

05/2023

Monetary Policy **STATEMENT**





STATEMENT

of the MPC's monetary policy strategy

The Monetary Policy Committee's (MPC's) 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 2021* (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 effects 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 to 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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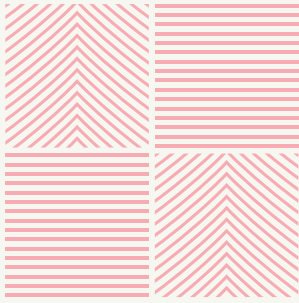
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05/2023

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The projections were finalised on 18 May 2023. The Official Cash Rate (OCR) projection incorporates an outlook for monetary policy that is consistent with the MPC's monetary policy assessment, which was finalised on 24 May 2023.



Policy
assessment

CHAPTER
01

CHAPTER 1

Policy assessment

Tēnā koutou katoa, welcome all.

The Monetary Policy Committee today voted to raise the Official Cash Rate (OCR) from 5.25% to 5.50%.

The Committee agreed the level of interest rates is constraining spending and inflation pressure. The OCR will need to remain at a restrictive level for the foreseeable future, to ensure that consumer price inflation returns to the 1-3% annual target range, while supporting maximum sustainable employment.

Global economic growth remains weak and inflation pressures are easing. This follows a period of significant monetary policy tightening by central banks internationally. International supply-chain constraints have also eased following a period of disruption, and shipping costs have declined. The weaker global growth has led to lower export prices for New Zealand's goods.

In New Zealand, inflation is expected to continue to decline from its peak and with it measures of inflation expectations. However, core inflation pressures will remain until capacity constraints ease further. While employment is above its maximum sustainable level, there are now signs of labour shortages easing and vacancies declining.

Consumer spending growth has eased and residential construction activity has declined, while house prices have returned to more sustainable levels. More generally, businesses are reporting slower demand for their goods and services, and weak investment intentions. Businesses report that a lack of demand, rather than labour shortages, is now the main constraint on activity.

There has been a return of net inward migration since international borders reopened. The Committee expects the pace of immigration to ease back toward pre-COVID-19 trend levels over coming quarters. While immigration has assisted to ease labour shortages, its net impact on overall spending is uncertain. The recent recovery in tourism spending, to around three-quarters of its pre-COVID-19 trend level, is also supporting demand.

The repair and rebuild facing significant regions of the North Island – due to the recent severe weather events – will support economic activity, in particular the horizontal construction sector. The timing of this predominantly government investment will be spread over several years. Broader government spending is anticipated to decline in inflation-adjusted terms and in proportion to GDP.

The Committee is confident that with interest rates remaining at a restrictive level for some time, consumer price inflation will return to within its target range of 1-3% per annum, while supporting maximum sustainable employment.

Meitaki, thanks.



Adrian Orr
Governor



SUMMARY

Record of meeting

The Monetary Policy Committee discussed recent developments in the New Zealand economy. The Committee agreed that monetary conditions are restricting spending and reducing inflationary pressure. However, current inflation remains high and spending will have to continue to slow to better match the supply capacity of the economy, so that consumer price inflation returns to its target range. While employment indicators reflect easing capacity pressures, they remain elevated.

Global economic growth has slowed below trend for most of our key trading partners. The Committee noted this weakness has been reflected in slowing demand for our goods exports, as seen in lower dairy and meat prices. For a number of years, COVID-19 and the war in Ukraine have constrained global production, disrupted supply chains, and increased shipping costs. These global supply bottlenecks have eased and commodity prices – in particular oil prices – have remained below their peaks in early 2022. Overall, headline inflation is continuing to decline amongst our key trading partners. Nevertheless, core inflation remains elevated in most of our trading partner economies.

Members discussed developments in global financial markets. Recent banking stress in the United States and Europe has been contained by regulators so far but has added to financial market volatility, tighter credit conditions, and uncertainty regarding the global economic outlook. The impacts from these events on domestic financial conditions have been limited to date, and the New Zealand banking system is sound.

The Committee discussed domestic economic developments. Economic activity in New Zealand contracted by 0.6% in the December 2022 quarter. This contraction was unexpected. Business and residential investment and overall government spending contracted in the December 2022 quarter, and domestic spending remained flat. The near-term outlook for activity remains subdued.

In addition, annual CPI inflation was lower than assumed in the February *Statement*, easing to 6.7% in the March 2023 quarter. Short-term price pressure from recent severe weather events appears to have been less than initially assumed. Both annual non-tradables and tradables inflation were lower than expected, with a reduction in tradables inflation accounting for a larger share of the overall decline in inflation.

Members discussed the evidence that demand is slowing in those parts of the economy that are most sensitive to higher interest rates. The constraining impact of higher interest rates has been most visible in spending and economic activity related to housing. Residential investment has started to ease and falling consent numbers suggest it will continue to slow. Feedback from the industry suggests the pipeline of future building activity is subdued. The rebuild work following the recent floods is assumed to provide a small offset to this decline.

Members also discussed the impact interest rate increases were having on the housing market and household spending. House prices have continued to decline, while first home buyers were accounting for a larger share of new home purchases. Overall, current monetary policy is supporting a moderation in house prices to more sustainable levels. The wealth effects from this decline in house prices have contributed to slowing spending on durable goods since early 2022. In addition, the rate of credit growth for households has declined.

The Committee discussed evidence that elevated interest rates were constraining business activity. Businesses are reporting a general slowing in demand, a weaker outlook for investment, and business credit growth has declined. Businesses are also reporting that orders are now the main constraint on activity – after a period of it being labour availability.

The Committee noted that while the total number of international visitors remains below pre-COVID-19 levels, its recovery since the border was reopened has supported aggregate demand.

Members discussed the recent increase in net inward migration. The projections incorporate a stronger starting point for net inward migration. The Committee discussed what this stronger starting point for migration means for the economy. Overall, it suggests that spending and activity have been subdued, even in an environment of strong population growth. The increase in net inward migration is providing some relief in a very tight labour market, but the net impact on demand – including for housing – is uncertain, as is the impact on inflationary pressure.

Members noted this increase in migration is assumed to be temporary. Migration is assumed to fall back towards the average inflows seen in the years preceding COVID-19, and settle at an inflow of around 36,000 working-age people per year. While the recent increase may partly reflect some pent-up demand to migrate to New Zealand, immigration rules have also been eased to alleviate acute labour shortages in some sectors. The Government recently made it temporarily possible for some migrants on work visas who had already been living in New Zealand for a period to apply for a special resident class visa. Given these new residents would have already been participating in the economy and the housing market as renters, it is expected this change will add only modest pressure to housing demand.

The Committee discussed likely economic impacts of recent severe weather events. Public infrastructure was significantly damaged. Clean-up, repair and rebuild work continues. While estimates are uncertain, the Committee assumes the recovery from these events will add about 1.5 percent to GDP spread over a number of years.

Members discussed the impact of *Budget 2023*. Fiscal policy is projected to add to demand over the 2023/24 fiscal year, then dampen demand in subsequent years. Overall, fiscal policy will be contractionary on demand over the projection horizon. This reflects that government consumption, which is the larger share of government spending, is expected to fall as a share of GDP in coming years. Government investment is expected to continue to grow, in part due to the repair and rebuild work in the aftermath of the weather events. Fiscal policy is projected to be less contractionary than the Committee had assumed in February.

The Committee also discussed the functioning of the New Zealand Government bond market. This was particularly in the context of an expansion to the New Zealand Treasury's bond issuance programme, and ongoing sales of bonds in the Large Scale Asset Purchase Programme portfolio. Overall, the market continues to function in line with historic norms. Notably spreads between government bond and swap rates have remained relatively stable.

The Committee discussed the New Zealand labour market. Employment is above its maximum sustainable level. The unemployment rate was 3.4% in the March 2023 quarter, still near record lows. However, same-job wage inflation was weaker than expected. The majority of maximum sustainable employment measures are now pointing to less labour market capacity pressure relative to March last year. Firms are reporting that labour is now less of a constraint to production. In addition, measures of skilled and unskilled labour shortages have eased.

Members discussed inflation expectations. Measures of inflation expectations of businesses have eased, while household inflation expectations moved higher. It was noted that there was increasing evidence that New Zealand households were putting greater weight on recent past inflation outturns when setting their inflation expectations. This has likely contributed to persistence in domestic inflationary pressure as inflation has risen.

The Committee discussed evidence that monetary conditions are having a contractionary effect on the economy. Members were confident that the interest rates faced by firms and households have constrained spending and investment for some time. This reflects the significant increase in the Official Cash Rate (OCR) that has occurred since late 2021.

The Committee then discussed if monetary conditions were contractionary enough to get inflation back to the 1-3% target in a suitable timeframe. Overall, current mortgage rates and business lending rates were restrictive, supporting a further moderation in inflation. A normalisation in bank funding costs, including increases in retail term deposit rates, is expected to support the maintenance of current mortgage rates. Some households would further limit their spending as they rolled onto higher fixed mortgage rates. Debt servicing costs for households have risen from historically low levels during the pandemic, and are projected to rise further. In addition, the usual lags of monetary policy transmission mean that the full effects of past OCR increases will still take some time to occur.

Members discussed the key economic developments they would need to see in coming quarters to remain confident that lending rates around current levels remained sufficiently contractionary. The Committee noted that the projections incorporate a moderation in inflation and inflation expectations, a continued slowing in household spending growth, and a continued moderation in global inflationary pressure.

Members discussed the key risks to the outlook for activity and inflation. Views on the outlook for the inflationary impact of migration were mixed. Some members saw the risk that strong migration inflows could persist for longer than assumed in current projections and boost spending and inflation. Other members saw the risks as more balanced. In particular, there were not yet obvious signs that high rates of migration were affecting house prices and spending – and there were reasons to believe that current strength reflects pent up demand, and will prove temporary. In addition, migration could further alleviate labour shortages. There has also been a recent change in policy settings in Australia that eases the pathway to citizenship for emigrating New Zealanders. The effect of this on both the quantity and composition of net migration has yet to be seen.

Some members saw upside risk to tourism activity. New Zealand has already experienced a strong recovery in tourism. This has occurred at a time when the arrival of tourists from China has remained weak. A recovery in tourist arrivals from China would add demand in an already supply constrained sector.

The Committee discussed risks around the outlook for inflation expectations, notably the implications of evidence that New Zealand households were putting greater weight on recent past inflation outturns when setting their inflation expectations. Some members noted this could mean inflation expectations fall faster than in past cycles, as headline inflation declines. Others noted this behaviour could be asymmetric on the downside, and core inflation could prove stickier than currently assumed.

Members also discussed risks around the pass-through of past OCR increases to activity and inflation. Some members saw the risk of stronger than expected pass-through. Most notably, a large number of households are still facing the prospect of rolling onto higher fixed rate mortgages. This could constrain spending more than currently projected.

The Committee discussed the reaction to the April monetary policy review decision. The Committee's view in April was that inflationary pressures were still elevated, with little risk of fallout from global bank failures. In addition, the Committee was of the view that rebuild activity following recent weather events would necessitate a rise in government investment. A 50 basis point OCR increase was seen as necessary to support retail interest rates, especially given the fall in wholesale rates that had occurred at the time.

The Committee discussed the stance of policy to be confirmed at this meeting and the outlook for the OCR. The Committee was comfortable with the projected forward path for the OCR. The Committee discussed the suitability of keeping the OCR on hold at 5.25% or increasing it to 5.50%. The Committee agreed that neither decision would cause unnecessary instability in output, interest rates, or the exchange rate.

Raising the OCR to 5.50% is consistent with the projections. This reflects the view that while monetary policy is having a moderating effect on demand at this point in time, a 25 basis point increase in the OCR will increase confidence that inflation falls back to the midpoint of the target band.

The case for keeping the OCR at 5.25% with the same forward projections rested on the recognition that monetary policy is having a sufficiently moderating effect on demand and inflation, and that we are yet to see the full effects of past tightening on the economy. A pause would also allow more time to assess the impact of the significant tightening, and the timing of any further increase that might be needed.

On Wednesday 24 May, the Committee took the decision to vote on the two options. By a majority of five votes to two, the Committee agreed to increase the OCR by 25 basis points from 5.25% to 5.50%.

The Monetary Policy Committee reached a consensus that interest rates will need to remain at a restrictive level for the foreseeable future, to ensure consumer price inflation returns to the 1 to 3% target range while supporting maximum sustainable employment.

Attendees:

Reserve Bank members of MPC:

Adrian Orr, Karen Silk, Christian Hawkesby, Paul Conway

External MPC members:

Bob Buckle, Peter Harris, Caroline Saunders

Treasury Observer:

Dominick Stephens

MPC Secretary:

Adam Richardson



Current
economic
assessment
and monetary
policy outlook

CHAPTER 02

CHAPTER 2

Current economic assessment and monetary policy outlook



Key points

- The New Zealand economy contracted in the final quarter of 2022, with Gross Domestic Product (GDP) data much weaker than expected in the February *Statement*. Although activity declined, demand continued to exceed the economy's ability to supply goods and services sustainably. More recent indicators suggest the economy recovered slightly over the start of 2023, despite the disruptions caused by the severe weather events in the North Island.
- Demand is slowing in parts of the economy that are more sensitive to higher interest rates, such as spending on housing-related goods and services and home building. However, several less-interest-rate-sensitive factors are adding to demand in the New Zealand economy. These include the rebound in international tourism, the resurgence in net immigration and the clean-up, repair and rebuild work in the aftermath of the severe weather events.
- The Government announced higher spending in *Budget 2023*, which was more than assumed in the February *Statement*. Much of the increase was due to the repair and rebuild of infrastructure following the severe weather events. However, overall government spending growth has slowed from high levels as COVID-19 support measures have been phased out. As a result, government spending will be less inflationary than in recent years.
- Supply-chain disruptions have contributed to lower goods export volumes since the beginning of the pandemic. However, some of these supply factors have improved. At the same time, global demand for our goods exports has been waning. These factors have contributed to a decline in commodity prices – in particular for dairy and meat – since early 2022. Demand for our goods exports is expected to remain low, as the global growth outlook is subdued despite the reopening of China.
- Recent banking stress in the United States and Europe has been contained by regulators so far but has added to financial market volatility, tighter credit conditions and uncertainty about the global economic outlook. The effects of these events on the New Zealand dollar trade weighted index (TWI) and domestic financial conditions have been limited to date, as the New Zealand banking system is well placed to handle higher interest rates.
- On the supply side, global supply-chain bottlenecks have continued to ease and commodity prices – in particular oil prices – have remained below their peaks in early 2022. The costs of international shipping to New Zealand have fallen in recent months. Domestically, a sharp recovery in net immigration seems to have reduced acute labour shortages in some sectors of the economy. However, higher net immigration also supports demand – including for housing – and the net impact on inflationary pressure is uncertain at this point.

- On balance, inflationary pressures in the economy have eased due to weaker demand and improved supply. Prices for some goods and services that tend to be volatile – such as petrol prices and airfares – have declined from high levels in 2022. These factors resulted in annual consumer price inflation easing to 6.7 percent in the March 2023 quarter, which was lower than expected in the February *Statement*. The immediate inflationary pressure from the severe weather events appears to have been less than initially assumed. Many measures of inflation expectations have declined from recent highs, particularly at the 1-year and 2-year horizons. However, inflation remains too high, well above the Monetary Policy Committee’s (MPC’s) 1 to 3 percent target band. Most measures of persistent or ‘core’ inflation have also remained near their recent highs.
- Although labour market tightness appears to have eased since early 2022, it continues to support inflationary pressure. Employment remains above its maximum sustainable level. The unemployment rate was 3.4 percent in the March 2023 quarter, unchanged from the previous quarter and still near record lows. Labour market participation and employment as a share of the population increased to record highs. The underutilisation rate – a measure of those unemployed, underemployed and potentially looking for work – remained very low. Broader measures of wage inflation have remained strong, supporting household incomes and demand.
- High interest rates are still needed to further lower domestic demand relative to the economy’s ability to supply goods and services sustainably. Lower demand relative to supply reduces inflationary pressure over the medium term.
- While economic activity in the last quarter of 2022 was weaker than expected, further economic contraction during 2023 remains possible. The level of GDP is assumed to decline over 2023, but to a lesser extent than was expected in the February *Statement*.
- Conditional on our central economic outlook, it is expected that the OCR will need to follow a similar path to that assumed in the February *Statement* in order for the MPC to meet its inflation and employment objectives. Relative to the February *Statement*, higher net immigration, a slower decline in house prices and higher government spending are offset by the lower starting point level of GDP and consumer price inflation as well as a more negative outlook for our goods exports.



Current economic assessment

Demand has eased but continues to exceed supply

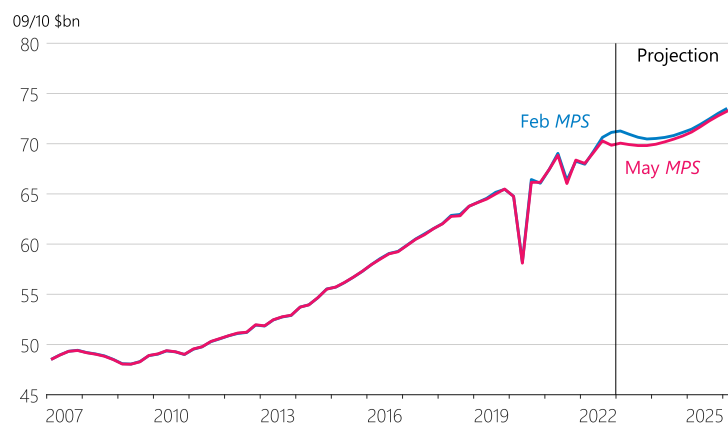
Economic activity in New Zealand, as measured by production GDP, contracted by 0.6 percent in the December 2022 quarter.¹ This was much lower than expected in the February *Statement* (figure 2.1). Weaker-than-projected output in services industries, which account for about two-thirds of GDP, was the key contributor to the unexpected decline.

While GDP data remain volatile, the underlying weakness in demand was reflected in most components of expenditure GDP. Private consumption was flat and business and residential investment and overall government spending contracted in the December 2022 quarter (figure 2.2). Higher interest rates, lower house prices and the higher cost of living contributed to a decline in domestic demand. Lower government consumption reflected a normalisation of government expenditure as COVID-19-related spending has largely been phased out.

Despite the easing in domestic spending, demand continues to exceed the economy's ability to supply goods and services sustainably. The output gap – a measure of the extent to which demand is matched by the level of production that the economy can supply sustainably – has been very strong over the last two years, consistent with the high inflation environment. However, as higher interest rates have reduced domestic demand, the output gap is estimated to have been declining since its peak in 2022 (figure 2.3). Consequently, domestic inflationary pressure has started to decrease.

Figure 2.1
Production GDP

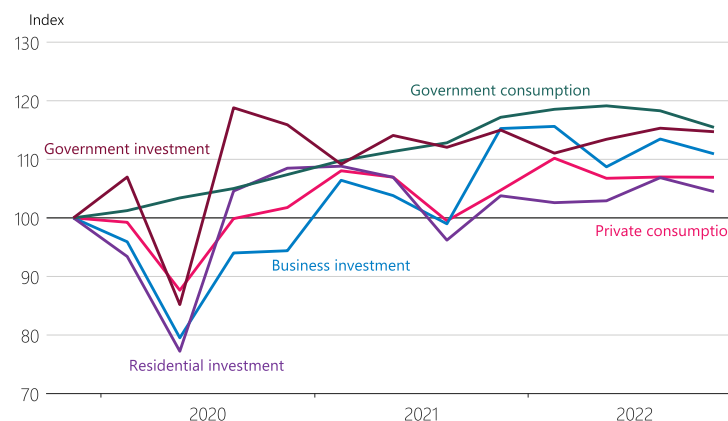
(quarterly, seasonally adjusted)



Source: Stats NZ, RBNZ estimates.

Figure 2.2
Selected components of real expenditure GDP

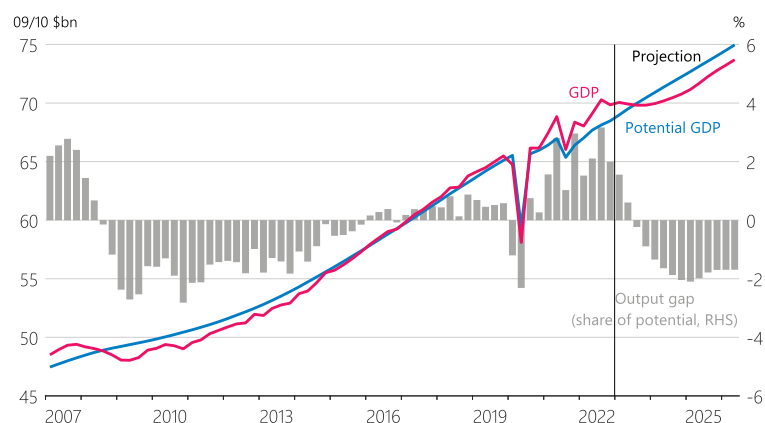
(quarterly, seasonally adjusted, index=100 in Q4 2019)



Source: Stats NZ.

Figure 2.3
GDP, potential GDP and the output gap

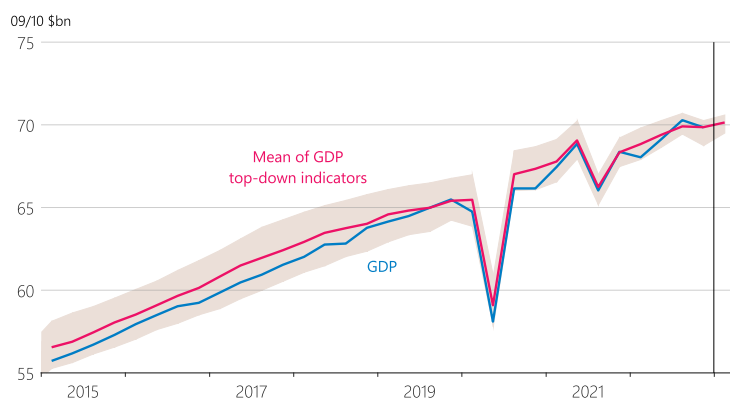
(quarterly, seasonally adjusted)



Source: Stats NZ, RBNZ estimates.

¹ GDP can be calculated through different approaches. "The production approach to GDP measures the total value of goods and services produced in New Zealand, after deducting the cost of goods and services used in the production process. This is also known as the value-added approach. The expenditure approach to GDP (also known as gross domestic expenditure or GDE) measures the final purchases of goods and services produced in New Zealand. Exports are added to domestic consumption, as they represent goods and services produced in New Zealand. Imports are subtracted, as they represent goods and services produced by other economies." See [Stats NZ – Gross domestic product](#).

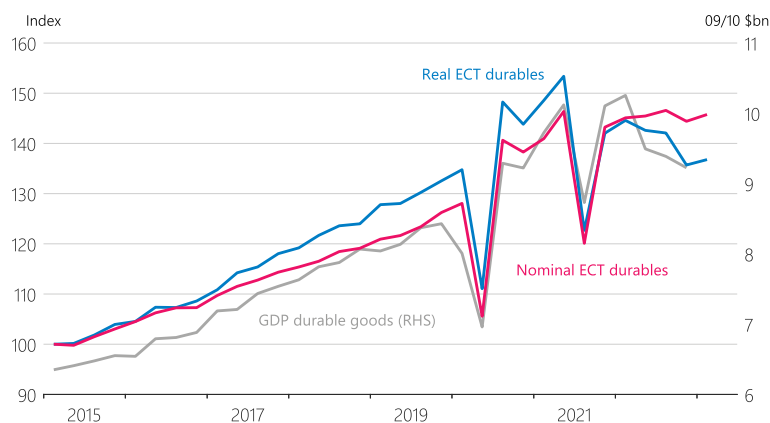
Figure 2.4
Top-down indicators for production GDP
(quarterly, seasonally adjusted)



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

Note: The shaded area indicates the range between the maximum and minimum values of the GDP top-down and nowcasting indicators. The GDP top-down indicators comprise the Performance of Services Index (activity/sales), Performance of Manufacturing Index (production), Quarterly Survey of Business Opinion (domestic trading activity, past quarter), New Zealand activity index, ANZ Truckometer (heavy traffic), ANZ Business Opinion (capacity utilisation) and QES (total paid hours). The GDP top-down indicators were created through linear regressions for each indicator with GDP in quarterly or annual percentage changes. In addition, a GDP nowcasting indicator is included that is based on a dynamic factor model and uses Kalman filtering techniques. This nowcasting indicator is based on the Nowcasting Report from the Federal Reserve Bank of New York. For all indicators the fitted values were transformed back into GDP levels. To avoid statistical bias, for most top-down indicators the nationwide COVID-19 lockdowns in 2020 and 2021 were captured through dummy variables in the regressions as these indicators were likely unable to sufficiently capture the lockdown impacts on GDP.

Figure 2.5
Spending on durable goods
(quarterly, seasonally adjusted)



Source: Stats NZ, RBNZ estimates.

Note: 'Real ECT durables' is 'nominal ECT durables' deflated with relevant components of the consumers price index.

An increase in survey-based business activity indicators and robust labour market data suggest that economic activity recovered slightly over the March 2023 quarter (figure 2.4). This was despite the disruptions to economic activity from the recent severe weather events, which were offset to some extent by the strong recovery in international tourism. Nonetheless, the near-term outlook for activity is subdued, and a second consecutive quarter of negative growth remains possible.

Higher interest rates are reducing demand

The constraining impact of higher interest rates has been most visible in spending and economic activity related to housing. Higher interest rates have contributed to slowing demand for housing, with house prices falling about 15 percent from their peak in November 2021 to April 2023. Higher mortgage rates increase debt-servicing costs for households, reducing the amount of household income available for other spending. Lower house prices also reduce spending by households as they feel less wealthy. Consistent with these effects, spending on durable goods – such as household appliances like fridges and washing machines – has been slowing since early 2022 (figure 2.5).

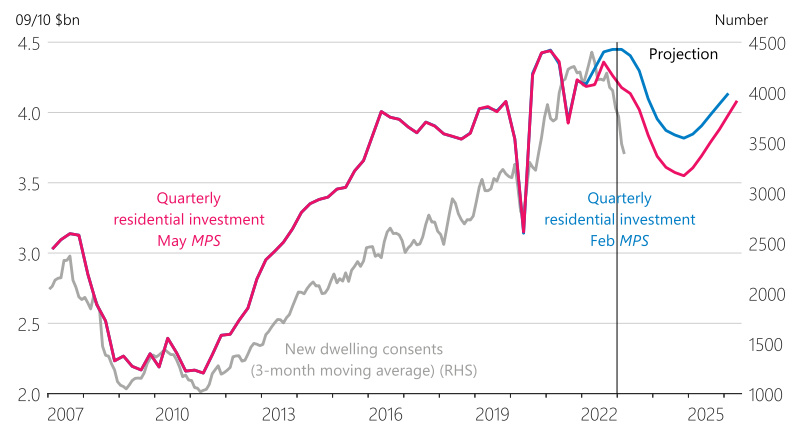
Higher interest rates have also made borrowing for housing more expensive. This, combined with lower house prices and higher construction costs, has made it less attractive for residential developers to build more houses. Falling consent numbers suggest that residential investment will continue to slow (figure 2.6). Support to construction from the high number of consents issued in previous years is also waning. The rebuild work following the severe weather events is assumed to provide an only small offset to this broader decline, with the rebuild work spread over several years.

Beyond housing-related spending, higher interest rates have meant businesses are seeing a general slowing in demand. In the Quarterly Survey of Business Opinion (QSBO) for the March 2023 quarter, more firms reported a lack of orders to be the factor most limiting output than any other single factor (figure 2.7). While this is still at a low level, it is the first quarter since mid-2021 in which more businesses have reported orders as being a more limiting factor than labour.

Higher interest rates and the worsening demand outlook contributed to a slight fall in business investment from high levels over 2022. Firms' investment intentions have fallen sharply since late 2021 and are below historical averages across all industries. Bank lending to non-agricultural businesses has also been declining since late 2022, suggesting that firms are more pessimistic about the demand outlook and are hesitant to invest. Business investment is expected to fall further over coming quarters, particularly given the recent decline in export prices.

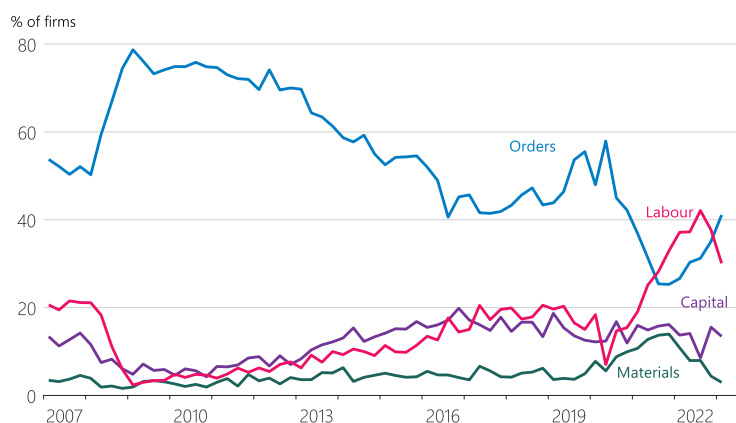
Demand is likely to ease further as the outstanding debt obligations of households and businesses continue to roll onto higher interest rates. For businesses, much of the increase in debt servicing costs has already occurred, as around 80 percent of business lending is either floating or reprices within three months. However, mortgages are typically fixed for one to two years. As a result, average debt-servicing costs for households will continue to increase, as borrowers roll onto higher interest rates.

Figure 2.6
Residential investment and consents
(seasonally adjusted)



Source: Stats NZ, RBNZ estimates.

Figure 2.7
QSBO factor most limiting output
(seasonally adjusted)



Source: NZIER, RBNZ estimates.

Factors less influenced by interest rates are adding to demand

Currently, several factors that are less sensitive to higher interest rates are adding to demand and inflationary pressure. While the total number of international visitors remains below pre-COVID-19 levels, the rapid recovery since the border reopened has boosted demand (see chapter 4.1). At the same time, airlines and businesses in tourism-related industries – such as accommodation and food services – struggled to meet this strong demand over the peak summer months. Shortages of labour, accommodation and transport limited the extent of the recovery, creating higher inflationary pressure than otherwise.

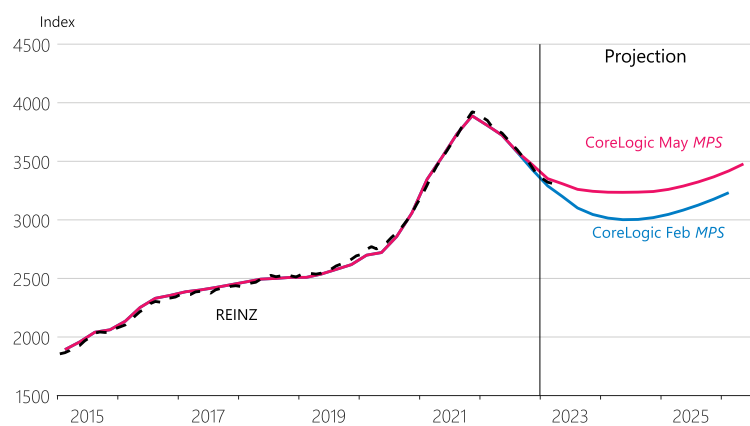
The border reopening has also contributed to much higher net immigration than assumed in the February *Statement* (figure 2.8). Net immigration was particularly high over recent quarters but is expected to decline to around pre-COVID-19 levels over the medium term. While this may partly reflect some ‘pent-up’ demand to migrate to New Zealand, immigration rules have also been eased to allow increased immigration of workers to alleviate acute labour shortages in some sectors. This is providing some relief in a very tight labour market, but the net impact on demand – including for housing – is highly uncertain, as is the impact on inflationary pressure. Adding to this uncertainty, changing immigration rules have also meant changes to the composition of immigrants. As a result, the extent and timing of immigrants adding to demand and inflationary pressure may be different to before COVID-19.

Figure 2.8
Net working-age immigration
(quarterly, seasonally adjusted)



Source: Stats NZ, RBNZ estimates.

Figure 2.9
House prices
(nominal, seasonally adjusted)



Source: CoreLogic, REINZ, RBNZ estimates.

Note: The REINZ house price index is indexed to the CoreLogic house price index in the March 2007 quarter.

In addition, between September 2021 and July 2022 the Government made it temporarily possible for immigrants on work visas who met certain criteria to apply for a special resident class visa.² More than 93,000 applications have been approved so far,³ increasing the pool of people eligible to buy residential property in New Zealand. This factor, when combined with strong net immigration, has led to a less negative outlook for house prices. While the outlook for house prices is highly uncertain, house prices are assumed to fall by less over coming quarters than assumed in the February *Statement* (figure 2.9).

² For more details, see Immigration New Zealand on the [2021 Resident Visa](#).

³ See Immigration New Zealand on [approvals numbers for the 2021 Resident Visa](#).

The recent severe weather events led to several deaths and many people lost their homes, vehicles and other possessions. Public infrastructure, farms and orchards were significantly damaged. The clean-up, repair and rebuild work in the aftermath of these events continues. While estimates are highly uncertain, we assume the recovery will add about 1.5 percent to annual GDP, roughly double the amount we expected in the February *Statement*. However, this impact will be spread over several years, with infrastructure repairs in particular assumed to take a long time. In *Budget 2023*, the Government announced a \$6 billion National Resilience Plan to help fund the rebuild from the severe weather events.⁴ This was in addition to the roughly \$900 million already announced following the severe weather events.⁵

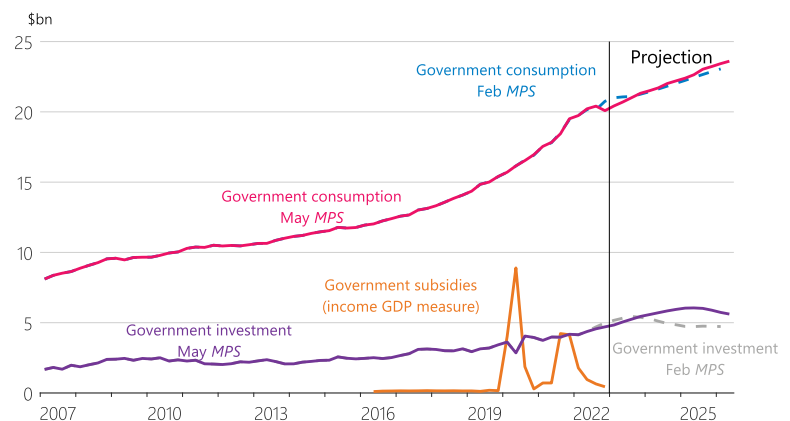
Government spending to normalise from elevated COVID-19 levels

In recent years, overall government spending in the form of nominal government consumption, investment and subsidies to households and businesses has increased significantly (figure 2.10). This spending has predominantly been in response to the COVID-19 pandemic, and has added to demand and inflationary pressure in the economy. Government expenditure itself has been affected by the more inflationary environment over the past two years, as the cost of delivering a given level of government services has risen.

Most COVID-19 support measures have been phased out since early 2022. Government subsidies are expected to stay low, but the outlook for real (inflation-adjusted) government consumption is somewhat higher than assumed in the February *Statement*. Real (inflation-adjusted) government investment is expected to continue to grow strongly, partly due to the repair and rebuild work in the aftermath of the severe weather events. However, overall real government spending as a share of the economy is assumed to decline over the medium term. As a result, government spending will be less inflationary than in recent years.

Figure 2.10

Government spending (nominal, quarterly, seasonally adjusted)

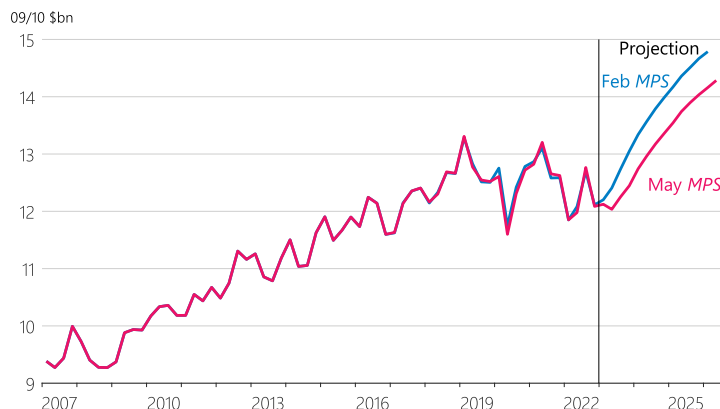


Source: Stats NZ, RBNZ estimates.

4 See the Government's [announcement on 18 May 2023](#).

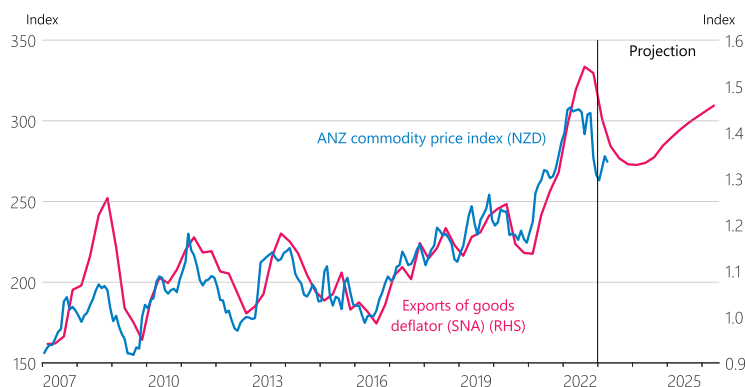
5 See [pre-budget speech to BNZ business breakfast on 14 May 2023](#).

Figure 2.11
Goods exports
(quarterly, seasonally adjusted)



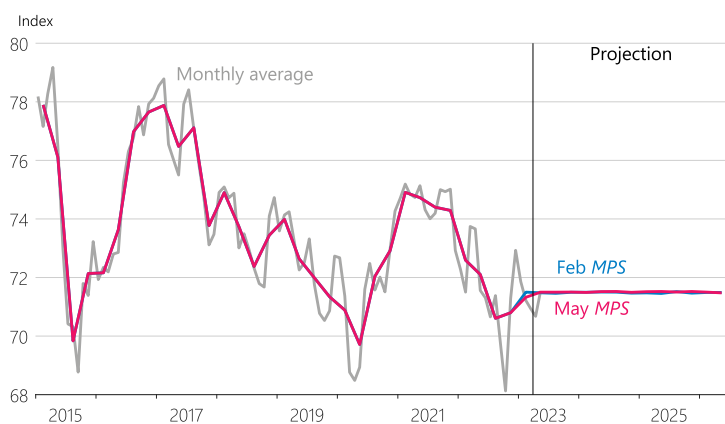
Source: Stats NZ, RBNZ estimates.

Figure 2.12
Commodity prices
(nominal, seasonally adjusted)



Source: ANZ, Stats NZ, RBNZ estimates.

Figure 2.13
New Zealand dollar TWI
(nominal)



Source: RBNZ estimates.

New Zealand’s goods exports have remained low

New Zealand’s services exports have increased rapidly due to the recovery in international visitors since the border reopened. However, our goods exports have remained somewhat below their pre-COVID-19 levels (figure 2.11). This has partly been due to labour shortages, reduced shipping capacity and less favourable growing conditions on farms and orchards overall, mainly affecting our commodity exports.

Some of these supply factors have improved in recent quarters. At the same time, global demand for our goods exports has been slowing. These factors have contributed to a decline in commodity prices since early 2022 (figure 2.12). Over 2023, global economic growth is expected to slow to below trend for most of our key trading partners. The economic growth outlook for China has improved further since the February *Statement*, as the easing of COVID-19 restrictions in China has contributed to a stronger-than-expected economic recovery. However, growth indicators in China softened slightly in April. Overall, demand for our goods exports is expected to remain low over 2023.

The New Zealand dollar TWI has provided some offset to slowing global demand for our goods exports. For most of the last three months, the TWI was lower than what was assumed in the February *Statement* (figure 2.13). Since most of our goods exports are traded in foreign currencies, export revenue – all else unchanged – increases when converted back into New Zealand dollars at a lower exchange rate. However, the New Zealand dollar TWI has more recently returned to be around the level assumed in the February *Statement* (see chapter 5).

Recent banking stress in the US and Europe has been contained by regulators so far, but has added to financial market volatility, tighter credit conditions and uncertainty about the global economic outlook. The effects of these events on the New Zealand dollar TWI and other financial conditions in New Zealand have been limited to date. New Zealand's banks are well capitalised and profitable, have strong liquidity and funding positions, and are relatively well placed to manage higher interest rates (see *Financial Stability Report* May 2023).

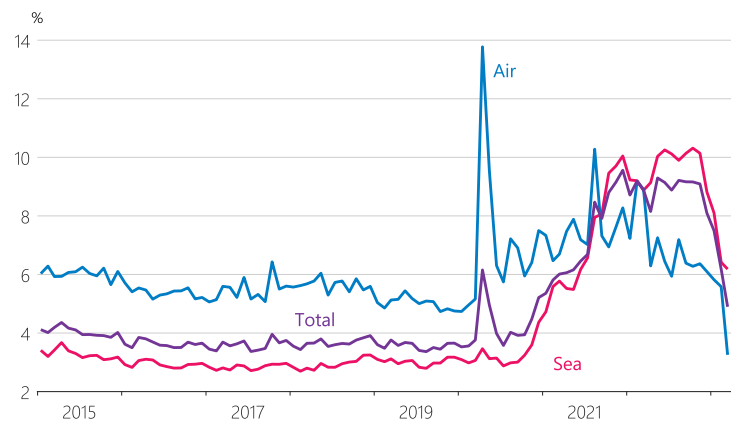
In early May, US Treasury Secretary Janet Yellen indicated that the level of US sovereign debt is likely to reach its statutory limit in June 2023 if the US Congress does not raise this limit. If this limit (or 'debt ceiling') is not increased, the US will be at risk of defaulting on its debt. While this is unlikely to happen, it has contributed to volatility in some US interest rates.

Supply constraints have continued to ease

Global supply-chain bottlenecks have continued to ease. Shipping costs for consumer goods imports to New Zealand have declined sharply over recent months (figure 2.14). The reopening of China has contributed to an increase in Chinese supply and logistics activity, although the reopening will also add to global demand.

Global commodity prices – in particular oil prices – have remained below their early-2022 peaks (figure 2.15). The disruptions to commodity demand and supply due to Russia invading Ukraine in early 2022 have largely unwound. Many commodity prices are close to their levels prior to the war in Ukraine. At this stage, the reopening of China does not appear to have added significantly to global commodity price pressure.

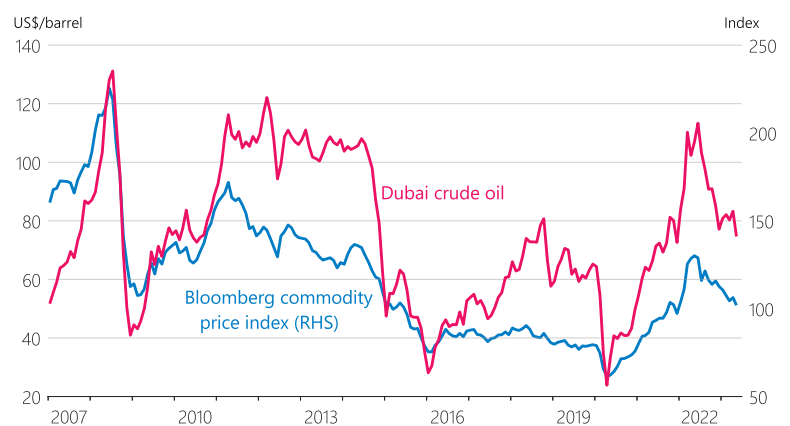
Figure 2.14
Shipping costs for consumer goods imports
(share of import value for duty)



Source: Stats NZ, RBNZ estimates.

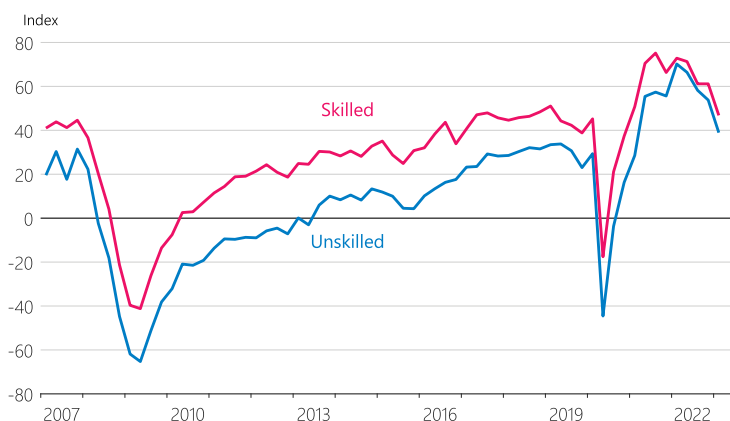
Note: These series are estimated by taking the value of consumer merchandise imports including freight and insurance costs (CIF) and subtracting the reported value for duty (VFD), which excludes these costs. They are expressed as a percentage of the VFD figure.

Figure 2.15
Global commodity prices
(nominal)



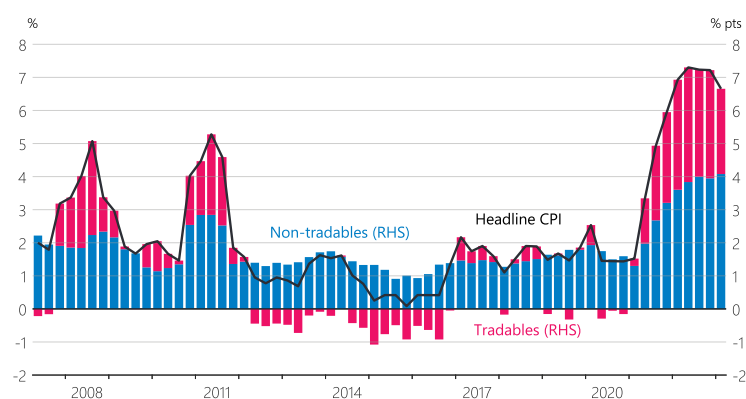
Source: Bloomberg, Reuters.

Figure 2.16
QSBO difficulty in finding labour
(seasonally adjusted)



Source: NZIER, RBNZ estimates.

Figure 2.17
Contributions to CPI inflation
(annual)



Source: Stats NZ.

Domestically, discussions with businesses suggest that labour shortages have eased slightly but remain elevated, consistent with the lower number of firms reporting difficulty finding skilled and unskilled labour than in previous quarters (figure 2.16). The number of job vacancies has also fallen from recent peaks around mid-2022. This indicates that businesses have been able to fill some open positions and that labour demand – while still strong – has not added as much to new vacancies.

The additional labour supply is coming from a rising share of the population participating in the labour force. This share reached a record high of 72 percent of the working-age population in the March 2023 quarter. In addition, net immigration has increased rapidly since the full border reopening in the latter half of 2022.

Inflation has been lower than expected but is still too high

On balance, inflationary pressure in the economy has reduced due to weaker demand and improved supply. Prices for some goods and services that tend to be volatile – such as petrol prices and airfares – have declined. Annual consumers price index (CPI) inflation eased from 7.2 percent in the December 2022 quarter to 6.7 percent in the March 2023 quarter.

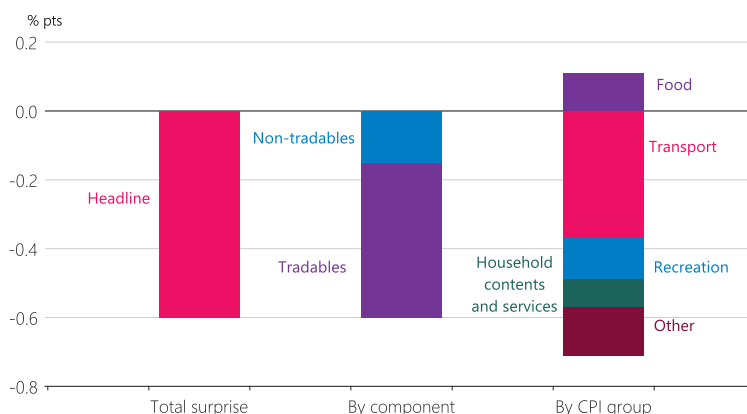
The decline in headline inflation was mainly due to a large fall in tradables inflation, which measures price changes for goods and services that are more exposed to international competition (figure 2.17). Annual tradables inflation fell from 8.2 percent in the December 2022 quarter to 6.4 percent in the March 2023 quarter. This decline was partly due to the strong March 2022 quarter dropping out of the annual percentage change calculation. However, prices for petrol and international airfares also declined sharply, reflecting lower oil prices and improving global supply chains and flight connectivity. These factors more than offset the increase in food prices during the March 2023 quarter.

In contrast, annual non-tradables inflation – which measures price changes for goods and services that are less exposed to international competition – continued to increase, from 6.6 percent in the December 2022 quarter to 6.8 percent in the March 2023 quarter. This is the highest recorded value since the start of this series in 1999, reflecting resilient demand and the tight labour market. Higher prices for construction, household utilities, restaurant meals and ready-to-eat food accounted for much of this annual increase. Prices for those goods and services affected by the recovery in international tourism, such as domestic accommodation, also increased.

While inflation remains high, it was lower than assumed in the February *Statement*. Although both annual non-tradables and tradables inflation were lower than expected, tradables inflation accounted for a larger share of the surprise (figure 2.18). Lower-than-expected prices for domestic and international airfares and second-hand cars accounted for much of the surprise in tradables inflation, partly offset by stronger-than-expected food prices. On the non-tradables side, much of the downside surprise was due to lower price increases for the purchase of new housing and household contents than assumed. Overall, the March 2023 CPI data imply that the immediate inflationary impact of the severe weather events was less material than assumed in the February *Statement*.

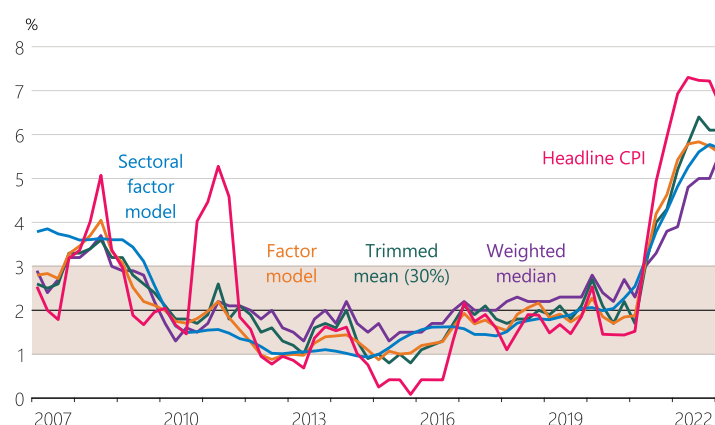
While inflation decreased more than expected in the March 2023 quarter, it is still too high. Most measures of persistent or ‘core’ inflation have remained near their recent peaks (figure 2.19). This implies that inflation will take some time to return to the mid-point of the MPC’s 1 to 3 percent target range.

Figure 2.18
CPI inflation surprise in Q1 2023
(annual)



Source: Stats NZ, RBNZ estimates.

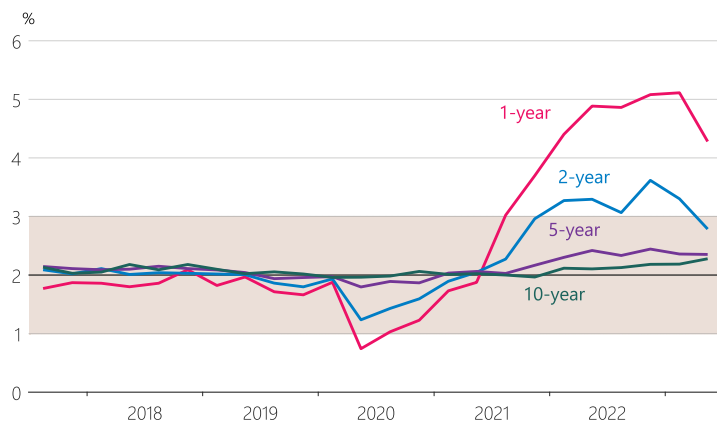
Figure 2.19
Headline and core inflation measures
(annual)



Source: Stats NZ, RBNZ estimates.

Note: The shaded area represents the MPC’s 1 to 3 percent target range for annual CPI inflation over the medium term.

Figure 2.20
Inflation expectations
(annual, years ahead)



Source: RBNZ Survey of Expectations (Business).

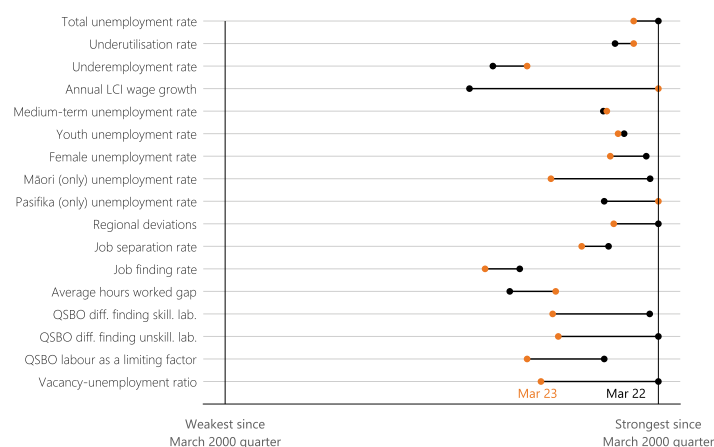
Note: The shaded area represents the MPC's 1 to 3 percent target range for annual CPI inflation over the medium term.

Figure 2.21
Unemployment rate
(unemployed people as a share of the labour force, seasonally adjusted)



Source: Stats NZ, RBNZ estimates.

Figure 2.22
Maximum sustainable employment (MSE) indicator suite



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

Note: The Reserve Bank uses a range of indicators when assessing maximum sustainable employment, consistent with clause 2.1b of the *Remit*. The vertical lines on the left-hand and right-hand sides represent the weakest and strongest data outcomes since 2000, respectively. For example, a lower unemployment rate is considered to be stronger. An orange dot to the left of a black dot means that the latest data outcome was weaker than in the March 2022 quarter, when the labour market was particularly tight.

Following lower inflation in the latest CPI data release, many measures of inflation expectations have declined from recent highs. This has particularly been the case at the 1-year and 2-year horizons (figure 2.20). The fall in inflation expectations is in line with falling pricing and cost pressure indicators in business sentiment surveys, although these remain at very high levels. Research discussed in chapter 4.2 found that household expectations for inflation have become more sensitive to recent inflation outturns in a high-inflation environment. While a higher sensitivity to recent inflation outturns makes it harder for monetary policy to reduce inflation expectations, it also means that expectations are likely to fall faster once actual inflation starts to decline more materially.

Many economies have experienced similar developments in inflation. For most of our key trading partners, headline inflation seems to have peaked and has started to fall, mainly due to falling energy prices and more stable food prices. However, inflation is still well above the targets of central banks, and measures of persistent or 'core' inflation remain at high levels.

The tight labour market is still supporting inflationary pressure

Inflationary pressure continues to be supported by a tight labour market, with employment above its maximum sustainable level. The unemployment rate remained very low at 3.4 percent in the March 2023 quarter, unchanged from the previous quarter (figure 2.21). Although most of our labour market indicators show that labour market pressures have eased since early 2022, they remain strong (figure 2.22). Labour market participation and employment as a share of the working-age population has increased to record highs, and the underutilisation rate remains near record lows.

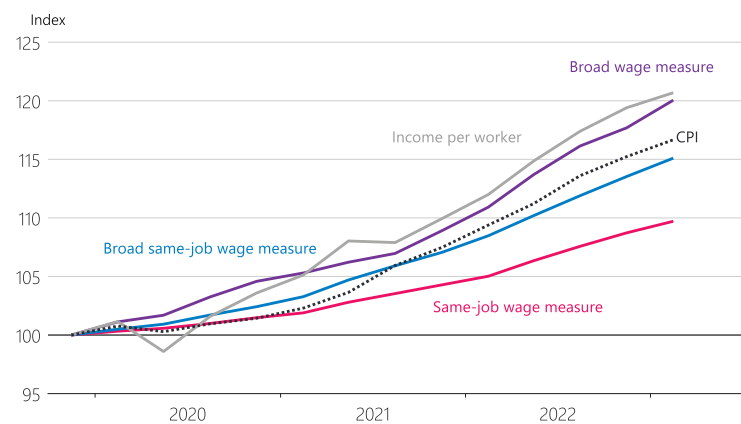
Same-job wage inflation continued to increase below CPI inflation in the March 2023 quarter, somewhat less than expected in the February *Statement*. However, broader wage and income measures – which also include the impacts of workers getting promoted, changing jobs or working more hours – grew at a faster pace than CPI inflation (figure 2.23).⁶ Consequently, average household income has remained robust relative to strong consumer price increases in the past two years. Very high employment, strong household income growth and accumulated savings are expected to provide some support to household spending in the near term.

High interest rates are required to return annual inflation to 2 percent

High interest rates are required to further slow demand relative to the economy's ability to supply goods and services sustainably. Lower demand will result in less pressure on available labour and capital resources in the economy. This will help to reduce upward pressure on prices, leading to lower domestic inflation. Slowing global growth is also expected to contribute to falling inflationary pressure through declining import price inflation and lower demand for our goods exports.

Labour market tightness is expected to decrease substantially over coming quarters, reducing wage inflation pressure. Easing labour market conditions are assumed to accompany declining economic activity. As a result, the unemployment rate is expected to increase from its current low level. Keeping the unemployment rate near current levels without experiencing unsustainably high wage and inflation pressures would require structural changes in the labour market that are beyond the control of the Reserve Bank.

Figure 2.23
Wage measures and headline CPI
(index=100 in Q4 2019)



Source: Stats NZ, RBNZ estimates.

Note: Same-job wage measure: The adjusted labour cost index (LCI) measures wage inflation for a fixed quantity and quality of labour.

Broad same-job wage measure: The unadjusted LCI measures the same as the adjusted LCI but includes any wage changes due to quality changes within an occupation (as reported by employers).

Broad wage measure: The Quarterly Employment Survey (QES) average hourly earnings measure the average hourly earnings across the economy. It is affected by opportunities that arise in a tight labour market, for example from promotions or shifts from low paying industries to high paying industries.

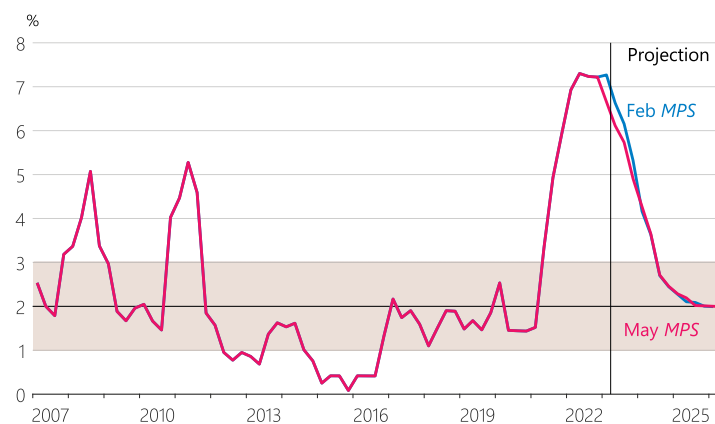
Income per worker: The QES total gross earnings per filled job measure the total income per job. In addition to the influence of the above, the QES income measure also takes into account employees working extra hours.

⁶ For more information on real wages see chapter 4.2 in the [November 2022 Statement](#).

While economic growth in the last quarter of 2022 was weaker than expected, an economic contraction over 2023 remains possible. However, the decline in the level of GDP is assumed to be less than was assumed in the February *Statement*. There remains considerable uncertainty about the timing of this contraction. The extent of the underlying contraction may also be masked by volatility in activity due to the recovery following the severe weather events.

Weaker demand is expected to lead to declines in non-tradables and tradables inflation over the medium term. Annual headline CPI inflation is assumed to return to within the 1 to 3 percent target range in the second half of 2024, and to 2 percent by the end of 2025 (figure 2.24).

Figure 2.24
CPI inflation
(annual)



Source: Stats NZ, RBNZ estimates.

Note: The shaded area represents the MPC's 1 to 3 percent target range for annual CPI inflation over the medium term.



Monetary policy outlook

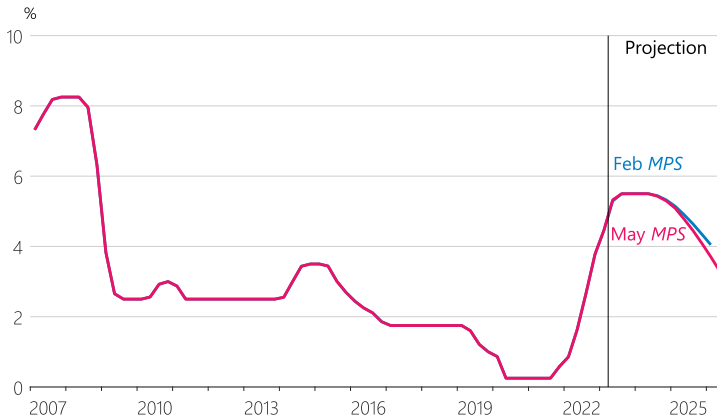
Overall, offsetting developments since the February *Statement* have resulted in the outlook for inflation and employment remaining broadly unchanged. Relative to the February *Statement*, higher net immigration, a slower decline in house prices and higher government spending are offset by the lower starting point level of GDP and consumer price inflation and a more negative outlook for our goods exports. Measures of core inflation remain elevated, but most near-term inflation expectation measures have declined.

Conditional on our central economic outlook, it is assumed that the OCR will need to follow a similar path to that assumed in the February *Statement* in order for the MPC to meet its inflation and employment objectives (figure 2.25).

Figure 2.25

OCR

(quarterly average)



Source: RBNZ estimates.



Global
developments
and outlook

CHAPTER
03

CHAPTER 3

Global developments and outlook

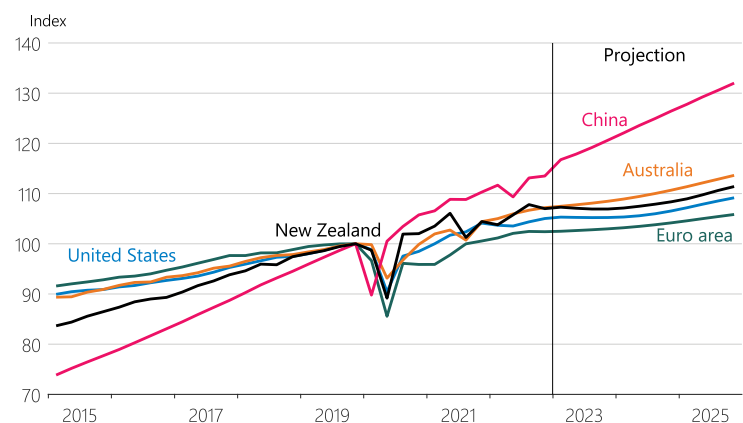
Growth has slowed to below trend in most of our key trading partner economies (figure 3.1). China is an exception, with activity rebounding following the removal of COVID-19 restrictions at the end of last year. Most other trading partners' growth has slowed, partly due to central bank tightening in response to high inflation. Headline inflation has continued to decline across economies. Underlying price pressures remain persistent, with demand exceeding supply in most economies.

Central banks have continued to increase interest rates. However, recent banking stress in the US and Europe has contributed to market participants revising down their expectations for future interest rates, particularly in the US. An additional tightening in credit conditions in the US as a result of recent banking sector stress is expected to reduce lending and dampen demand.

Global uncertainty is heightened due to recent banking stress

Stress has emerged in parts of the banking system in both the US and Europe since March 2023. This has resulted in volatility in financial markets and elevated uncertainty about the global economic outlook. Rising global interest rates have reduced the current market value of long-term financial assets such as government bonds and mortgage-backed securities. This has exposed vulnerabilities where interest rate risk has been inadequately hedged by some banks.

Figure 3.1
Key trading partner GDP
(index=100 in Q4 2019)



Source: Haver Analytics, Consensus Economics, RBNZ estimates.

Note: GDP forecasts are based on Consensus Economics estimates, except New Zealand's which is based on our current projection. Official estimates and data for Q1 2023 for China, the euro area and the US are shown here.

In early March, Silicon Valley Bank in the US failed after a loss in confidence led to rapid deposit withdrawals. The failure triggered investors and depositors to reassess the health of other financial institutions, particularly those with similar characteristics. These included banks with high proportions of assets sensitive to interest rate risk, such as commercial real estate, and those with relatively large proportions of uninsured deposits.

US authorities have launched a number of interventions to limit broader financial system contagion. Despite this, two other US banks have since failed, most recently First Republic Bank in early May. In Switzerland, authorities facilitated the merger of UBS with Credit Suisse, the two largest Switzerland-based global investment banks. This was in response to a loss of investor and client confidence in Credit Suisse following a reassessment of the bank's vulnerabilities by the market.

The recent banking stress has increased uncertainty around the global economic outlook. So far, broader spillovers to global financial markets have been limited, with a moderate increase in credit spreads and lower equity prices for some banks. However, the banking stress is expected to contribute to a tightening in credit conditions in the US in particular, resulting in lower loan growth and aggregate demand. Any renewed escalation in global financial system stress could result in a significant deterioration of the global economic outlook if not contained.

Global economic growth is slowing

Growth has slowed to below trend across most major economies, as central banks have tightened monetary policy. However, some timely indicators of global economic activity have improved since the February *Statement*. Growth is generally expected to remain below trend over 2023 and 2024. However, it is expected to recover towards trend over the medium term as central banks return inflation to target and monetary policy normalises to more neutral interest rates.

US GDP increased 1.6 percent annually in the March 2023 quarter, below rates of growth typically seen before the pandemic. The International Monetary Fund expects US growth of 1.6 percent over the year to December 2023. Uncertainty arising from stress in the banking sector poses downside risk to the US outlook, through lower confidence and reduced lending growth. Nonetheless, the US labour market remains resilient as job growth continues to exceed market expectations.

Euro area GDP grew 1.3 percent annually in the March 2023 quarter, although GDP was relatively flat compared to six months ago. Growth forecasts for the euro area have been revised higher for 2023, due to falling gas and energy prices in Europe and stronger demand from China. Labour markets in the euro area remain tight. Combined with high inflation, this is putting upward pressure on wage growth.

In Australia, timely indicators suggest economic growth remained subdued over the March 2023 quarter, despite a recent surge in net immigration. While the unemployment rate remains near historical lows, some indicators of labour demand have eased slightly, and higher population growth is supporting labour supply.

Economic growth in China increased sharply to 4.5 percent annually in the March 2023 quarter, due to a strong recovery following the removal of COVID-19 restrictions at the end of last year. Services and travel-related consumption have rebounded, fiscal and monetary policy support has remained supportive and the housing sector appears to have stabilised. While some indicators have softened in the past month, China's economy is forecast to expand by around 6 percent in 2023.

Headline inflation is easing, but underlying pressures persist

Headline inflation has continued to decline in most of our key trading partner economies (figure 3.2). In particular, energy prices have fallen and food prices are beginning to stabilise. Global commodity prices have eased from the elevated levels they reached following the Russian invasion of Ukraine. Inflationary pressures remain higher for services than they do for goods. Despite falling headline inflation, underlying price pressures remain firm as reflected in elevated core inflation (figure 3.3).

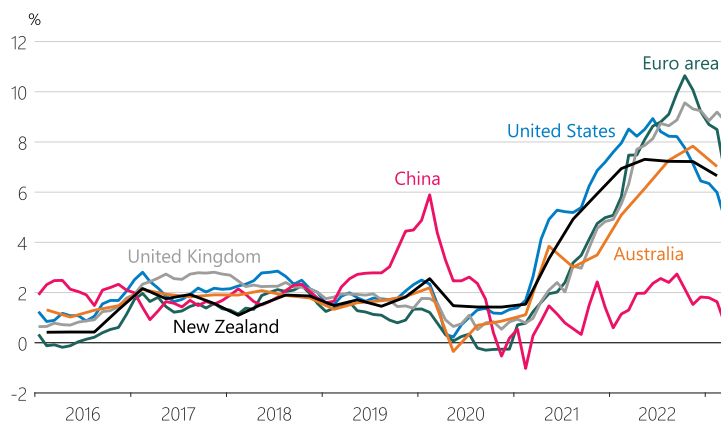
In the US, annual headline inflation has slowed to 4.9 percent, the lowest rate since May 2021. However, core inflation has remained elevated. This has been supported by continued increases in housing costs and other services, consistent with the tight labour market and strong wage growth.

Headline and core inflation in the euro area has remained notably higher than that in the US. This, in part, reflects higher energy prices as a result of Europe's proximity to the war in Ukraine. Headline inflation is also declining in Australia, but services inflation has increased to the highest level since 2001. This has been caused by strong price growth for holiday travel, medical services, rents and restaurant meals.

China continues to have relatively low headline and core inflation compared to most other key trading partners. Pass-through of international commodity prices to inflation in China has been modest, due to government intervention and weak domestic demand throughout the prolonged period of COVID-19 restrictions.

Figure 3.2

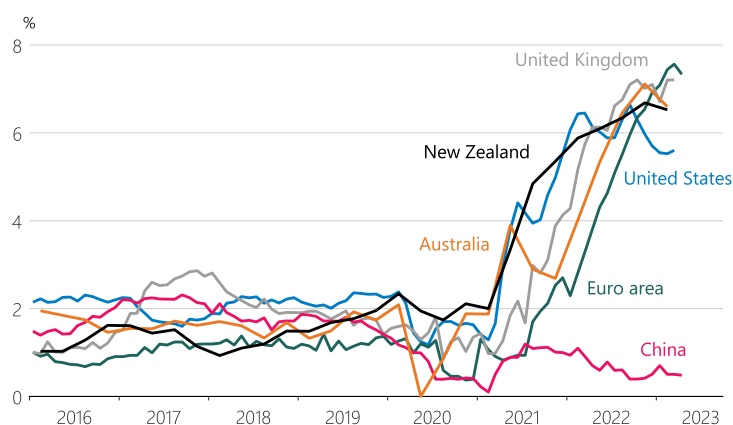
Headline inflation for key trading partners (annual)



Source: Haver Analytics.

Figure 3.3

Inflation excluding food and energy for key trading partners (annual)



Source: Haver Analytics.

Central banks continue to tighten, but at a slower pace

Most major central banks have continued to raise interest rates since the February *Statement*, although at a slower pace than in previous months (table 3.1). Market pricing reflects the expectation that central banks have now reached, or are near, peak policy rates in this tightening cycle (figure 3.4). The impact of past tightening is already beginning to be observed in declining headline inflation and some signs of moderating demand. The recent global monetary policy tightening cycle has resulted in policy rates above longer-run estimates of neutral interest rates in most major economies.

Table 3.1

Selected central bank policy rate changes

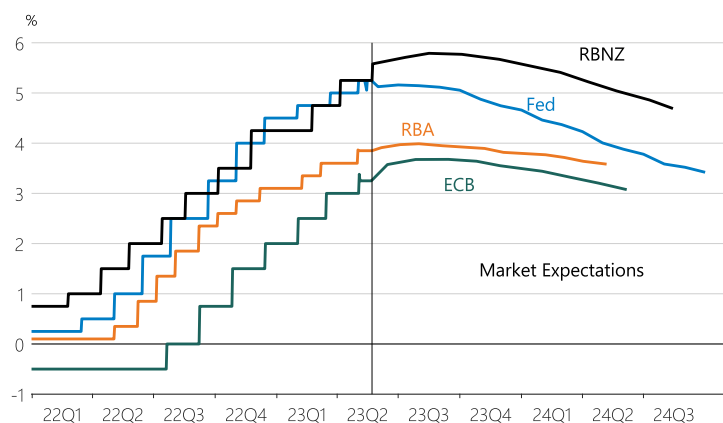
	Fed	ECB	BoE	RBA	RBNZ
Current policy rate (%)	5.00-5.25	3.25	4.50	3.85	5.25
Expected peak rate (%)	5.1	3.6	4.9	4.0	5.8
Previous policy move (bps)	+25	+25	+25	+25	+50
Expected next move (bps)	0	+25	+25	0	+25
Next meeting date	14 June	15 June	22 June	6 June	24 May

Source: Bloomberg.

Note: The 'expected peak rate' and 'expected next move' are implied by overnight indexed swaps as of 18 May 2023.

Market expectations for future interest rates in many economies have declined since the February *Statement*. This reflects expectations of weaker demand as a result of the recent banking stress, and the risk of further escalation of financial stress. This is particularly the case in the US, where market pricing now indicates that participants expect the policy rate to decrease by around 50 basis points by the end of 2023. Market participants expect central banks to begin reducing policy rates later this year or early next year as capacity pressures ease and inflation returns closer to target.

Figure 3.4
Central bank policy interest rates and market pricing for future policy rates
(as at 18 May 2023)



Source: Bloomberg.

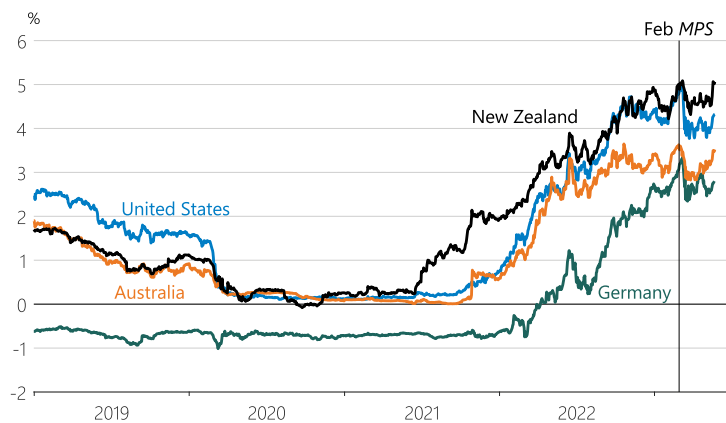
Note: For the RBA, RBNZ, and ECB market pricing is implied by overnight indexed swaps as of 18 May 2023. For the Fed market pricing is implied from Fed fund futures contracts as of 18 May 2023.

Financial markets have been volatile

Global financial market volatility has increased since the February *Statement*, largely as a result of the recent banking stress in the US and Europe. However, general spillovers to financial markets have been limited. Global credit spreads for investment-grade issuers have increased moderately, although they remain well below the levels seen in early 2020. Equity prices for some banks have declined. At present, New Zealand credit spreads have not been materially impacted by these developments. However, wider global credit spreads will increase the cost of New Zealand banks' offshore funding (see chapter 5).

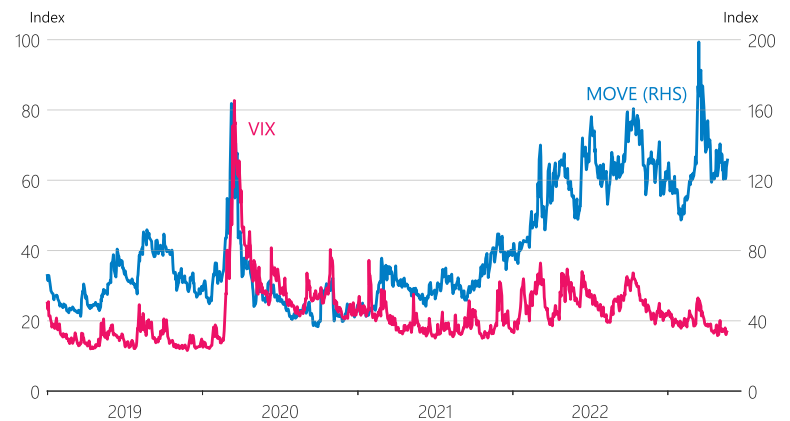
Banking stress in the US has contributed to market participants lowering expectations of further monetary policy tightening, and bringing forward their expectations of policy cuts. This is partially due to the expected effects of the banking stress on lending and economic activity. As a result, sovereign yields have fallen since the February *Statement* in both the US and euro area (figure 3.5). Large declines in equity prices as a result of the banking stress have mostly been limited to financial institutions perceived to have vulnerabilities similar to those of the failed banks. Global equity prices have remained largely unchanged or slightly higher since the February *Statement*. Measures of volatility reflect the greater effect of banking stress on bond markets than on equity markets, with elevated bond market volatility but stability in equity markets (figure 3.6).

Figure 3.5
2-year sovereign bond yields



Source: Bloomberg.

Figure 3.6
Measures of market volatility



Source: Bloomberg.

Note: The VIX and MOVE indices are measures of volatility in equity markets and bond markets, respectively.



Special topics

CHAPTER
04

CHAPTER 4

Special topics

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

Topics for the May *Statement* included:

1. The recovery in international tourism over the 2022/23 summer
2. Have inflation expectations become more sensitive to higher inflation?

Special topics in the past 12 months

Topic	Date/publication
The international dimension of non-tradables inflation	<u>February 2023 Statement (Chapter 4)</u>
Monitoring the labour market for inflationary pressures with high-frequency microdata	<u>February 2023 Statement (Chapter 4)</u>
The neutral interest rate	<u>November 2022 Statement (Chapter 4)</u>
Developments in real wages	<u>November 2022 Statement (Chapter 4)</u>
Global inflation developments	<u>August 2022 Statement (Chapter 3)</u>
Assessing recent inflation surprises	<u>August 2022 Statement (Chapter 3)</u>
Business conditions	<u>August 2022 Statement (Chapter 3)</u>
Global inflation developments	<u>May 2022 Statement (Chapter 4)</u>
The outlook for household spending, house prices, and construction	<u>May 2022 Statement (Chapter 4)</u>

1

The recovery in international tourism over the 2022/23 summer

Summary

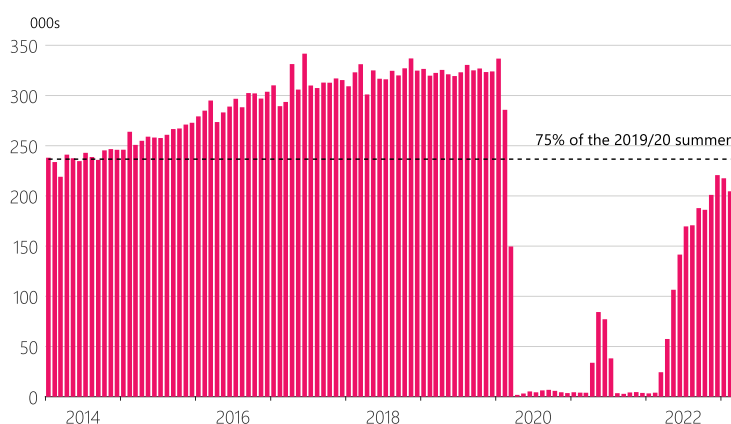
- Prior to COVID-19, tourism was one of New Zealand's largest export industries. International tourism accounted for roughly 20 percent of total exports.
- We have been assuming that pent-up demand for travel would be strong, supporting a swift recovery in tourism following the border reopening. Our forecast for services export volumes in the February *Statement* assumed that capacity constraints would limit the 2022/23 summer to 75 percent of pre-COVID-19 levels in real terms (that is, adjusted for higher overall prices).
- To date, available data have been consistent with this assumption, so it has been maintained in the current projection. While factors such as the recovery of travel between China and New Zealand and the weak outlook for the global economy pose some risk to our projection, we assess the risks as being broadly balanced.

Tourism has recovered broadly as expected

Recent tourism-related data have generally been in line with our assumption that the available capacity of airlines and tourism operators would limit the recovery of international tourism over the 2022/23 summer to 75 percent of pre-COVID-19 levels. Short-term overseas visitor arrivals for the 2022/23 summer (December-February) were 68 percent of the levels for the 2019/20 summer (figure 4.1). In January 2023 the number of international phone sim cards in New Zealand – another indicator of international tourism – was 83 percent of the same month in 2020 (figure 4.2). While the number of tourists in February 2023 remained high, we started to see the typical seasonal slowdown in visitor numbers, in line with the pre-pandemic pattern.

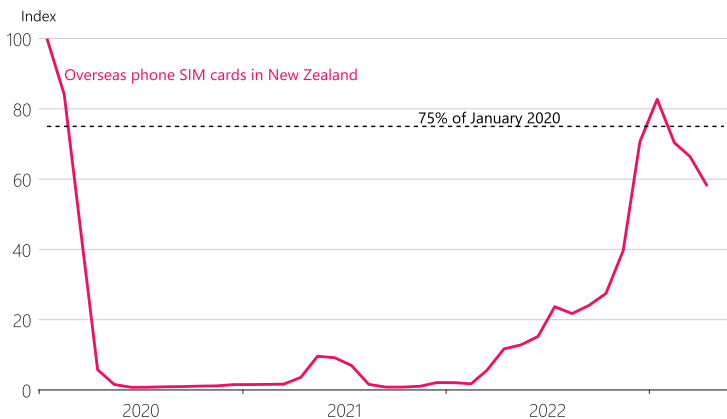
Foreign credit card spending in New Zealand has reached 90 percent of the 2019/20 summer levels (figure 4.3). Given the increase in prices in New Zealand generally, these data must be adjusted for inflation to provide a clear signal of spending strength. When adjusted for inflation, foreign credit card spending in the December 2022 quarter reached 79 percent of the level in the December 2019 quarter. Although there have been fewer arrivals this summer than was typical pre-COVID-19, real spending per visitor has been higher.

Figure 4.1
Short-term overseas visitor arrivals
(monthly, seasonally adjusted)



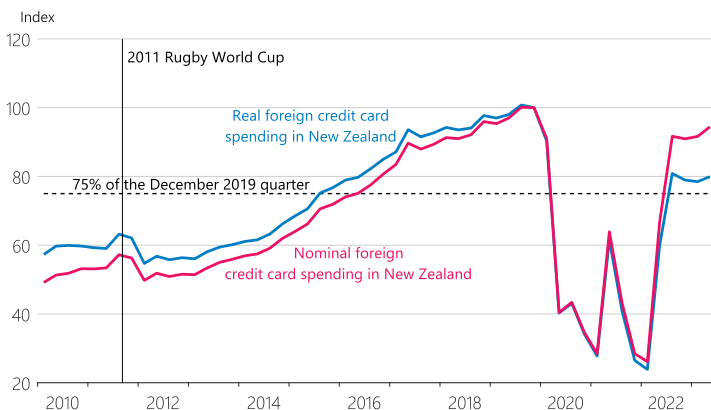
Source: Stats NZ, RBNZ estimates.

Figure 4.2
Overseas phone SIM cards in NZ
(index=100 at January 2020)



Source: Tourism New Zealand, Data Ventures.

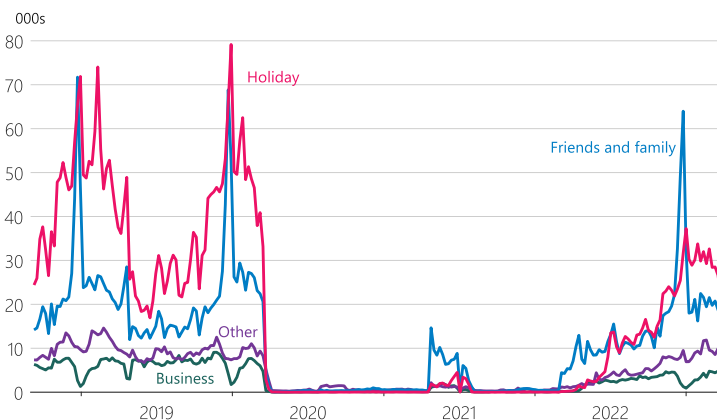
Figure 4.3
Overseas credit card spending in NZ
(seasonally adjusted, index=100 at Q4 2019)



Source: Stats NZ, RBNZ estimates.

Note: 'Real foreign credit card spending in NZ' is 'nominal foreign credit card spending in NZ' deflated with CPI.

Figure 4.4
Number of short-term arrivals by travel purpose
(weekly)

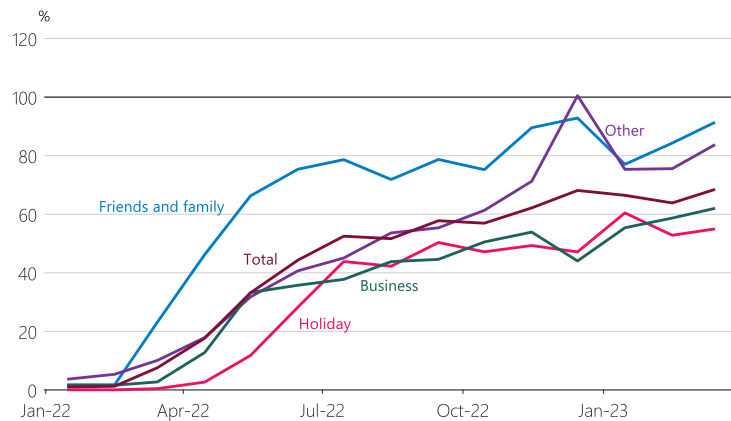


Source: Stats NZ.

The higher spending per visitor is in line with feedback we have received from businesses suggesting that the composition of visitors was different from that before COVID-19. In the 2022/23 summer New Zealand had a strong recovery in visitors from Australia, Europe and North America. However, visitors from China and other Asian countries recovered to a lesser extent (figure 4.7). Income per capita is higher in Australia, Europe and North America than it is in China and other Asian countries, contributing to higher average visitor spending than before COVID-19. The higher spending per visitor may have also resulted from visitors staying longer than they did before COVID-19 (figure 4.6).

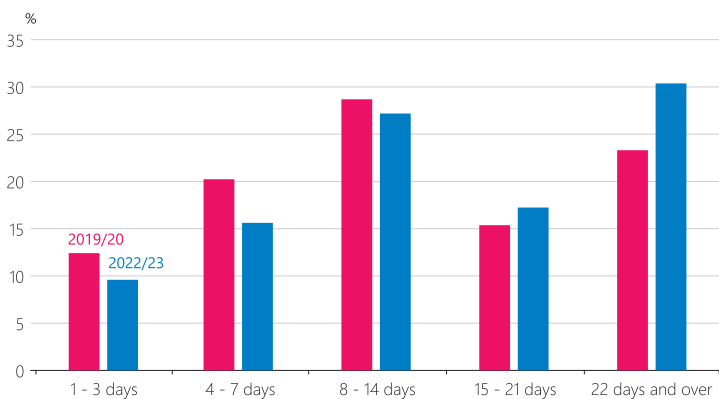
Tourism-related businesses noted that the FIFA Women’s World Cup in July and August 2023 is likely to have a material impact on services exports. A bump in foreign credit card spending can be observed around the time of the 2011 Rugby World Cup (figure 4.3).

Figure 4.5
Short-term arrivals by travel purpose
(relative to the same month in 2019)



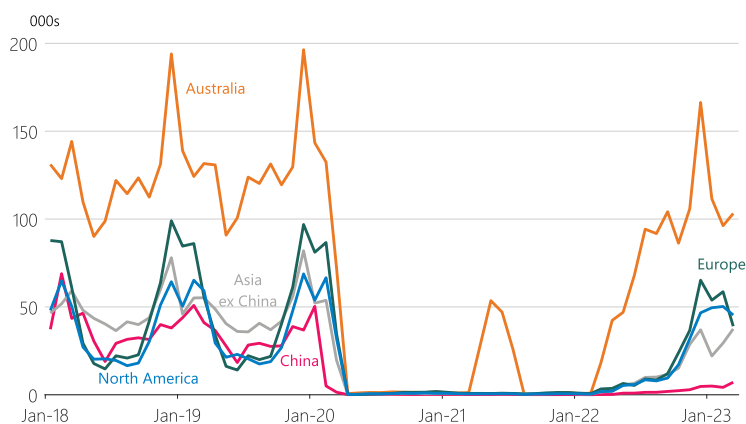
Source: Stats NZ.

Figure 4.6
Average length of stay of visitors
(December to February)



Source: Stats NZ.

Figure 4.7
Visitor arrivals by country/continent of residence
(monthly)



Source: Stats NZ.

How has the composition of visitors changed?

In 2019, about half of all the short-term arrivals to New Zealand declared their purpose of travel to be a holiday, and more than a quarter were visiting friends and family (figure 4.4). Since the border reopened, the number of arrivals visiting friends and family has recovered the fastest, reaching more than 80 percent of the 2019 levels (figure 4.5). By contrast, holiday arrivals have recovered the slowest out of all travel purposes, reaching roughly half of the 2019 levels. The relatively rapid increase in the number of people visiting friends and family is consistent with a catch-up from deferred family travel and family reunification following the extended period of closed borders. A comparatively slow recovery in holiday travel is consistent with the relatively late border reopening of China, a key market for overseas tourists coming to New Zealand before the pandemic.

The near-term shift towards friends and family travel has also been associated with an increase in the average length of stay of visitors (figure 4.6). This reflects the fact that those visiting friends and family tend to stay longer than holiday arrivals.

By country of residence, arrivals from Australia and North America have recovered the fastest, reaching 77 percent of 2019 levels in February (figure 4.7). An expansion of direct flights to various cities in the US has helped support strong arrival numbers from the region. European arrival numbers continue to recover steadily, reaching 68 percent of 2019 levels. Arrival numbers from Asia remain low. This mostly reflects fewer visitors from China (8 percent of 2019 levels) as travel restrictions in the country were eased later than those in most other countries. China was our second largest source of arrivals prior to the COVID-19 pandemic.

Risks to the outlook for service exports

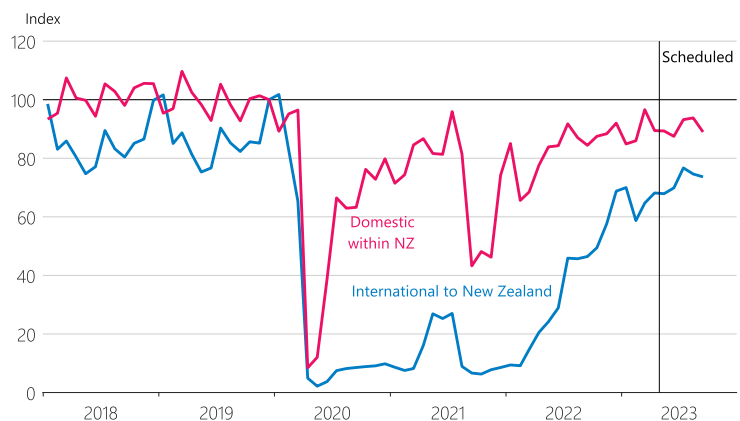
Overall, we assess the risks to our forecast for services export volumes in the May *Statement* to be broadly balanced. Key risks include:

China returning to global travel (upside risk): In February 2023, visitors from China accounted for 2 percent of visitor arrivals, well below the 12 percent of all visitors in the same month in 2019. The return of China to the global travel market and the announcement that New Zealand has been included on a list of 20 approved destinations for group tourism will likely support New Zealand's tourism recovery throughout 2023. The extent and pace of this support remain uncertain.

Airline capacity (balanced risk): Recent feedback from businesses was that the pace of the tourism recovery will depend on when and to what degree airlines reintroduce connections to New Zealand. While international flight capacity is steadily increasing, it remains below pre-COVID-19 levels (figure 4.8). Key near-term constraints on reintroducing capacity include lack of aircraft and global labour shortages.

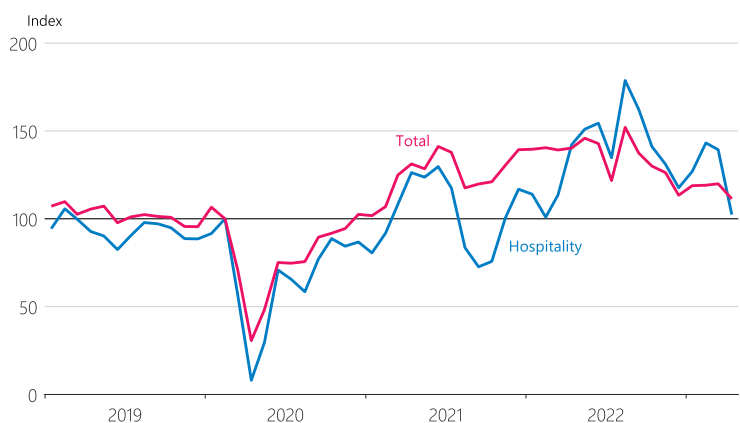
Timing of domestic versus global slowdown (balanced risk): More broadly, our tourism recovery will depend on how the domestic economy evolves relative to our trading partners. Relative growth trends could also affect services export volumes through the exchange rate channel. For example, if the economic slowdown in New Zealand is more abrupt than in our trading partners, we could see the New Zealand dollar depreciate and increased demand from tourists as New Zealand becomes a relatively cheap travel option.

Figure 4.8
Flight capacity to and within NZ
(index=100 at December 2019)



Source: Tourism New Zealand, Sabre Market Intelligence.

Figure 4.9
Online job ads
(index=100 at February 2020)



Source: MBIE.

Labour supply constraints (downside risk): The number of people directly employed in tourism decreased from 221,000 in March 2019 to 145,000 in March 2022, before the full border reopening (see box A). When we talked to businesses, they often noted that with the tourism recovery underway, operators were facing shortages of both skilled and unskilled labour. This is consistent with job advertisements at elevated levels, particularly in the hospitality industry, over the second half of 2022 and the summer 2022/23 period (figure 4.9). Labour constraints could lead to lower-than-assumed capacity in the tourism industry, reducing real activity.

Box A

Employment recovery in tourism-related industries

Tourism directly employed 7.9 percent of New Zealand's working population in the March 2020 year. This is in line with tourism being one of New Zealand's largest export industries prior to COVID-19. The closing of the border to international tourists led to workers formerly employed in the tourism sector moving to other industries.⁷ This resulted in an annual 35.5 percent fall in directly employed tourism workers (around 78,000 people) in March 2021, with a provisional recovery of only 2.6 percent in the year to March 2022.

As international tourists return, we would expect workers to be pulled back into tourism-related sectors. Using labour market microdata from Stats NZ's Integrated Data Infrastructure (IDI) database (based on administrative tax data from the Inland Revenue Department), we are able to monitor employment at a more detailed level.⁸ In addition, these data are available with a relatively short time lag, allowing us to view employment movements until the end of February 2023.

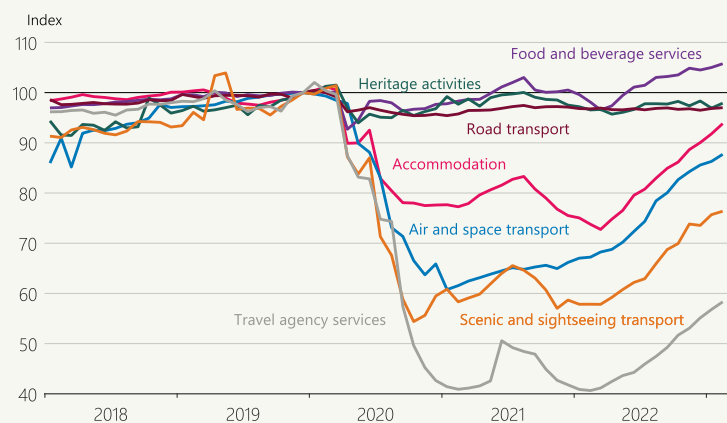
For the initial analysis, we look at employment in seven tourism-related sub-industries, and classify them into two groups. The affected group comprises the sub-industries where employment fell significantly following the closure of the border to international tourists (figure A1). The less affected group captures the sub-industries where employment remained relatively stable despite the border closure. The industries in this group were likely supported by robust domestic tourism.

Affected: Accommodation, air and space transport, scenic and sightseeing transport, and travel agency services.

Less affected: Food and beverage services, heritage activities, and road transport.

Figure A1

Total employment in tourism-related sub-industries
(index=100 at December 2019)



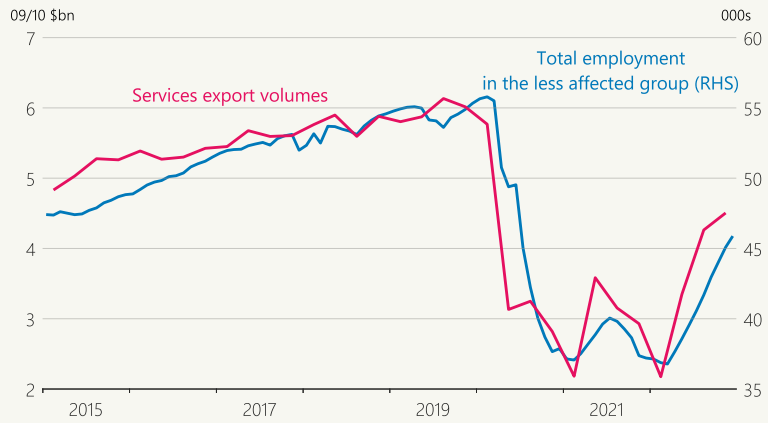
Source: Stats NZ IDI.

7 See Zheng & Sing (2023), 'Sectoral Reallocation and Income Growth in the Labour Market During the COVID-19 Pandemic', *Analytical Note*, Reserve Bank of New Zealand.

8 These results are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI) and Longitudinal Business Database (LBD) which are carefully managed by Stats NZ. For more information about the IDI and LBD please visit <https://www.stats.govt.nz/integrated-data/>. The results are based in part on tax data supplied by Inland Revenue to Stats NZ under the Tax Administration Act 1994 for statistical purposes. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.

In the past 12 months, as international tourism has returned to New Zealand, total employment in the affected group has increased (figure A2). The recovery in services export volumes to date has been associated with an increase in the number of people working in accommodation, air and space transport, scenic and sightseeing transport, and travel agency services. Tourism-related industries are showing an inflow of workers, but total employment is still well below the pre-COVID-19 levels.

Figure A2
Quarterly services export volumes and total employment in tourism-related sub-industries
(seasonally adjusted)



Source: Stats NZ, Stats NZ IDI.

2

Have inflation expectations become more sensitive to higher inflation?

Summary

- New Zealand households' expectations of future inflation depend on past actual inflation, which we term as an 'adaptive' expectations process.
- Households' one-year-ahead inflation expectations have become more sensitive to actual inflation in recent years.
- Households pay less attention to inflation when inflation is low and stable, and more attention to inflation when it is high. We capture this behaviour using the concept of 'rational inattention'.
- Higher inflation expectations make it harder for monetary policy to reduce high inflation. All else being equal, interest rates need to be higher to stop high inflation becoming entrenched.
- However, once actual inflation falls due to monetary policy and other factors, households' inflation expectations are likely to decrease quickly.

Inflation expectations play a crucial role in shaping how inflation evolves. Expectations can either increase or decrease the momentum of price changes. When individuals and businesses expect inflation to be higher, they adjust their behaviour accordingly. For example, they may demand higher wages and increase prices, which then leads to higher actual inflation. By effectively communicating a commitment to price stability and demonstrating a credible track record, central banks can foster confidence in households and businesses that inflation will remain low and stable over the medium term. This confidence can shape inflation expectations and ultimately influence actual inflation outcomes.

Actual inflation and inflation expectations have increased significantly over the last two years. Only recently actual inflation and many measures of inflation expectations have started to decline, but they remain high. When changes in actual inflation are very large, the dynamics of inflation expectations may change. Businesses and households may become more attentive to current high inflation, as it becomes increasingly costly for them when they get their expectations repeatedly wrong. The analysis in this chapter shows that this is the case for New Zealand households.

New Zealand households' inflation expectations are adaptive

Understanding how households form their expectations of inflation has important implications for the setting and effectiveness of monetary policy. This understanding is particularly important in the current environment, with the sharp increase in headline inflation and inflation expectations since the end of 2020 (figure 4.10).

Policymakers consider these expectations to be a major factor in household decisions, as they affect spending and saving choices.

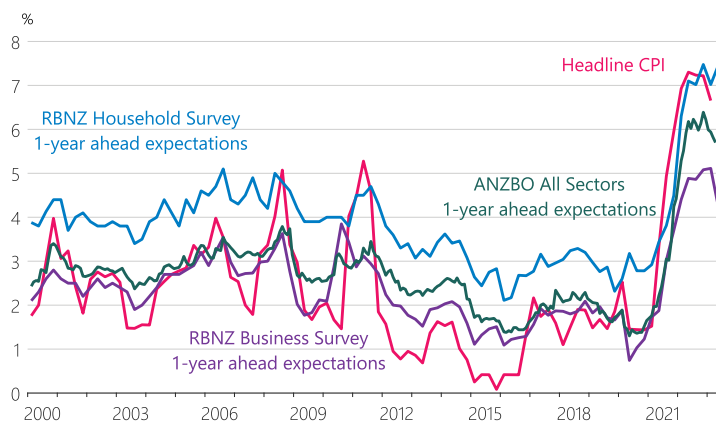
In order to better understand how inflation expectations are formed in New Zealand, we use the Reserve Bank's *Tara-ā-Whare Household Expectations Survey*, collating 12-months-ahead inflation expectations from about 1,000 households each quarter, starting from the June 1998 quarter. We use household expectations in this particular analysis, rather than expectations of businesses (in the Reserve Bank's *Survey of Expectations*), due to the household dataset being larger and therefore allowing us to assess the different models more robustly.

Households have different amounts of information available to them. It is also costly for households to access and process information. In the literature, several models assume that the formation of inflation expectations is based on households' perceptions of current and/or past inflation.

We tested different empirical models to see which best explains the formation of inflation expectations by New Zealand households. We find that the 'adaptive' expectations model better explains how New Zealand households form their inflation expectations, compared to other models.⁹ Under the 'adaptive' expectations concept, households form their expectations about future inflation based on past inflation and their past inflation expectations. Households update their expectations as new information becomes available.

Figure 4.10

Headline inflation and one-year-ahead inflation expectations (annual)



Source: Stats NZ, ANZ Business Outlook Survey, RBNZ *Survey of Expectations* (Business), RBNZ *Tara-ā-Whare Household Expectations Survey*.

⁹ This finding is consistent with previous Reserve Bank research. See for example, Karagedikli and McDermott (2016), 'Inflation expectations and low inflation in New Zealand', *Discussion Paper*, Reserve Bank of New Zealand and McDonald (2017), 'Does past inflation predict the future', *Analytical Note*, Reserve Bank of New Zealand.

Inflation expectations have become more sensitive to recent inflation outturns

Using the ‘adaptive’ expectations concept, we can estimate how strongly past inflation expectations and past actual inflation affect households’ inflation expectations. We also test if the strength of these effects has changed over time.

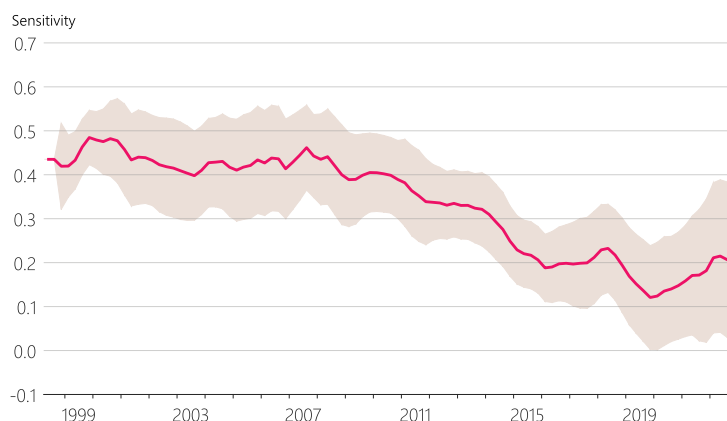
We estimate that the influence of past inflation expectations on households’ current inflation expectations has generally weakened since 1998 (figure 4.11a). Conversely, recent actual inflation outturns have become more important in the formation of households’ inflation expectations (figure 4.11b). Since late 2019, recent actual inflation has become an increasingly important determinant of households’ inflation expectations. This may be due to the current high-inflation environment.

More emphasis on recent inflation outturns when forming inflation expectations means that households’ expectations will update more quickly when actual inflation changes significantly. This implies that if high levels of inflation were to persist, for instance during a series of successive adverse supply shocks, households may be more likely to demand higher wages in response. Businesses may then be more likely to pass on these higher wage costs to higher prices. Consequently, inflation could become more generalised throughout the economy and rise faster.

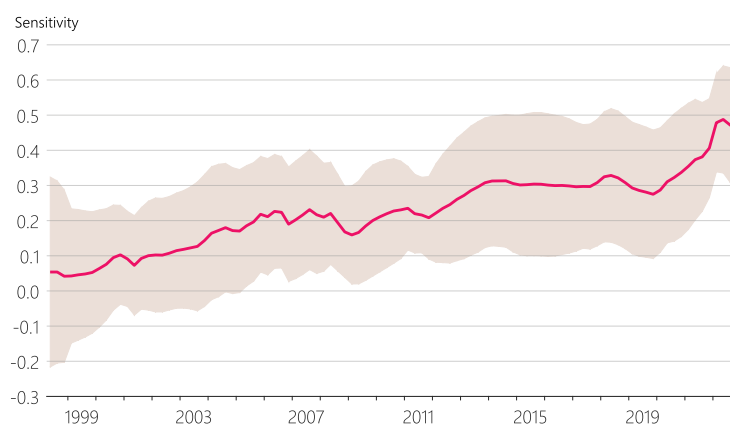
These factors can make it harder for monetary policy to reduce actual inflation when inflation expectations are elevated. All else being equal, interest rates would need to be higher to lower actual inflation. On the other hand, inflation expectations would likely decline much faster once monetary policy and other factors have led to a reduction in actual inflation, since households adjust their inflation expectations more quickly to actual inflation.

Figure 4.11
Sensitivity of household expectations

(a) to past inflation expectations



(b) to recent actual inflation



Source: RBNZ estimates.

Note: We estimate a time-varying parameter model to get these sensitivities. For example, see Kamber et al. (2016), ‘Modelling the business cycle of a small open economy: The Reserve Bank of New Zealand’s DSGE model’, *Economic Modelling*, Vol. 59, Pages 546-569.

New Zealand households pay more attention to inflation when it is high

A possible explanation for households' inflation expectations appearing to have become more sensitive to actual inflation is that they pay more attention to inflation when it is at a high level.

In an information-rich environment where processing information is costly, households need to decide how much time and energy they will spend on figuring out how inflation is likely to evolve. The concept of 'rational inattention' suggests that if a change in inflation is large enough to cause households to pay more attention, their decision-making would differ compared to periods when they paid less attention. As the general price level increases, the opportunity cost of ignoring inflation becomes higher. This environment encourages households to become more attentive to current inflation and to give it further consideration in their decision-making. This also implies that as people pay more attention to inflation, they are able to better predict actual inflation and are more responsive to new information.

One way to measure rational inattention is to calculate the share of households that report they do not know what the current inflation rate is. Using the same data from the *Tarā-ā-Whare Household Expectations Survey*, we found when actual inflation increased, the share of people who answered "I do not know the current inflation rate" declined. The share of "Don't Know" responses was significantly lower in periods of high inflation above the 2 percent midpoint of the MPC's medium-term inflation target band, compared to periods of low inflation below 2 percent. These results also held at the 3 percent level, the top of the MPC's inflation target band. This provides evidence that New Zealand households are, naturally, paying more attention to inflation when it is higher. It confirms the Reserve Bank's assumption that the risk of high inflation becoming entrenched has increased since 2021.

Another way to assess whether households pay more attention to higher inflation is to test if households correct their past inflation expectation mistakes more. We observe that New Zealand households put a higher weight on past mistakes in times of high inflation above 2 percent than they do in times of inflation below 2 percent. These results also hold at the 3 percent threshold. This implies that households are likely to pay more attention to their forecast misses and adjust their over- or under-shooting of expectations when inflation is high. As a result, New Zealand households have tended to forecast inflation better when inflation is higher.



Financial
conditions

CHAPTER
05

CHAPTER 5

Financial conditions

Monetary policy affects economic activity by influencing financial conditions in New Zealand. These include the interest rates at which households and businesses save and borrow, the exchange rate, and other factors such as credit availability.



Overall financial conditions are broadly similar to those at the time of the February Statement. Short-term retail interest rates are higher, while medium- and long-term wholesale rates have declined.

Market participants' expectations for the OCR over the near term have increased since the February Statement. As at 18 May, pricing for the peak in the OCR in this tightening cycle was around 5.75 percent, while pricing for the level of the OCR in 12-months' time was about 50 basis points higher than at the February Statement (figure 5.1). Market participants expect the OCR to begin declining from its peak level later this year.

Medium- and long-term wholesale interest rates in New Zealand have fallen slightly since the February Statement, with swap rates across the 3-year to 10-year tenors down by around 5 to 15 basis points. However, the 1-year swap rate is 40 basis points higher since the February Statement, while the 2-year swap rate has increased by 15 basis points. This contrasts with swap rates in other advanced economies that declined sharply through March 2023 in response to banking stress in the US and Europe, and have remained around those lower levels in the weeks since (figure 5.2). Increases in short-term interest rates alongside declines in domestic wholesale interest rates at longer terms have led the interest rate swap curve to invert further than at the time of the February Statement. Inverted interest rate curves usually indicate expectations for slowing economic growth.

Offshore economic and financial developments have led to an increase in global financial market volatility. This includes recent developments relating to US sovereign debt limits, with US financial debt likely to reach its statutory limit in June. Risks around the debt ceiling are contributing to significant volatility in US treasury bills and significant

price increases for credit default swaps, which are a form of insurance against sovereign default. Despite this volatility, New Zealand financial markets have continued to function well (figure 5.3). The New Zealand dollar has appreciated slightly on a trade-weighted basis since the February Statement (figure 5.4). The currency has remained relatively resilient to the weaker global risk appetite, and been supported by wider interest rate differentials. Movements in the New Zealand dollar have been relatively small since the start of the year, particularly in the context of the general increase in financial market volatility.

Both short-term mortgage and term deposit rates have increased since the February Statement, and by slightly more than comparable wholesale rates. However, longer-term mortgage rates have fallen, leading the mortgage rate curve to invert further. The 1-year mortgage rate is currently around 60 basis points higher than the 5-year mortgage rate, which is the largest absolute difference since 2008. Interest rates on the popular 6-month and 1-year term deposits, which make up a large percentage of banks' core funding, have increased. This has marginally narrowed the spread between term deposit rates and comparable wholesale rates (figure 5.5). However, these spreads remain negative compared to moderately positive pre-pandemic averages, and are holding down overall funding costs for New Zealand banks. The cost of raising long-term wholesale bank funding relative to benchmark wholesale rates (credit spreads) has increased slightly, but it has remained relatively stable since the February Statement (figure 5.6).

Table 5.1

Developments in domestic financial conditions as at 18 May 2023

Wholesale interest rates	
Market pricing for the OCR	<ul style="list-style-type: none"> Current market pricing for the OCR is higher over the near term than at the time of the February <i>Statement</i>. Financial market expectations for the peak OCR in this cycle, as measured by overnight indexed swap (OIS) pricing, have increased by around 45 basis points, to 5.75 percent. However, expectations for the level of the OCR in early 2024 are lower than this peak level, with the OCR expected to be at around 5.45 percent after the February 2024 <i>Statement</i>. The current and expected OCR settings are contractionary, sitting well above our estimates of the neutral OCR (see figure 7.4). Recent moves in OCR expectations have been strongly influenced by domestic developments. To the upside, key drivers include the larger-than-expected OCR increase at the Monetary Policy Review (MPR) in April, the relatively strong March 2023 quarter labour market data, and the larger government expenditure announced at the May 2023 <i>Budget</i>. This has been partly offset by weaker-than-expected December 2022 quarter GDP data, and March 2023 quarter inflation data and inflation expectations data, as well as reduced expectations for monetary policy tightening offshore in response to the banking stress in the US and Europe.
New Zealand Government Bonds	<ul style="list-style-type: none"> Medium- and long-term New Zealand Government Bond (NZGB) yields have decreased slightly since the February <i>Statement</i>. Primarily offshore developments have contributed to downward pressure on NZGB yields since the February <i>Statement</i>. The NZGB market has continued to function relatively well despite the increase in global fixed income volatility through March 2023. Measures of NZGB market functioning, such as bid-ask spreads (how far apart buyers and sellers are from reaching an agreed price to trade) and the intraday range for the 10-year NZGB (the difference between the low and high price on a given trading day) are both around their historical averages after increasing in March 2023. Demand for NZGBs at New Zealand Debt Management (NZDM) tenders has remained relatively robust, with strong bid-cover ratios (the volume of bids relative to the volume of bonds offered), especially in recent weeks.
Interest rate swaps	<ul style="list-style-type: none"> Moves in New Zealand interest rate swaps have been broadly consistent with the changes in NZGB yields since the February <i>Statement</i>. The 1-year swap rate is around 40 basis points higher over this period, while rates beyond the 2-year tenor are 5 to 15 basis points lower. As a consequence, the interest rate swap curve has inverted further, with the difference between 2- and 10-year swap rates currently at 95 basis points. Global interest rate swaps declined sharply in March in response to the banking stress in the US and Europe and have continued to trade around these lower levels in recent weeks. These global rates continue to be a key influence on domestic interest rate movements. The US 2-year interest rate swap rate moved significantly lower through this period, which contributed to declines in the equivalent New Zealand swap rate, through this period. However, the difference between short-term New Zealand swap rates and equivalent rates in other countries has widened, partly as a result of higher near-term domestic monetary policy expectations.

New Zealand dollar

Interest rate differentials

- The difference between interest rates in New Zealand and those in major economies such as Australia, the US and Europe widened in March 2023, and New Zealand short-term interest rates have remained higher over recent weeks. For example, the difference between the 2-year NZGB yield and the 2-year US government bond yield increased sharply in March 2023, and currently sits at 95 basis points.
- Increases in New Zealand interest rates relative to key trading partners would typically be associated with an appreciation in the New Zealand dollar. Widening interest rate differentials have provided support to the New Zealand dollar since the February *Statement*, even as risk sentiment and commodity prices have declined, on average, over this period.

Risk sentiment

- During periods of high uncertainty or volatility, financial market participants' willingness to take on additional risk decreases and demand for safe haven currencies, such as the US dollar, increases. Typically, more negative risk sentiment is associated with a depreciating New Zealand dollar.
- Market risk sentiment has broadly deteriorated since the February *Statement*, in response to the banking stress in the US and Europe and the subsequent increased uncertainty for the future path of global monetary policy settings. Despite this, the New Zealand dollar has remained relatively steady during this period. A potential explanation for this is that market participants expect limited pass-through from the recent banking stress in the US and Europe to economic activity in New Zealand.

Commodity prices

- Prices of key export commodities in New Zealand have continued to fall since the February *Statement*, although they have stabilised slightly in recent weeks.
- Declines in New Zealand's key export commodity prices tend to be associated with a depreciation in the New Zealand dollar, all else being equal.

Retail interest rates

Mortgage rates

- The mortgage rate curve has continued to invert further in recent months. The average 1-year mortgage rate has increased by 10 basis points since the February *Statement*, while mortgage rates in the 3- to 5-year part of the curve have fallen by 35 to 50 basis points. Despite this curve inversion, the share of shorter fixed-term loans as a proportion of total new residential mortgage lending has continued to increase.

Deposit rates

- Term deposit rates have increased since the February *Statement*. Rates at the 6-month and 1-year tenors have increased by 65 basis points and 40 basis points respectively, resulting in a narrower spread to comparable wholesale rates. However, these spreads remain negative compared to moderately positive pre-pandemic averages. Bonus saver interest rates have also been slow to increase, and their spread to the OCR is significantly below pre-COVID-19 averages.
- The term deposit curve is now inverted, with the 1-year rate around 60 basis points higher than the 5-year term deposit rate.

Bank funding conditions

Funding composition

- Term deposit volumes have continued to increase since the February *Statement*, particularly in the 6-month and 1-year terms. Depositors have continued to switch from on-call accounts, as the spread between term and on-call deposit rates has continued to widen. Term deposit volumes grew by around \$3 billion in March, while on-call deposits declined by around \$1 billion.
- Banks remain well funded and have strong liquidity buffers. Lower-cost deposits remain a larger share of bank funding compared to pre-COVID-19 averages, and this has contributed to lower average bank funding costs. Bank core funding ratios remain high, at 90.4 percent in March.

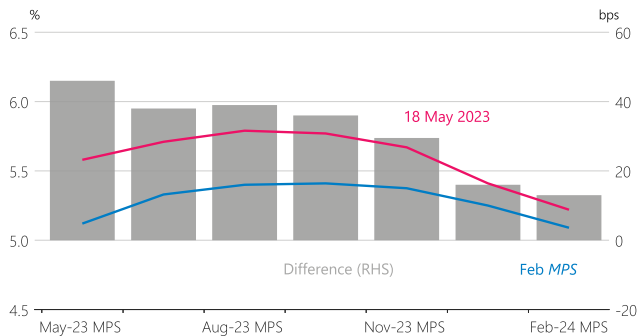
Credit spreads

- The cost of raising long-term wholesale bank funding relative to benchmark wholesale rates widened in March, in line with the overseas banking sector stress. However, bank credit spreads, both domestically and offshore, have narrowed as the most acute global financial stability concerns have eased.
 - Domestic bank credit spreads are currently around the same level as at the February *Statement*, having fully retraced increases through the March period. However, offshore credit spreads have remained slightly higher over this period. This is contributing to higher average funding costs for the largest New Zealand banks, which obtain a large portion of their wholesale funding offshore.
-

Charts

All charts are as at 18 May 2023.

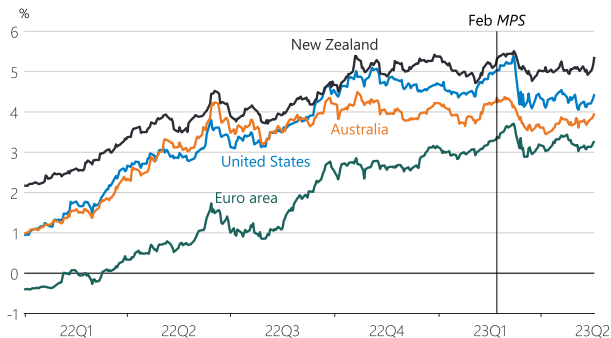
Figure 5.1
Market expectations for the OCR



Source: Bloomberg.

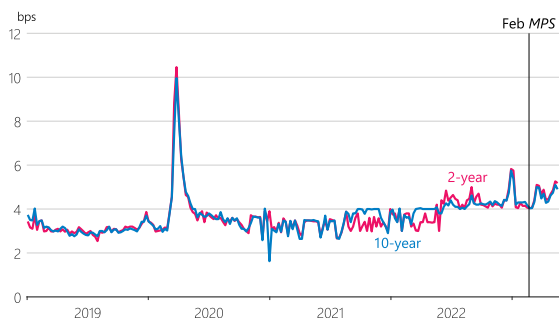
Note: Each data point represents market expectations of the level of the OCR at a given point in the future, as measured by overnight indexed swap pricing. For example, as of the latest data market participants expected the OCR to reach 5.5 percent at the May 2023 Statement.

Figure 5.2
Global 2-year interest rate swaps



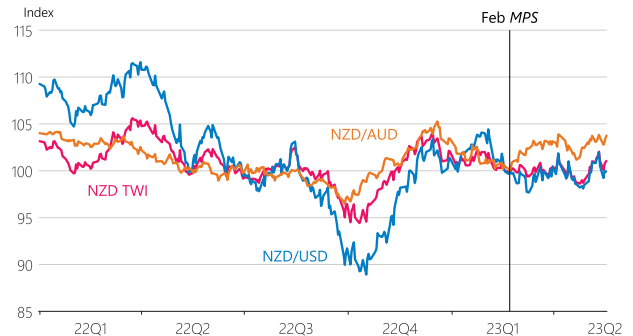
Source: Bloomberg.

Figure 5.3
2-year and 10-year New Zealand Government Bond bid-ask spreads



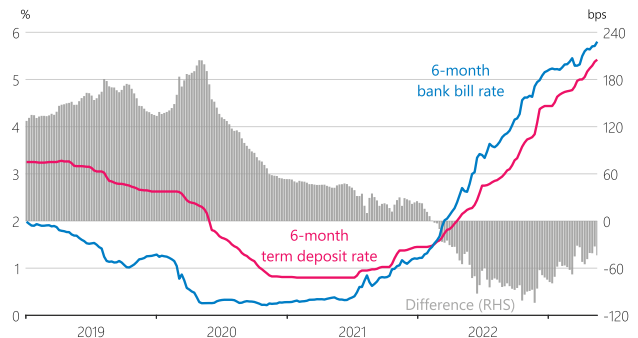
Source: Bloomberg.

Figure 5.4
New Zealand dollar TWI and selected bilateral exchange rates
(index=100 at February Statement)



Source: NZFMA, RBNZ.

Figure 5.5
Spread between the 6-month term deposit rate and the 6-month bank bill rate



Source: Bloomberg, interest.co.nz.

Note: The term deposit rates shown are the average of the latest fixed-term rates on offer from ANZ, ASB, BNZ and Westpac. Bank bill rates measure the weighted average of short-term domestic bank funding costs, reflecting the supply and demand for bank bills.

Figure 5.6
5-year bank credit spread



Source: Bloomberg, RBNZ estimates.

Note: This credit spread is the difference between banks' secondary market bond yields and the interest rate swap curve. The bond yield used for the 5-year measure is the average of bonds with a remaining maturity of five years issued in New Zealand dollars by ANZ, ASB, BNZ, and Westpac. A lower spread represents a lower implied borrowing cost.



Economic
projections

CHAPTER
06

CHAPTER 6

Economic projections



This chapter summarises the baseline economic projections that MPC members considered when making their policy assessment. The projections were finalised on 18 May 2023.

These projections rely on a set of key assumptions about the global and domestic factors influencing the economy. They include:

- the extent to which activity and inflation in our key trading partners slows over coming years, and the consequences for domestic financial conditions and demand for New Zealand’s goods and services exports;
- the speed and strength of the recovery in international tourism in New Zealand;
- the persistence of labour market tightness, wage pressures, and the impact of these factors on household spending;
- the outlook for net immigration, and whether new migrants contribute relatively more to the labour supply or aggregate demand in the short term;
- the housing market, and the extent to which recent house price declines contribute to lower residential construction activity and household consumption;
- how businesses, consumers and workers respond to rising costs and higher interest rates in New Zealand;
- the extent to which government consumption and investment – in particular the repair and rebuild of damaged infrastructure following the recent severe weather events – contribute to demand and inflationary pressure in the economy; and
- the scale of repair and rebuild activity associated with recent severe weather events, and the associated impacts on prices of some key goods and services.

There is significant uncertainty about these assumptions.

The projections take into account recent data, which show that GDP contracted in the last quarter of 2022 despite resilient employment growth. Although high-frequency indicators suggest a modest expansion in the first quarter of 2023, we are seeing broad signals that economic activity is slowing, particularly in interest-rate-sensitive parts of the economy. Capacity pressure remains elevated, but less so than assumed in the February *Statement*. The factors underpinning this starting point are discussed in chapter 2.

In the medium term, we assume that lower goods export prices, subdued export volumes, ongoing weakness in the housing market, a declining share of government spending in the economy, and higher interest rates in New Zealand will substantially moderate domestic demand growth.

Inflation in New Zealand is assumed to have peaked. Global inflationary pressures are easing as activity levels slow in many advanced economies. Global shipping costs have declined substantially from their peak, and the prices of many commodities, including oil, have declined. Over time, these lower global price pressures are expected to result in lower imported inflation for New Zealand. On the other hand, high food prices – temporarily affected by the recent severe weather events – are expected to provide some offset in the near term.

Core inflation is elevated and the labour market remains tight, supporting strong wage growth. Non-tradables inflation is projected to decline only gradually as economic activity slows and labour supply improves, easing capacity pressures over the medium term.

Annual consumer price inflation is expected to return to its 2 percent target midpoint in 2025. Given the expected slowing in domestic demand, a higher unemployment rate is likely. Employment is expected to fall below its maximum sustainable level for a time.

Table 6.1

Key projection assumptions

Key factors	
Global factors	<ul style="list-style-type: none"> • Global inflationary pressures are easing, broadly in line with expectations at the time of the February <i>Statement</i>. Inflation appears to have peaked in many of our key trading partners. Some prices, particularly for oil and shipping, have fallen faster than anticipated so far in 2023. • Global long-term interest rates have fallen since the February <i>Statement</i> in response to lower expectations for inflation and tightening credit conditions as a result of banking stress in the US and Europe. Transmission to the New Zealand economy via financial channels has been limited, and the New Zealand dollar TWI is currently around similar levels to those assumed in the February <i>Statement</i>. • The global economy is continuing to slow in response to monetary policy tightening and tightening credit conditions. The Chinese economy is an exception, experiencing a stronger-than-expected recovery following the removal of COVID-19 restrictions at the end of last year. The outlook for global activity is broadly unchanged relative to the February <i>Statement</i>, despite lower interest rates in some key trading partners. • The New Zealand dollar TWI is assumed to remain around 71.5 over the projection.
International tourism	<ul style="list-style-type: none"> • Services exports, particularly tourism and education, appear to be recovering rapidly, and we maintain a strong growth projection. Visitor arrivals and card spending data indicate New Zealand had strong tourism inflows over the start of 2023, and that visitor arrivals have continued to increase on a seasonally adjusted basis. Additional spending by overseas tourists is contributing to capacity pressures across the transport, accommodation and hospitality sectors. • We assume that tourism exports recovered to around 75 percent of their pre-pandemic levels over the 2022/23 summer season, and will surpass pre-pandemic levels by the end of the projection.
International migration	<ul style="list-style-type: none"> • Over the past six months we have observed much stronger official net immigration data. This has led to a significant upward revision to the starting point of net immigration. • We have also revised our medium-term immigration forecast higher to a level slightly below the pre-COVID-19 period, reflecting our updated understanding of changes to New Zealand immigration policy. The Australian Government recently announced a direct pathway to Australian citizenship for New Zealanders who immigrated to Australia. No explicit assumption has been made about the potential impacts of this change in policy on New Zealand net immigration. • Higher net immigration has likely mitigated acute labour market shortages so far in 2023, and has contributed to higher total spending. Over the medium term, migrants add to both demand and supply in the economy, growing the productive capacity of New Zealand. However, in the short term, new migrants' contribution to demand may be greater than their supply contribution, particularly for high-income migrants, students and those bringing families and children. In markets where supply is slow to respond to higher demand, such as for housing, higher net immigration is likely to contribute to higher prices.
House prices	<ul style="list-style-type: none"> • House prices have fallen 15.3 percent since their peak in November 2021, measured in monthly terms. However, there are early signs that house prices may not decrease as much as expected in the February <i>Statement</i>. • The rapid return of net immigration, an increase in the number of residents due to the one-off 2021 resident visa, strong nominal wage growth, stable mortgage interest rates, and a relatively low number of houses available for sale have contributed to a smaller decline in house prices than expected in recent months. These factors have led us to revise our house price forecast higher since the February <i>Statement</i>, and we now expect a peak-to-trough price decline of 17 percent, measured in quarterly terms. • The fall in house prices to date is expected to flow through to lower household spending over the projection, as aggregate household wealth has fallen substantially.

Economic growth

Production

- We assume that the economy expanded by 0.3 percent in the March 2023 quarter, but contracts modestly thereafter.
- Capacity pressures remain elevated but are weaker than assumed in the February *Statement* following a 0.6 percent contraction in GDP in the December 2022 quarter. We estimate that the output gap peaked at 3.2 percent of potential output in the September 2022 quarter, and has reduced to 1.6 percent of potential output in the March 2023 quarter.
- These projections contain a period of shallow economic contraction. Annual GDP growth is projected to be flat at 0.0 percent in the year to the December 2023 quarter. Quarterly changes in GDP are highly uncertain, and a technical recession (two consecutive quarters of negative GDP growth) is possible.
- Over the medium term, the supply of goods and services is also expected to improve, supported by strong population growth through migration that expands the productive capacity of the economy.
- We expect the output gap to close and quickly become negative in 2023. An extended period of below-trend growth is expected to be necessary to meet our employment and inflation objectives sustainably over the medium term.

Consumption

- Consumption growth was strong over 2022, supported by rising aggregate incomes and government transfers. Incomes were buoyed by high export prices, high labour force participation and longer working hours.
- Consumption is estimated to have expanded in the March 2023 quarter, reflecting robust card spending data, increased population growth through migration and changing seasonal factors as international travel returns.
- Consumption is expected to slow over coming quarters as households with mortgages continue to roll onto higher interest rates, and the effects of lower house prices continue to pass through. However, stronger migration is likely to provide some support for aggregate consumption and house prices. Consumption is expected to decline on a per capita basis to slightly above pre-pandemic levels in mid-2024.

Investment

- We assume that business investment is resilient in the near term, as businesses continue to respond to elevated capacity pressures, and repair and rebuild work associated with the severe weather events gets underway.
- Business investment is expected to decline over the medium term, due to high interest rates, lower export prices and easing capacity pressures. Global weakness is also likely to slow business investment by adding to uncertainty about future global demand.
- New consent issuance for residential building has slowed considerably so far this year, due to higher interest rates, elevated construction costs and falling house prices. Residential construction work is expected to slow further over the coming quarters, despite some increased demand pressure from migration and private repair and rebuild work associated with the severe weather events.
- Over the medium term, we project the share of residential construction to economic output to recover but to remain below pre-pandemic levels.

Government

- We assume that government consumption and investment evolve in line with the macroeconomic and fiscal forecasts in *Budget 2023*.
- Government investment, particularly in infrastructure, is projected to increase considerably as repair and rebuild work associated with the severe weather events continues.
- Real government consumption is expected to decline modestly from current levels, contributing less to economic growth and inflationary pressure than it has done in the past three years.

Exports and imports

- Goods export prices and volumes have been weak, reflecting softening global demand and domestic supply constraints. Over the first half of 2023, disruptions due to the severe weather events are assumed to further reduce export volumes.
- Over the medium term, goods export volumes are projected to recover as supply constraints ease and Chinese demand improves. However, the projected recovery is slower than assumed in the February *Statement*, in light of weak global economic conditions.
- International travel is recovering as expected. By the end of the projection, services exports are assumed to have surpassed pre-COVID-19 levels.
- Non-oil import prices are currently elevated relative to broader measures of inflation. Non-oil import prices are expected to remain elevated but to decline modestly over the projection in line with moderating global inflation, falling shipping costs and easing of supply-chain bottlenecks in global production.

Labour market

Employment and wages

- The labour market has remained tight, but has shown some signs of easing. The unemployment rate remained at 3.4 percent in the March 2023 quarter, a near-record low. The number of people employed and the size of the labour force continued to grow.
- Although same-job wage growth remains strong, it was slightly weaker than assumed in the February *Statement*, and total hours worked decreased slightly. Our suite of labour market indicators continues to suggest that employment remains above its maximum sustainable level.
- Employment is starting from a very strong level. Over the medium term, employment is projected to remain at about its current level, and may fall below maximum sustainable employment for a time. These projections assume total employment grows slowly relative to population growth. The slowing in economic growth over several quarters, together with gradual growth in the labour force, is expected to relieve labour market pressures. The unemployment rate is assumed to increase from very low levels to around 5.2 percent at the end of the projection, in line with a declining output gap.
- Annual labour cost index (LCI) private sector wage inflation is expected to have peaked at 4.5 percent in the March 2023 quarter, but remains relatively elevated over the next two years. This reflects the balance of a gradual easing of labour shortages, expected further rises in the minimum wage, and increased living cost adjustments by employers.

Inflation

Headline

- Annual headline CPI inflation is assumed to have peaked, and is projected to decline to 6.1 percent in the June 2023 quarter.
- Annual headline CPI inflation is projected to return to within the 1 to 3 percent target band in the second half of 2024, reaching the 2 percent target midpoint in 2025.

Tradables

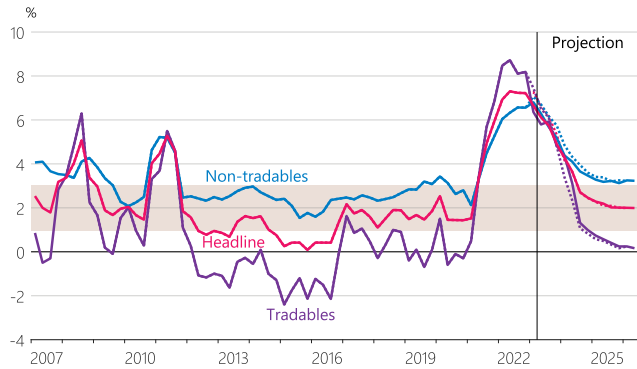
- Annual tradables inflation is assumed to have peaked, and is projected to decline over the projection. This decline reflects lower petrol prices, falling prices for food and other commodities over the medium term and a generalised easing in global inflationary pressures.
- Temporary reductions in road user charges and fuel excise tax are assumed to end on 30 June 2023, in line with stated Government policy.
- Prices for some tradable goods – particularly food and appliances – are likely to be supported through increased demand and reduced supply following the severe weather events. However, the direct price impacts of the storms are assumed to be smaller than expected in the February *Statement*. The downward revision is in light of overall lower-than-expected inflation data for the March 2023 quarter and our evolving understanding of the economic consequences of the severe weather events.

Non-tradables

- Annual non-tradables inflation is assumed to have peaked, but is currently supported by domestic capacity pressures and strong wage growth.
- Capacity pressures are expected to ease quickly over 2023, as high interest rates reduce domestic demand in the context of improving supply conditions. However, non-tradables inflation is assumed to decline only slowly in light of high core inflation and still-elevated inflation expectations.
- Materials and labour shortages in the construction industry have continued to underpin housing-related cost increases. In the near term, repair and rebuild work associated with the severe weather events is expected to put upward pressure on building costs, but to a lesser extent than assumed in the February *Statement*.

Charts

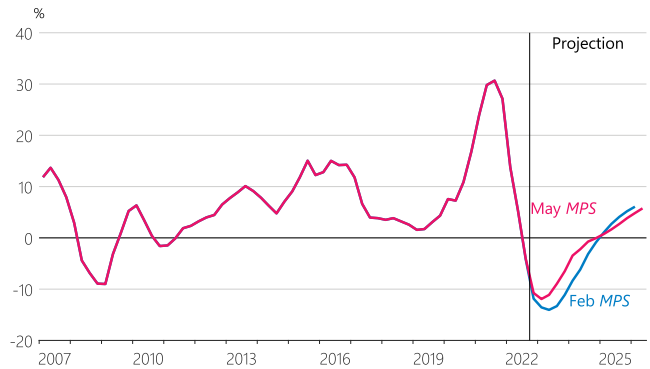
Figure 6.1
Inflation components
(annual)



Source: Stats NZ, RBNZ estimates.

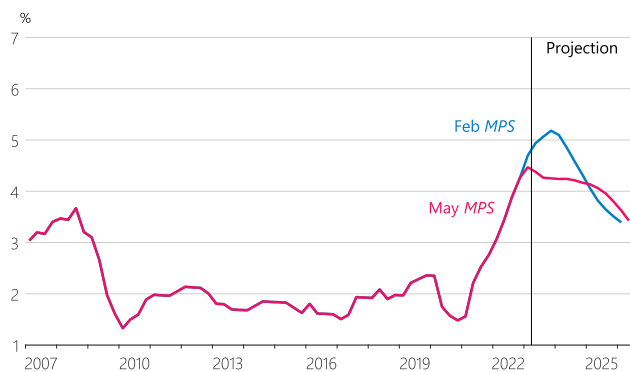
Note: Dotted lines show the projections from the February Statement. The shaded area represents the MPC's 1 to 3 percent target range for annual CPI inflation over the medium term.

Figure 6.4
House price growth
(annual)



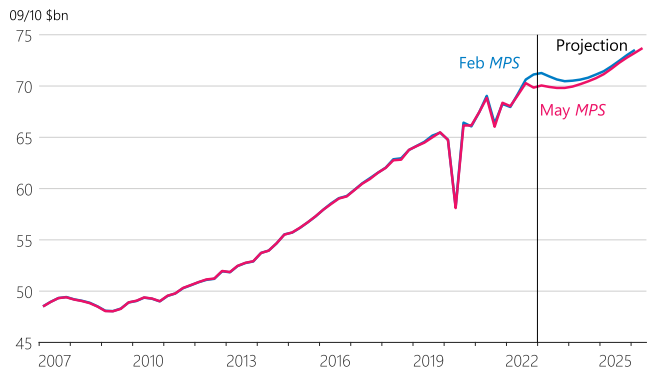
Source: CoreLogic, RBNZ estimates.

Figure 6.2
Private sector LCI wage inflation
(annual)



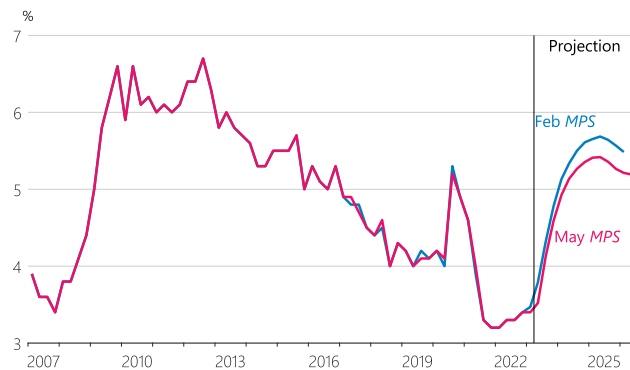
Source: Stats NZ, RBNZ estimates.

Figure 6.5
Production GDP
(quarterly, seasonally adjusted)



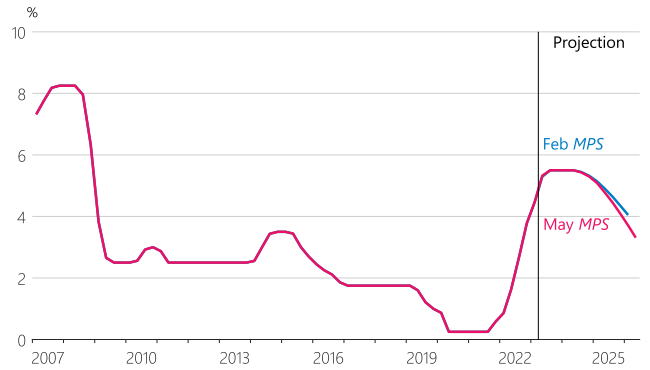
Source: Stats NZ, RBNZ estimates.

Figure 6.3
Unemployment rate
(unemployed people as share of the labour force, seasonally adjusted)



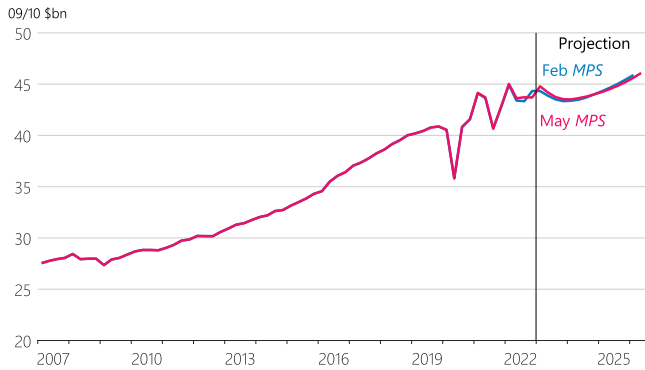
Source: Stats NZ, RBNZ estimates.

Figure 6.6
OCR
(quarterly average)



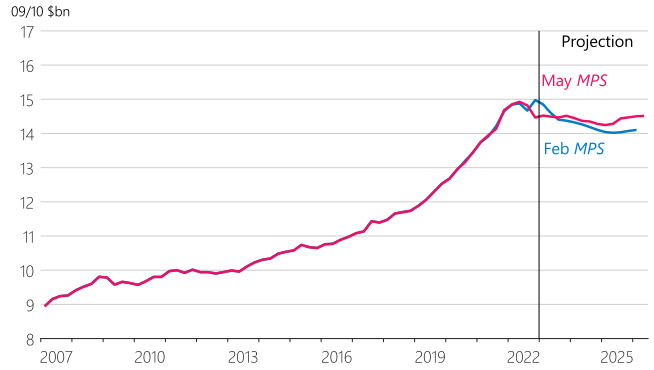
Source: RBNZ estimates.

Figure 6.7
Private consumption
(quarterly, seasonally adjusted)



Source: Stats NZ, RBNZ estimates.

Figure 6.10
Government consumption
(quarterly, seasonally adjusted)



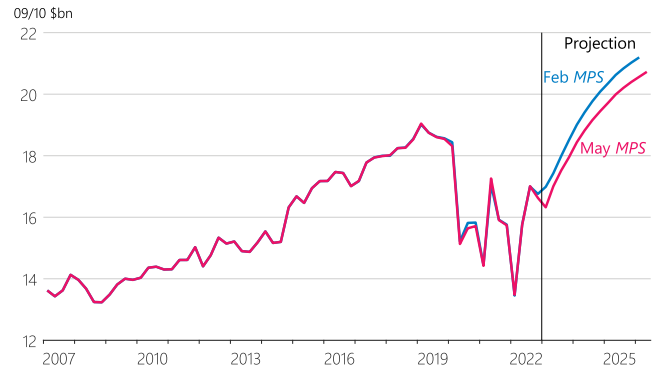
Source: Stats NZ, RBNZ estimates.

Figure 6.8
Residential investment
(quarterly, seasonally adjusted)



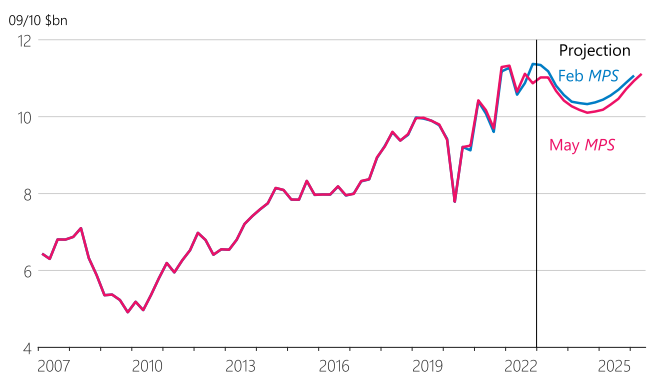
Source: Stats NZ, RBNZ estimates.

Figure 6.11
Total exports
(quarterly, seasonally adjusted)



Source: Stats NZ, RBNZ estimates.

Figure 6.9
Business investment
(quarterly, seasonally adjusted)



Source: Stats NZ, RBNZ estimates.

Figure 6.12
Total imports
(quarterly, seasonally adjusted)



Source: Stats NZ, RBNZ estimates.



Appendices

CHAPTER
07

CHAPTER 7

Appendices

Appendix 1: Statistical tables

Table 7.1

Key forecast variables

		GDP growth Quarterly	CPI inflation Quarterly	CPI inflation Annual	Unemployment rate	TWI	OCR
2021	Mar	2.0	0.8	1.5	4.6	74.9	0.3
	Jun	2.1	1.3	3.3	4.0	74.7	0.3
	Sep	-4.1	2.2	4.9	3.3	74.4	0.3
	Dec	3.5	1.4	5.9	3.2	74.3	0.6
2022	Mar	-0.5	1.8	6.9	3.2	72.6	0.9
	Jun	1.6	1.7	7.3	3.3	72.1	1.6
	Sep	1.7	2.2	7.2	3.3	70.6	2.7
	Dec	-0.6	1.4	7.2	3.4	70.8	3.8
2023	Mar	0.3	1.2	6.7	3.4	71.3	4.5
	Jun	-0.2	1.1	6.1	3.5	71.5	5.3
	Sep	-0.1	1.8	5.7	4.1	71.5	5.5
	Dec	0.0	0.6	4.9	4.6	71.5	5.5
2024	Mar	0.2	0.6	4.3	4.9	71.5	5.5
	Jun	0.3	0.6	3.7	5.1	71.5	5.5
	Sep	0.4	0.9	2.7	5.3	71.5	5.4
	Dec	0.4	0.4	2.5	5.4	71.5	5.3
2025	Mar	0.6	0.5	2.3	5.4	71.5	5.1
	Jun	0.7	0.5	2.2	5.4	71.5	4.8
	Sep	0.8	0.7	2.0	5.4	71.5	4.5
	Dec	0.7	0.4	2.0	5.3	71.5	4.1
2026	Mar	0.6	0.5	2.0	5.2	71.5	3.7
	Jun	0.6	0.5	2.0	5.2	71.5	3.3

Table 7.2

Measures of inflation, inflation expectations, and asset prices

	2021		2022				2023	
	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun
Inflation (annual rates)								
CPI	4.9	5.9	6.9	7.3	7.2	7.2	6.7	
CPI non-tradables	4.5	5.3	6.0	6.3	6.6	6.6	6.8	
CPI tradables	5.7	6.9	8.5	8.7	8.1	8.2	6.4	
Sectoral factor model estimate of core inflation	3.8	4.3	4.8	5.3	5.6	5.8	5.7	
CPI trimmed mean (30 percent measure)	4.0	4.3	5.2	5.8	6.4	6.1	6.1	
CPI weighted median	3.3	3.8	3.9	4.8	5.0	5.0	5.6	
GDP deflator (expenditure)	3.7	5.3	6.2	6.1	5.2	5.0		
Inflation expectations								
ANZ Business Outlook – inflation 1 year ahead (quarterly average to date)	2.9	4.0	5.4	6.0	6.1	6.3	5.9	5.7
RBNZ Survey of Expectations – inflation 2 years ahead	2.3	3.0	3.3	3.3	3.1	3.6	3.3	2.8
RBNZ Survey of Expectations – inflation 5 years ahead	2.0	2.2	2.3	2.4	2.3	2.4	2.4	2.4
RBNZ Survey of Expectations – inflation 10 years ahead	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.3
Long-run inflation expectations*	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.4
Asset prices (annual percent changes)								
Quarterly house price index (CoreLogic NZ)	30.7	27.1	13.7	5.4	-4.2			
REINZ Farm Price Index (quarterly average to date)	15.1	20.5	25.6	31.0	5.9	0.6	-3.5	
NZX 50 (quarterly average to date)	10.3	3.0	-3.9	-9.0	-11.3	-12.8	-3.5	4.3

* Long-run expectations are extracted from a range of surveys using a Nelson-Siegel model. Source: ANZ, Consensus Economics, RBNZ estimates.

Table 7.3

Measures of labour market conditions

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

	2021		2022				2023
	Sep	Dec	Mar	Jun	Sep	Dec	Mar
Household Labour Force Survey							
Unemployment rate	3.3	3.2	3.2	3.3	3.3	3.4	3.4
Underutilisation rate	9.2	9.2	9.3	9.3	9.0	9.3	9.0
Labour force participation rate	71.1	71.0	70.9	71.0	71.6	71.7	72.0
Employment rate (percentage of working-age population)	68.7	68.7	68.6	68.6	69.3	69.3	69.5
Employment growth	3.9	3.3	2.5	1.4	1.2	1.6	2.4
Average weekly hours worked	31.4	33.3	33.4	33.7	33.8	34.0	33.7
Number unemployed (thousand people)	97	93	94	97	97	100	102
Number employed (million people)	2.82	2.82	2.82	2.82	2.85	2.86	2.89
Labour force (million people)	2.91	2.91	2.91	2.91	2.95	2.96	2.99
Extended labour force (million people)	3.00	2.99	3.00	3.00	3.02	3.05	3.07
Working-age population (million people, age 15 years+)	4.10	4.10	4.10	4.10	4.11	4.13	4.15
Quarterly Employment Survey – QES							
Filled jobs growth	4.0	4.1	4.1	1.5	1.5	1.4	2.2
Average hourly earnings growth (private sector, ordinary time)	3.6	4.1	5.3	7.0	8.6	8.1	8.2
Other data sources							
Labour cost index growth, private sector, adjusted	2.5	2.8	3.1	3.4	3.9	4.3	4.5
Labour cost index growth, private sector, unadjusted	4.1	4.5	5.0	5.2	5.6	6.1	6.1
Estimated net working-age immigration (thousands, quarterly)	-3.2	-6.0	-7.3	0.4	7.5	17.0	23.3
Change in All Vacancies Index	53.2	30.3	24.0	3.4	6.2	-3.8	-14.9

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. The unadjusted labour cost index (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 working-age immigration is the Stats NZ outcomes-based measure.

Table 7.4**Composition of real GDP growth***(annual average percent change, seasonally adjusted, March years, unless specified otherwise)*

March year	Actuals							Projection			
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Final consumption expenditure											
Private	4.2	6.4	4.8	4.5	2.4	-0.2	6.1	2.1	-0.5	0.4	2.6
Public authority	2.1	2.1	3.9	3.4	5.5	7.6	8.1	1.9	-1.4	-1.2	0.8
Total	3.7	5.4	4.6	4.3	3.1	1.7	6.5	2.1	-0.7	0.0	2.1
Gross fixed capital formation											
Residential	7.1	8.8	-1.8	-0.1	2.7	2.2	2.6	1.7	-7.7	-8.6	7.0
Other	2.2	0.0	10.1	7.2	2.8	-2.8	13.3	2.5	-0.4	-1.4	3.0
Total	3.4	2.3	6.8	5.3	2.8	-1.6	10.6	2.3	-2.1	-2.9	3.8
Final domestic expenditure	3.6	4.7	5.1	4.5	3.0	0.9	7.5	2.1	-1.0	-0.7	2.5
Stockbuilding*	-0.3	0.1	0.2	-0.2	-0.2	-0.3	0.6	0.0	-0.3	0.1	0.0
Gross national expenditure	3.2	4.8	5.6	4.4	2.7	-0.4	8.7	2.7	-1.5	-0.6	2.5
Exports of goods and services	6.9	2.0	3.8	3.3	0.2	-17.9	2.4	5.3	7.9	8.8	5.2
Imports of goods and services	3.1	5.2	7.8	4.8	1.2	-15.9	17.4	3.7	0.6	1.4	4.5
Expenditure on GDP	4.3	3.9	4.4	3.9	2.5	0.0	4.8	3.0	0.0	1.1	2.6
GDP (production)	3.8	3.7	3.5	3.5	2.4	-0.7	5.2	3.0	0.1	1.1	2.6
GDP (production, March qtr to March qtr)	4.0	3.3	3.6	3.4	0.9	4.2	0.9	3.0	-0.2	1.7	2.9

* Percentage point contribution to the growth rate of GDP.

Table 7.5

Summary of economic projections

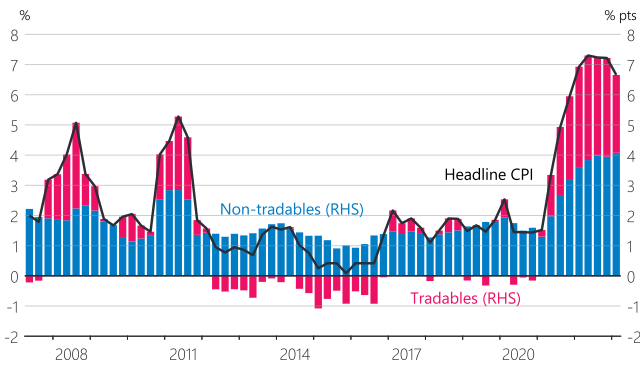
(annual percent change, March years, unless specified otherwise)

March year	Actuals								Projection			
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
Price measures												
CPI	0.4	2.2	1.1	1.5	2.5	1.5	6.9	6.7	4.3	2.3	2.0	
Labour costs	1.8	1.5	1.9	2.0	2.4	1.6	3.1	4.5	4.2	4.1	3.6	
Export prices (in New Zealand dollars)	0.7	4.1	3.3	1.1	6.8	-6.2	21.4	1.5	-3.9	4.1	3.7	
Import prices (in New Zealand dollars)	0.5	1.2	1.6	4.0	2.3	-2.5	19.0	9.0	-1.0	-0.5	-0.2	
Monetary conditions												
OCR (year average)	2.9	2.0	1.8	1.8	1.2	0.3	0.5	3.1	5.5	5.3	4.3	
TWI (year average)	72.6	76.5	75.6	73.4	71.7	72.4	74.0	71.2	71.5	71.5	71.5	
Output												
GDP (production, annual average % change)	3.8	3.7	3.5	3.5	2.4	-0.7	5.2	3.0	0.1	1.1	2.6	
Potential output (annual average % change)	3.2	3.3	3.3	3.3	3.0	-0.8	3.2	2.8	2.8	2.6	2.5	
Output gap (% of potential GDP, year average)	-0.2	0.2	0.4	0.6	0.1	0.1	2.1	2.2	-0.5	-1.9	-1.8	
Labour market												
Total employment (seasonally adjusted)	2.3	5.9	2.9	1.5	2.6	0.1	2.5	2.4	0.7	1.2	1.8	
Unemployment rate (March qtr, seasonally adjusted)	5.3	4.9	4.4	4.2	4.2	4.6	3.2	3.4	4.9	5.4	5.2	
Trend labour productivity	0.7	0.6	0.6	0.7	0.8	0.8	0.6	0.3	0.1	0.2	0.3	
Key balances												
Government operating balance* (% of GDP, year to June)	0.7	1.5	1.9	2.4	-7.3	-1.3	-2.6	-1.3	-0.8	-0.5	0.5	
Current account balance (% of GDP)	-2.4	-2.6	-3.1	-3.8	-2.3	-2.6	-6.6	-8.5	-8.9	-6.7	-5.1	
Terms of trade (SNA measure, annual average % change)	-2.6	2.1	4.5	-2.1	2.1	-1.0	0.4	-4.3	-6.0	2.6	4.5	
Household saving rate (% of disposable income)	-0.8	-0.4	-0.5	0.3	2.6	8.9	4.5	3.1	1.5	2.6	3.4	
World economy												
Trading-partner GDP (annual average % change)	3.4	3.5	3.9	3.5	1.7	-0.6	6.0	2.7	2.8	2.9	3.1	
Trading-partner CPI (TWI weighted)	1.2	1.9	1.9	1.4	2.4	0.8	4.0	4.8	3.0	2.1	2.2	

* Government operating balance is a model-based estimate of OBEGAL divided by nominal GDP in the projection. The estimate is partial because it relies on projections for some components from the Budget 2023.

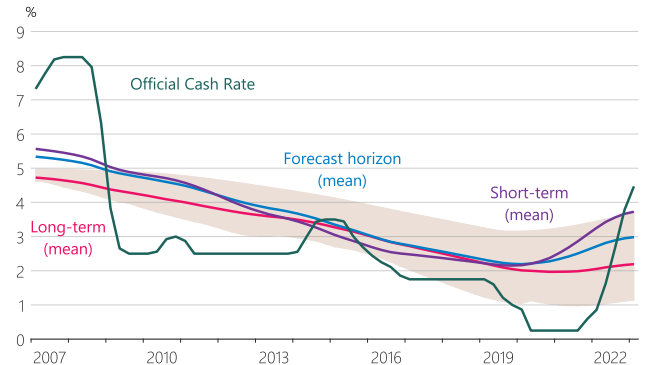
Appendix 2: Chart pack

Figure 7.1
Composition of CPI inflation
(annual)



Source: Stats NZ.

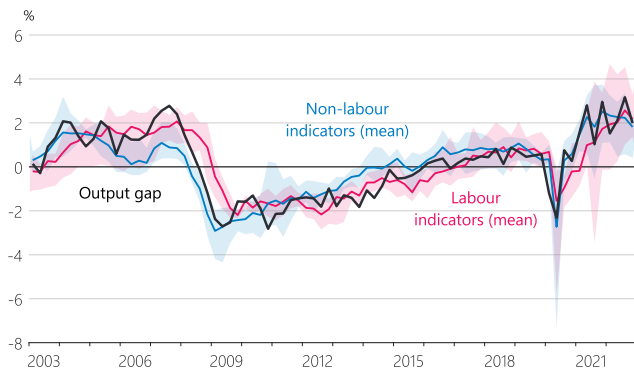
Figure 7.4
OCR and nominal neutral OCR indicator suite
(quarterly average)



Source: RBNZ estimates.

Note: The shaded area indicates the range between the maximum and minimum values from our suite of long-run nominal neutral OCR indicators. See chapter 4.1 of the November 2022 Statement for more information.

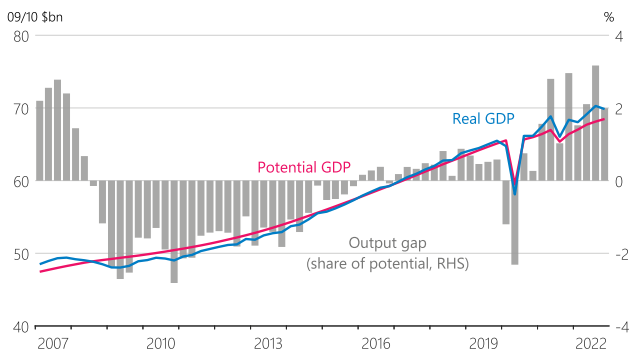
Figure 7.2
Output gap and output gap indicators
(share of potential)



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

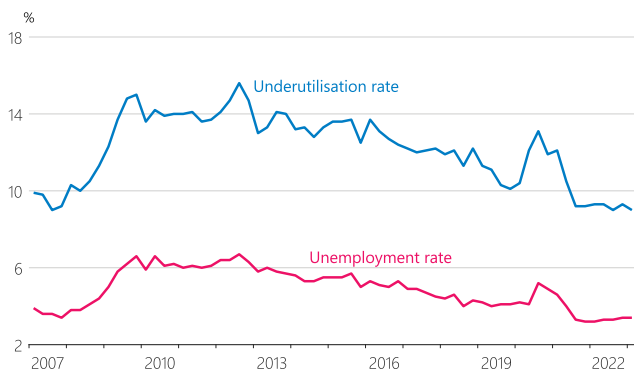
Note: The output gap indicators based on information about the labour market are shown separately from the other indicators. For each group of indicators, the shaded area shows the range of values and the line shows the mean value.

Figure 7.5
GDP and potential GDP
(seasonally adjusted)



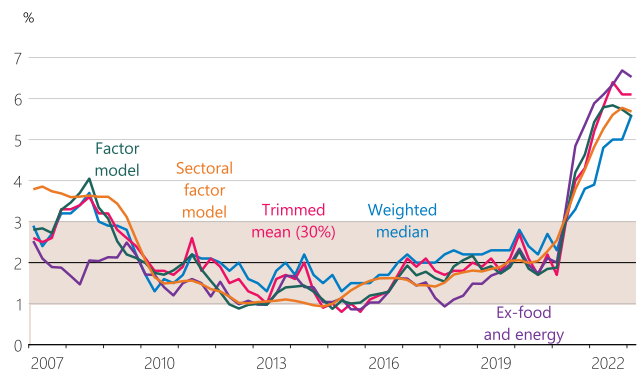
Source: Stats NZ, RBNZ estimates.

Figure 7.3
Unemployment and underutilisation rates
(seasonally adjusted)



Source: Stats NZ.

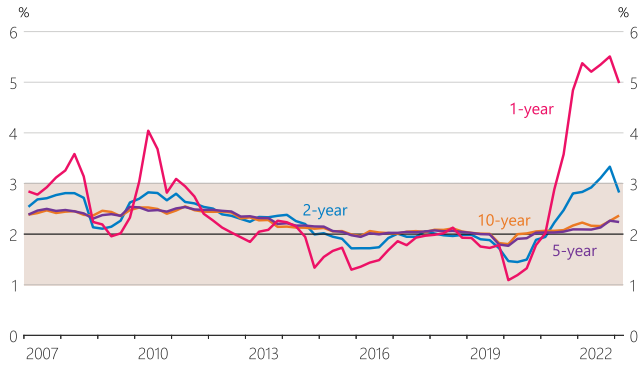
Figure 7.6
Measures of core inflation
(annual)



Source: Stats NZ, RBNZ estimates.

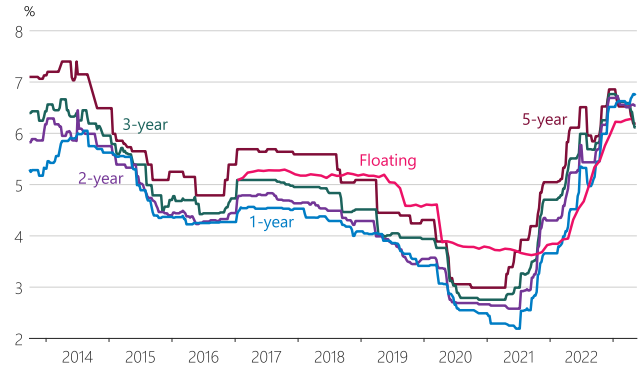
Note: Core inflation measures exclude the GST increase in 2010. The shaded area represents the MPC's 1 to 3 percent target range for annual CPI inflation over the medium term.

Figure 7.7
Inflation expectations
(annual)



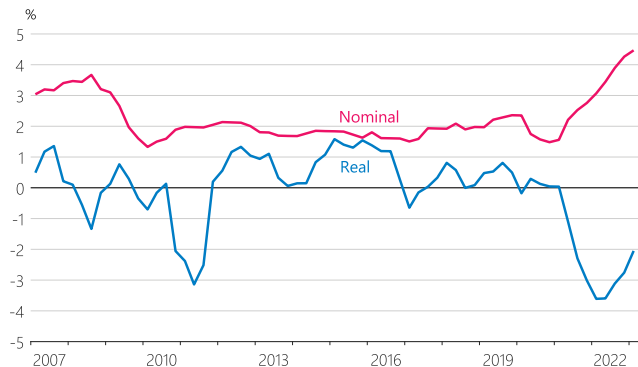
Source: RBNZ estimates.
 Note: Inflation expectations are estimates from the RBNZ inflation expectations curve, based on surveys of businesses and professional forecasters. The shaded area represents the MPC's 1 to 3 percent target range for annual CPI inflation over the medium term.

Figure 7.10
Mortgage interest rates



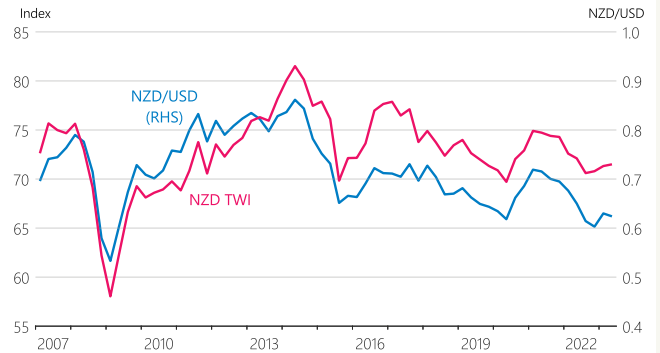
Source: interest.co.nz, RBNZ estimates.
 Note: The rates shown for the fixed terms are the average of the advertised rates from ANZ, ASB, BNZ, and Westpac, shown as weekly data. The floating rate represents the monthly yield on floating housing debt from the RBNZ Income Statement survey.

Figure 7.8
Private sector wage growth
(annual)



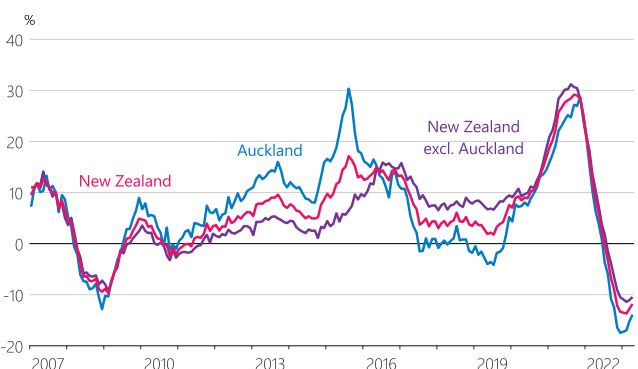
Source: Stats NZ, RBNZ estimates.
 Note: Private sector wage growth is measured by the labour cost index, all salary and wage rates, private sector. Real labour cost index is deflated with headline CPI inflation.

Figure 7.11
New Zealand dollar exchange rates
(quarterly average)



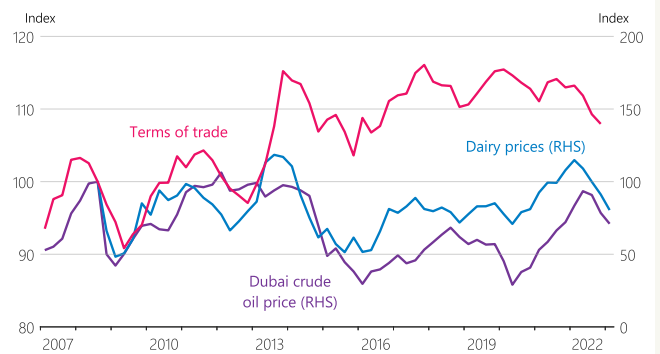
Source: NZFMA, Reuters, RBNZ.

Figure 7.9
House price inflation
(annual, nominal)



Source: REINZ.

Figure 7.12
Terms of trade, dairy and oil price indices



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



Reserve Bank
of New Zealand
Te Pūtea Matua