	3.2	0.6	3.3	**2.5**	**2.4**	**2.0**	**1.2**

*Percentage point contribution to the growth rate of GDP.

Table 6.5

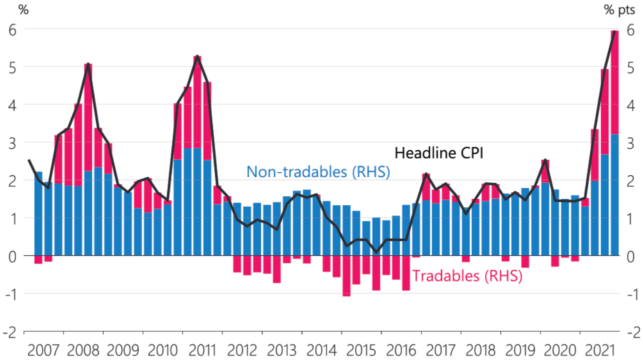
Summary of economic projection

(annual percent change, March years, unless specified otherwise)

	Actuals							Projection			
March year	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Price measures											
CPI	0.3	0.4	2.2	1.1	1.5	2.5	1.5	**6.6**	**3.2**	**2.4**	**2.0**
Labour costs	1.8	1.8	1.5	1.9	2.0	2.4	1.6	**3.1**	**3.7**	**3.4**	**3.1**
Export prices (in New Zealand dollars)	-8.0	0.7	4.1	3.3	1.1	6.9	-6.4	**16.7**	**-0.8**	**-0.3**	**1.2**
Import prices (in New Zealand dollars)	-3.4	1.2	0.7	1.8	4.3	2.6	-2.6	**11.6**	**-1.6**	**-0.2**	**0.3**
Monetary conditions											
OCR (year average)	3.4	2.9	2.0	1.8	1.8	1.2	0.3	**0.5**	**2.0**	**3.1**	**3.4**
TWI (year average)	79.3	72.6	76.5	75.6	73.4	71.7	72.4	**73.8**	**71.6**	**71.6**	**71.6**
Output											
GDP (production, annual average % change)	3.8	3.8	3.8	3.6	3.4	2.2	-1.3	**5.3**	**2.9**	**2.2**	**1.5**
Potential output (annual average % change)	3.0	3.2	3.3	3.3	3.2	2.9	-1.1	**3.1**	**4.0**	**2.7**	**2.3**
Output gap (% of potential GDP, year average)	-0.6	0.0	0.5	0.8	0.9	0.2	-0.1	**2.0**	**1.0**	**0.5**	**-0.3**
Labour market											
Total employment (seasonally adjusted)	3.6	2.2	5.9	2.9	1.5	2.5	0.2	**3.3**	**0.5**	**0.9**	**1.0**
Unemployment rate (March qtr, seasonally adjusted)	5.5	5.3	4.9	4.4	4.2	4.2	4.6	**3.2**	**3.7**	**4.0**	**4.3**
Trend labour productivity	0.7	0.6	0.5	0.5	0.5	0.7	0.8	**0.9**	**0.9**	**0.9**	**0.8**
Key balances											
Government operating balance (% of GDP, year to June)	0.2	0.7	1.5	1.9	2.4	-7.2	**-1.2**	**-5.7**	**-0.7**	**-0.3**	**0.3**
Current account balance (% of GDP)	-3.5	-2.4	-2.6	-3.0	-3.7	-2.3	-2.4	**-5.8**	**-6.2**	**-6.1**	**-5.8**
Terms of trade (SNA measure, annual average % change)	0.1	-3.1	2.5	4.5	-2.5	1.9	-1.0	**1.6**	**1.6**	**-0.4**	**0.5**
Household saving rate (% of disposable income)	-0.8	-0.5	0.0	-0.2	0.7	2.9	5.8	**3.7**	**2.6**	**1.6**	**1.1**
World economy											
Trading-partner GDP (annual average % change)	3.7	3.4	3.5	3.9	3.5	1.7	-0.8	**5.6**	**4.4**	**3.4**	**3.4**
Trading-partner CPI (TWI weighted)	1.0	1.2	1.9	1.8	1.4	2.4	0.8	**3.0**	**2.2**	**2.2**	**2.1**

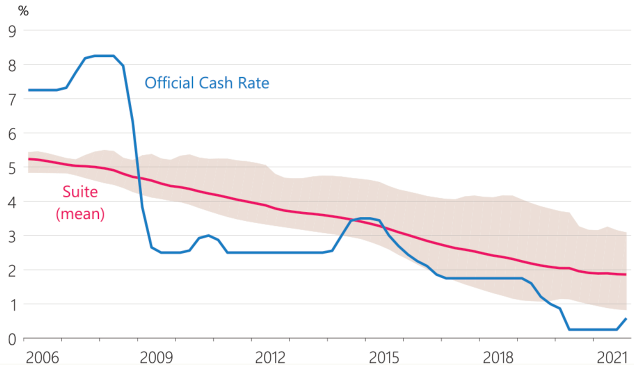
Appendix 3: Chart pack

Figure 6.1
Composition of CPI inflation
(annual)



Source: Stats NZ.

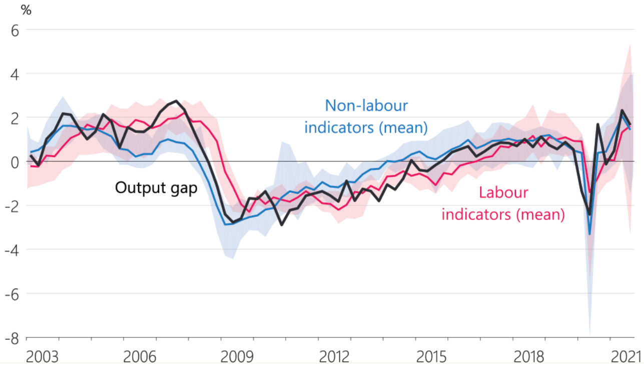
Figure 6.4
OCR and neutral OCR indicator suite
(quarterly average)



Source: RBNZ estimates.

Note: The shaded area indicates the range between the maximum and minimum values from a suite of neutral OCR indicators.

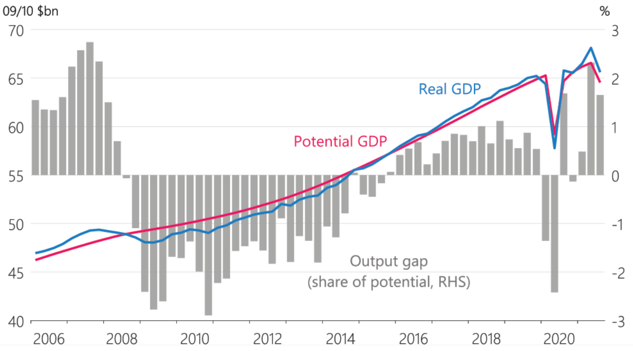
Figure 6.2
Output gap and output gap indicators
(share of potential)



Source: NZIER, MBIE, Stats NZ, RBNZ estimates.

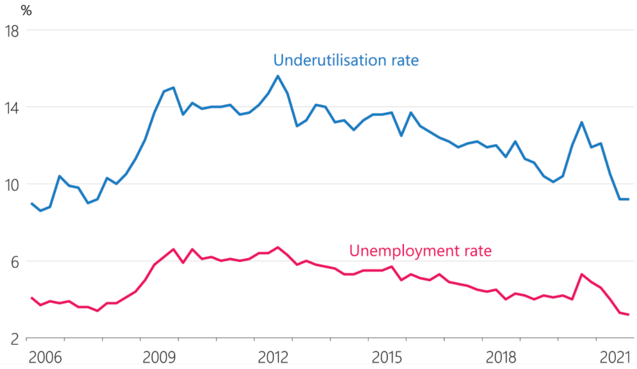
Note: The output gap indicators based on information about the labour market are shown separately from the other indicators. For each group of indicators, the shaded area shows the range of values and the line shows the mean value.

Figure 6.5
GDP and potential GDP
(seasonally adjusted)



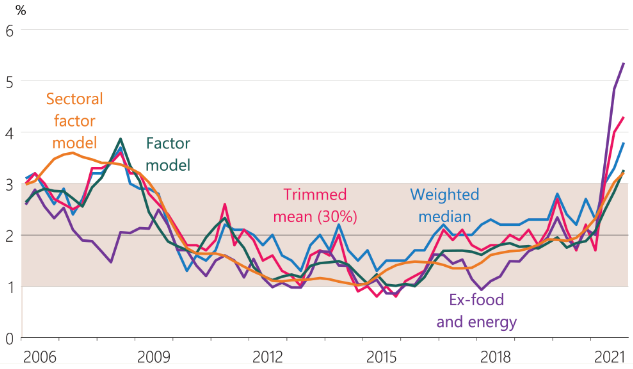
Source: Stats NZ, RBNZ estimates.

Figure 6.3
Unemployment and underutilisation rates
(seasonally adjusted)



Source: Stats NZ.

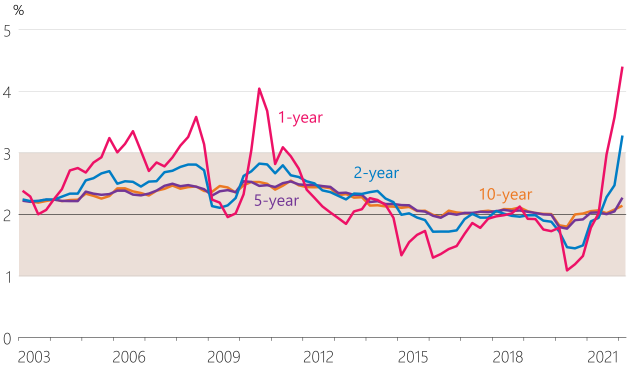
Figure 6.6
Measures of core inflation
(annual)



Source: Stats NZ, RBNZ estimates.

Note: Core inflation measures exclude the GST increase in 2010.

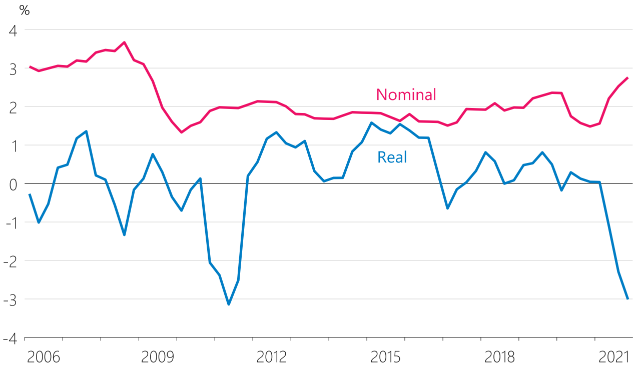
Figure 6.7
Inflation expectations
(annual)



Source: RBNZ estimates.

Note: Inflation expectations are estimates from the RBNZ inflation expectations curve, based on surveys of businesses and professional forecasters.

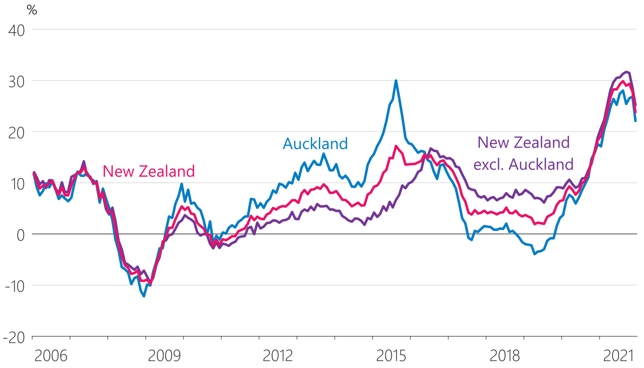
Figure 6.8
Private sector wage growth
(annual)



Source: Stats NZ, RBNZ estimates.

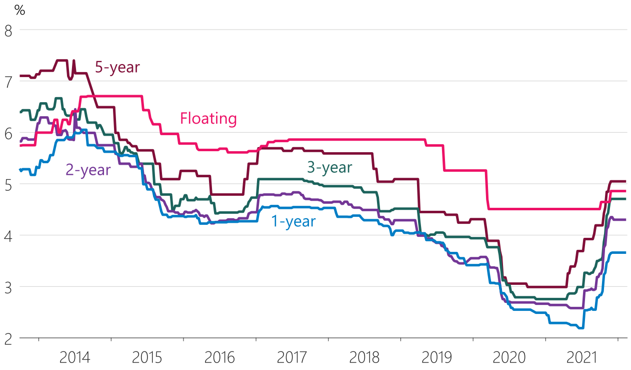
Note: Private sector wage growth is measured by the labour cost index, all salary and wage rates, private sector. Real labour cost index is deflated with headline CPI inflation.

Figure 6.9
House price inflation
(annual)



Source: REINZ.

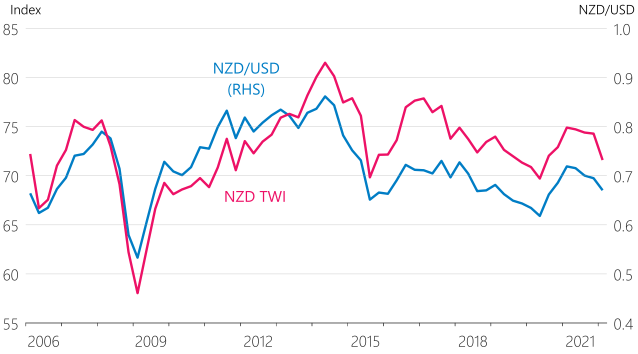
Figure 6.10
Mortgage rates



Source: interest.co.nz, RBNZ estimates.

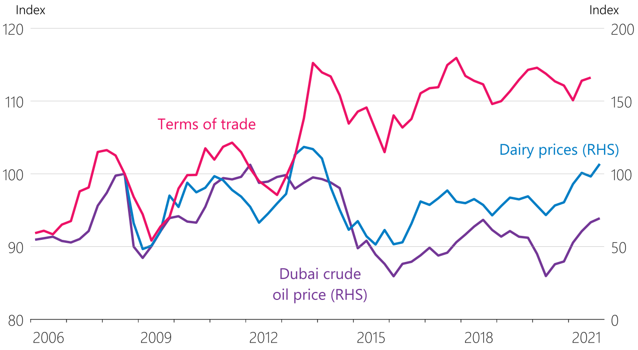
Note: The rates shown for each term are the average of the latest rates on offer from ANZ, ASB, BNZ, and Westpac.

Figure 6.11
New Zealand dollar exchange rates
(quarterly average)



Source: Reuters, RBNZ.

Figure 6.12
Terms of trade, dairy and oil price indices



Source: Stats NZ, Global Dairy Trade, Reuters, RBNZ estimates.