



Monetary Policy Statement

February 2020

Statement of the MPC's monetary policy strategy

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

Monetary policy framework and objectives

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

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

In pursuing these objectives, the *Remit* requires the MPC to have regard to the efficiency and soundness of the financial system, seek to avoid unnecessary instability in the economy and financial markets, and discount events that have only transitory effects on inflation.

The 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.

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*.

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.

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.

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 to the 2 percent target

mid-point, regardless of whether inflation is currently below or above target. 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.

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. Monetary policy and prudential policy are coordinated to ensure that changes in one policy are taken into account when setting the other.

Implementation of strategy

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

1. Firstly, it considers the outlook for the economy and its policy objectives. It then discusses risks to achieving its policy objectives.
2. Next, it deliberates about 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 change the Official Cash Rate (OCR) at the current meeting and how it will communicate the policy outlook.

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February 2020

Projections and data finalised on 5 February 2020.

Policy assessment and summary record of meeting finalised on 12 February 2020.



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Chapter 1

Policy assessment



Tēnā koutou katoa, welcome all.

The Monetary Policy Committee has decided to keep the Official Cash Rate (OCR) at 1.0 percent.

Employment is at or slightly above its maximum sustainable level while consumer price inflation is close to the 2 percent mid-point of our target range. Low interest rates remain necessary to keep employment and inflation around target.

Economic growth is expected to accelerate over the second half of 2020 driven by monetary and fiscal stimulus, and the high terms of trade. The outlook for government investment is stronger following the Government's announcements in December. There are also indications household spending growth will increase.

However, soft momentum in economic growth has continued into early 2020. Slower global growth over 2019 acted as a headwind to domestic growth. In addition, competitive pressures and recent subdued business confidence have suppressed business investment.

The global economic environment has shown signs of stabilising and trade tensions have receded somewhat. However, the COVID-19 (coronavirus) outbreak is an emerging downside risk.

We assume the overall economic impact of the coronavirus outbreak in New Zealand will be of a short duration, with most of the impacts in the first half of 2020. Nevertheless, some sectors are being significantly affected. There is a risk that the impact will be larger and more persistent. Monetary policy has time to adjust if needed as more information becomes available.

Meitaki, thanks

A handwritten signature in blue ink, appearing to be 'A. Orr', written over a horizontal line.

Adrian Orr
Governor

Summary record of meeting

The Monetary Policy Committee noted that employment was at or slightly above its maximum sustainable level while consumer price inflation was close to the 2 percent target mid-point. The Committee agreed that low interest rates had helped to get employment and inflation to around their target levels.

The Committee agreed that recent developments were consistent with continuing to meet their inflation and employment objectives, but the coronavirus situation was a complicating factor given how quickly it was changing and the limited information available.

The Committee discussed the reasons for an expected pick-up in growth over 2020, including monetary and fiscal stimulus and the high terms of trade.

The members noted the Government's announcement in December that it plans to invest more over the projection period. The Committee discussed that the impact of fiscal stimulus could be greater than assumed. This risk was balanced by potential delays in implementing approved spending and investment programmes.

The Committee noted that household spending growth was expected to accelerate due to lower interest rates and rising household wealth. Some members noted that the increase in consumption growth could be more persistent than projected.

The members noted that the high terms of trade has partly offset the effect of slower trading-partner growth on the New Zealand economy.

Some members noted that export prices could ease by more than projected given some of the temporary factors lifting meat and dairy prices.

The Committee noted the strong labour market, and agreed it was an expected outcome of monetary stimulus. The members discussed the contribution of the tight labour market to wage pressure and any flow on to consumer price inflation, and noted the effects of recent minimum wage increases, pay equity settlements, and large collective agreements in public sector. Some members noted the potential for further upward wage pressure.

Although GDP growth was expected to rise, some members noted downside risks to near-term production.

The members noted the signs of stabilisation in global growth and that trade tensions had receded somewhat. However, they noted these signs were early and tentative and they agreed the coronavirus outbreak was a risk to global growth in 2020.

The Committee discussed the challenges facing the rural sector and the impact on the rest of the economy. The members noted the changes to environment policy, tightening credit conditions over 2019, recent dry conditions in parts of the North Island, floods in Southland, and the coronavirus outbreak. The members discussed how these challenges could dampen economic activity.

The members discussed the business investment outlook and noted that business sentiment remains low despite its recent improvement. The members noted that stretched capacity in the construction sector could see government projects compete resources away from the private sector, but they also noted the opportunities that new infrastructure creates for total investment. The members noted upside and downside risks to the business investment outlook.

The Committee discussed the initial assumption that the overall economic impact of the coronavirus outbreak in New Zealand will be of a short duration. The members acknowledged that some sectors were being significantly affected. They noted that their understanding of the duration and impact of the outbreak was changing quickly. The Committee discussed the monetary policy implications if the impacts of the outbreak were larger and more persistent than assumed and agreed that monetary policy had time to adjust if needed as more information became available.

The Committee discussed financial stability risks from ongoing low rates. The members noted the Bank's assessment that marginal changes to the OCR would not materially affect these risks at this time.

The members discussed the better mix of policy stimulus in the projections, given additional fiscal stimulus is reducing the burden on monetary policy.

The Committee discussed alternative OCR settings and the various trade-offs involved. The Committee agreed that ongoing low interest rates were needed to keep inflation and employment close to their mandated targets.

The Committee reached a consensus to keep the OCR at 1.0 percent.

Attendees

Reserve Bank staff: Adrian Orr, Geoff Bascand, Christian Hawkesby, Yuong Ha

External: Bob Buckle, Peter Harris, Caroline Saunders

Observer: Tim Ng

Secretary: Chris McDonald

Chapter 2

Key policy judgements

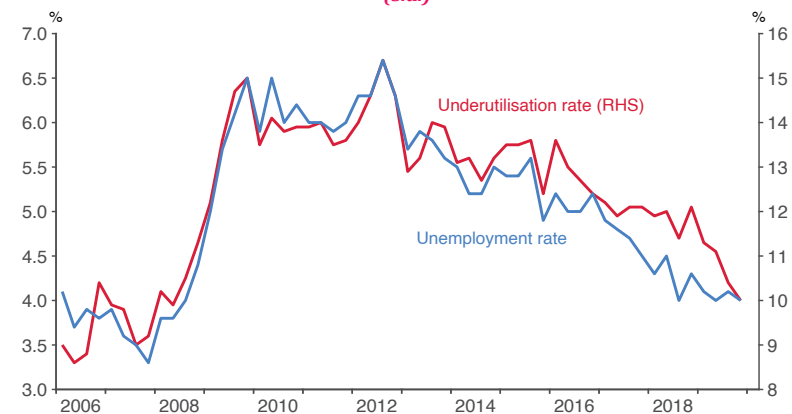


- The labour market remains tight, with key measures of spare capacity near their lowest levels since 2008. CPI inflation and measures of core inflation are close to the 2 percent mid-point of our target range.
- GDP growth is expected to accelerate over the second half of 2020, driven by monetary and fiscal stimulus, and high terms of trade. Relative to our previous projections, government investment is expected to increase more over the coming year and the housing market has been stronger than expected.
- Soft momentum in economic growth means that low interest rates remain necessary to keep employment and inflation around target. Slower global growth has acted as a headwind, and business confidence in New Zealand remains low.
- The global economic environment showed signs of stabilising after growth slowed in 2019, and trade tensions have receded somewhat. However, the coronavirus outbreak is an emerging downside risk. We assume the coronavirus outbreak will suppress domestic economic activity in 2020.

The labour market continued to tighten over 2019

The labour market remains tight, with spare capacity at low levels. The unemployment and underutilisation rates are both near the lowest they have been since 2008 (figure 2.1). Softer economic conditions have suppressed employment growth. At the same time, growth in the labour force has slowed. Labour force participation has flattened out after trending higher over several years and net immigration has fallen from its peak in 2016.

Figure 2.1
Unemployment and underutilisation rates
(s.a.)



Source: Stats NZ.

A range of indicators suggests employment continued to rise relative to its maximum sustainable level over 2019. Our judgement is that employment is around or slightly above its maximum sustainable level (see table 5.1).

We anticipate some easing in the labour market in the near term. There have been some indications that the slowdown in domestic growth is starting to temper demand in the labour market. A smaller share of firms report that labour is their most limiting factor, and firms have been posting fewer vacancies.

Inflation is close to 2 percent

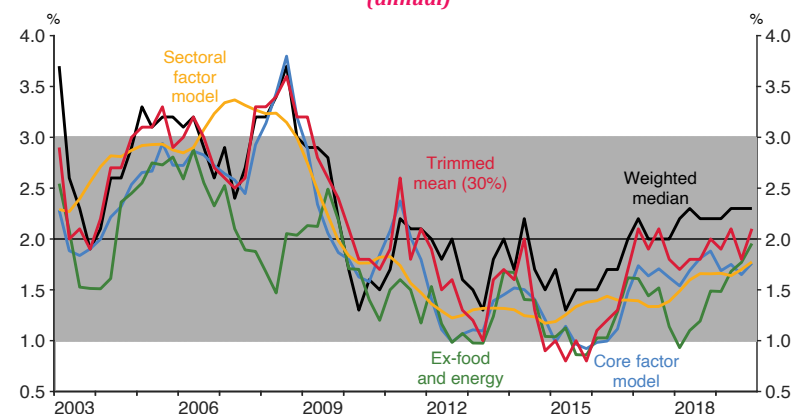
Headline inflation was 1.9 percent in the December 2019 quarter, close to the mid-point of our inflation target. Non-tradables inflation is contributing more to inflation than in recent years, partly reflecting increased domestic capacity pressure and stronger wage growth. Stripping out volatile components and one-off price increases, core inflation measures are around 2 percent (figure 2.2). Survey measures of inflation expectations are also close to 2 percent.

Wage growth has increased over the past two years. The tight labour market and larger minimum wage increases have contributed to this increase. Moreover, several large collective wage agreements over the past two years have seen public sector wage inflation increase to its highest level in 10 years.

Domestic economic growth slowed in 2019 and remains below trend

Revisions to GDP suggest economic growth was stronger than previously thought in 2018 but slowed more sharply in the first half of 2019. Even with stronger quarterly growth in the September 2019 quarter, annual growth slowed to 2.3 percent from 3.0 percent in the same quarter a year earlier. This is below our estimate of potential output growth, which is the growth rate that neither increases nor decreases inflationary pressure (figure 2.3).

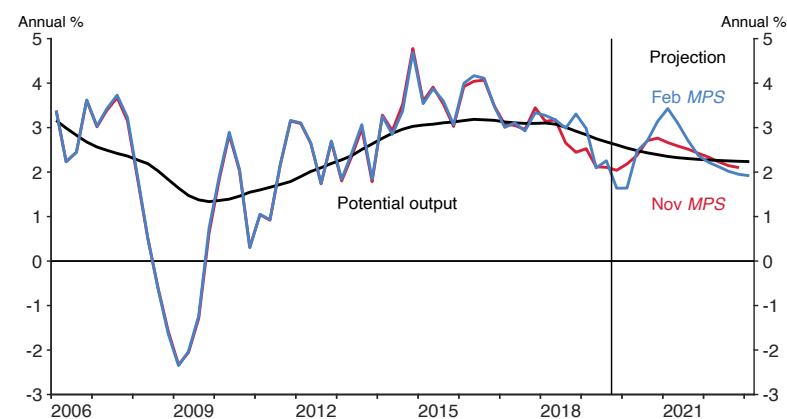
Figure 2.2
Core inflation measures
(annual)



Source: Stats NZ, RBNZ estimates.

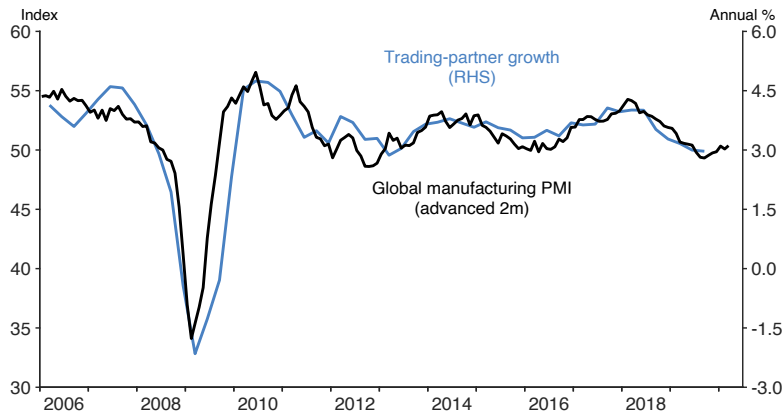
Note: Core inflation measures exclude the effect of the GST increase in 2010.

Figure 2.3
GDP growth



Source: Stats NZ, RBNZ estimates.

Figure 2.4
Trading-partner GDP growth



Source: Haver Analytics, Stats NZ, RBNZ estimates.

Note: The global manufacturing PMI is an indicator of the change in global manufacturing activity.

Softer global economic conditions are contributing to slower domestic growth. Elevated uncertainty and rising barriers to trade have suppressed global manufacturing activity and business investment. Annual trading-partner growth slowed from 4.0 percent in the March 2018 quarter to 3.0 percent in the September 2019 quarter (figure 2.4).

Slower global growth since 2018 has affected New Zealand through several channels.¹ Business confidence in New Zealand has been low, dampening business investment. Growth in short-term visitor arrivals to New Zealand has flat-lined since the middle of 2019. Net immigration has fallen from its peak in 2016.

¹ For more detail on the channels through which the global economy affects New Zealand, see C. Hawkesby (2020), ['The Global Economy and New Zealand'](#), Reserve Bank of New Zealand speech series.

Our export revenue has held up, partly offsetting the impact of slower global growth on New Zealand (see chapter 3). African swine fever has driven our meat export prices higher as consumers of pork have substituted to other meats. Dairy prices have also been robust because of subdued global milk production and strong demand from China. The trade deal between the US and China is not expected to affect our export revenue significantly. The coronavirus outbreak is reducing demand for some of our export products, at least temporarily.

We expect domestic growth to remain below trend into early 2020, consistent with the low level of business activity reported by firms in the *Quarterly Survey of Business Opinion* (QSBO) and reflecting the impacts of the coronavirus outbreak.

Global growth has shown signs of stabilising but downside risks remain

There have been some tentative signs of stabilisation in global growth, and some downside risks have receded. Global risks around trade have reduced due to the signing of the US-China phase one trade deal.

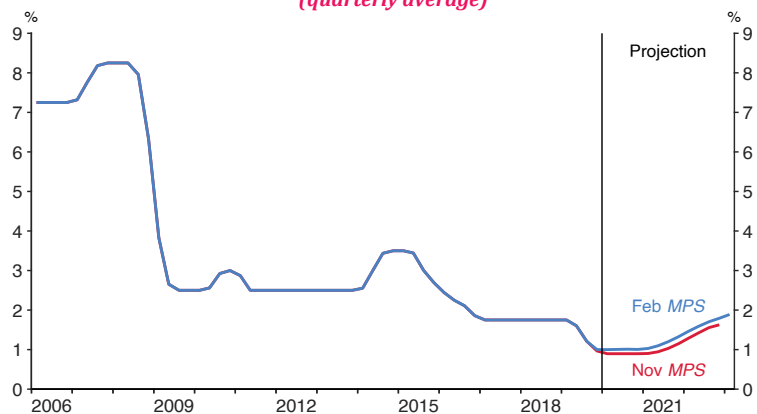
However, the coronavirus outbreak is an emerging downside risk to the growth outlook for 2020. While the economic implications are still very uncertain, the outbreak is likely to reduce economic growth in China, our largest trading partner, and cause fewer tourist arrivals to New Zealand over the first half of 2020 (see chapter 3). Our current projections assume that any effects on New Zealand will be short-lived and the implications for monetary policy are small. The monetary policy implications will be larger if the outbreak and economic impacts are more significant or persist for longer than we have assumed.

Government bond yields remain at low levels in major economies. These low rates are consistent with continuing low short-term interest rates, and ongoing softness in global growth and inflationary pressure.

Monetary and fiscal stimulus supports employment and inflation

Over 2019, we cut the OCR from 1.75 percent to 1 percent to ensure we continue to meet our inflation and employment objectives. With soft momentum in economic growth, our projection has the OCR remaining at 1 percent for some time (figure 2.5).

Figure 2.5
Official cash rate
(quarterly average)



Source: RBNZ estimates.

The New Zealand dollar exchange rate has been volatile recently, but remains lower than at the start of 2019. Lower domestic interest rates have reduced the incentive to invest in New Zealand dollar assets. But this has been partially offset by similar monetary easing in our trading partners. High export commodity prices have also supported the New Zealand dollar.

Compared to early 2019, lower expected policy rates and declining term premia have contributed to low long-term interest rates globally. This has reduced funding costs for banks, contributing to lower lending rates to businesses and households. Mortgage rates have fallen by between 0.5 and 1 percentage points (see figure 5.10).

Lower interest rates have contributed to a stronger outlook for household spending. Household spending is supported by rising housing wealth. House price inflation has recovered from a low level earlier in 2019 and is strong in many parts of New Zealand. Lower debt servicing costs enables higher household spending on consumption, although returns from savings will be lower as well. Assuming historical relationships hold, consumption growth is expected to be higher in 2020 than we previously expected. In addition, the recent elevated level of residential building consents suggests residential investment will also pickup over the next year.

In addition to monetary stimulus, faster growth in government spending underpins the growth outlook (figure 2.6). Recently announced plans to increase government investment are expected to lift demand over the projection period (see chapter 3). However, the impact on economic activity is uncertain, particularly given existing capacity constraints in the construction sector. We also expect government consumption to contribute more to growth in the first half of 2020, in line with the 2019 *Half Year Economic and Fiscal Update* (HYEFU).

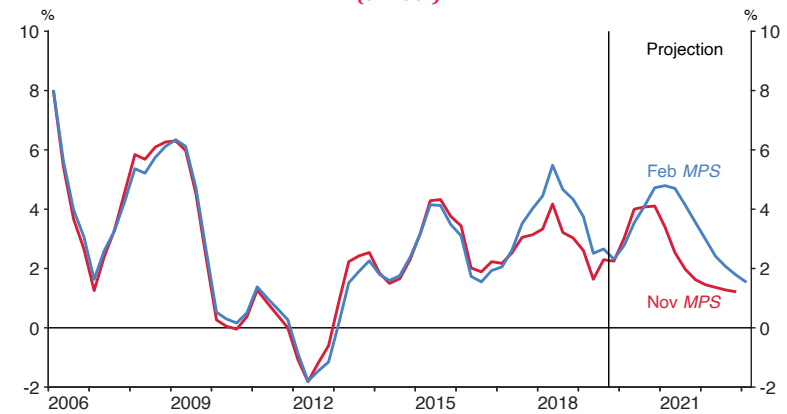
Given fiscal and monetary stimulus, annual GDP growth is expected to increase to 3.1 percent in the December 2020 quarter (figure 2.2). Potential output growth is assumed to average 2.4 percent over the projection period. With GDP growth rising above this rate by the end of 2020, capacity pressure is expected to increase.

Changes to capital requirements announced by the Bank in December last year are now included in our policy assessment and projections. The impacts on our projections are generally small. We assume that business investment and household spending will be slightly softer than otherwise while the policy is being phased in (see chapter 3).

Employment and inflation on target over the medium term

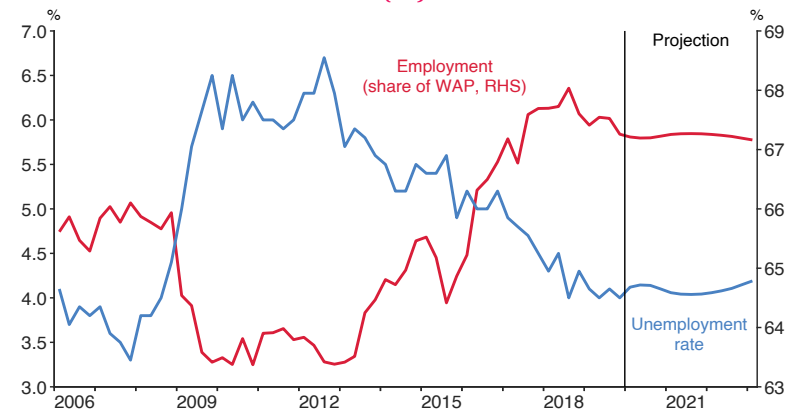
Employment is expected to remain high as a share of working-age population over the projection period. The unemployment rate returns to around 4 percent in 2021, after increasing slightly in the near term (figure 2.7).

Figure 2.6
Real government spending growth
(annual)



Source: Stats NZ, RBNZ estimates.

Figure 2.7
Employment and the unemployment rate
(s.a)



Source: Stats NZ, RBNZ estimates.

Note: Employment is shown as a share of working-age population (WAP).

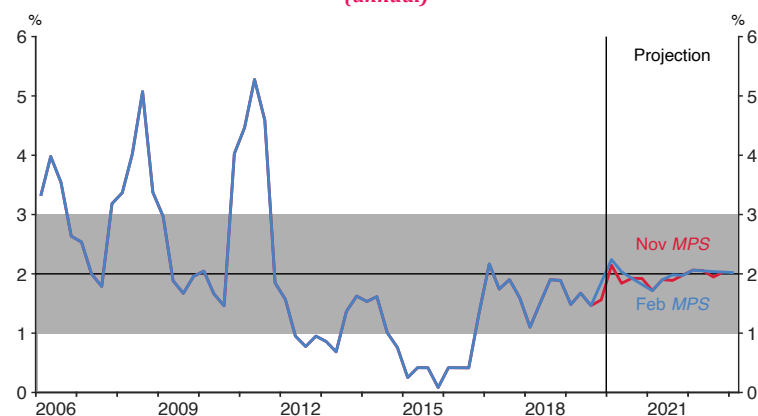
Headline inflation is expected to rise temporarily to 2.2 percent in the March 2020 quarter (figure 2.8). Higher petrol and food prices, along with previous one-off price increases for some non-tradable components, will continue to support inflation over the next year.

As capacity pressure builds, we expect non-tradables inflation to rise. This rise in non-tradables inflation ensures headline inflation remains around 2 percent. Tradables inflation is forecast to be slightly below its post-2000 average over the medium term due to continuing soft imported inflation.

Key assumptions and uncertainties

The outlook for monetary policy is contingent on the key forecast assumptions outlined in table 2.1. There is uncertainty around these assumptions, and they are updated as new information becomes available. The Summary Record of Meeting outlines the key uncertainties discussed by the Monetary Policy Committee (MPC) that could affect the economy and shift the outlook for monetary policy.

Figure 2.8
CPI inflation
(annual)



Source: Stats NZ, RBNZ estimates.

TABLE 2.1

Key forecast assumptions

Overarching narrative	Key judgements
Global growth stabilises around its historical average	<p>Annual GDP growth in our major trading partners averages 3.2 percent over the projection period.</p> <p>Central banks ease policy settings slightly further over 2020. The New Zealand dollar Trade Weighted Index (TWI) remains around 72 over the projection period.</p> <p>The coronavirus outbreak has a short-term impact on economic activity in our trading partners. The impacts on the New Zealand economy are mainly through the trade and financial channels, with the biggest impacts in the March 2020 quarter.</p>
Global inflationary pressure edges up only gradually	<p>Looking through temporary volatility, underlying inflation in our major trading partners is assumed to edge up gradually over the projection period.</p> <p>Annual import price inflation in foreign currency terms is low, averaging slightly below zero over the projection period.</p> <p>Dubai oil prices remain around USD 60 per barrel.</p> <p>Whole milk powder prices remain around USD 3,000 per metric tonne.</p>
New Zealand GDP growth picks up to above trend due to fiscal and monetary stimulus	<p>GDP growth remains soft in early 2020, before exceeding potential growth from mid-2020 as policy stimulus flows through the economy.</p> <p>Annual net immigration of working-age people falls to 27,000 in 2022, contributing to lower growth in potential GDP.</p> <p>Annual household consumption growth increases in 2020, then slows as house price inflation moderates and net immigration declines.</p> <p>Export volumes decline in the near term and then increase gradually as a share of GDP over the projection period. Import volumes grow at a moderate pace, supported by a pick-up in domestic demand growth from mid-2020.</p> <p>Government spending growth is high throughout 2020 and 2021, but fades over the medium term.</p> <p>Residential investment increases significantly over the first half of 2020 before declining slightly as a share of the economy over the remainder of the projection period.</p> <p>Business investment declines as a share of the economy over the projection period reflecting changes to bank capital requirements and higher government investment.</p>
Capacity pressure builds as demand growth outstrips supply	<p>Employment is currently around or slightly above its maximum sustainable level and the output gap is close to zero.</p> <p>Labour force participation remains around its current level.</p> <p>The labour market softens slightly in early 2020. Over the medium term, the unemployment rate is around 4 percent and the output gap rises above zero.</p>
Inflation remains near the 2 percent target mid-point	<p>Annual non-tradables inflation dips in late 2020 but then increases thereafter as capacity pressure increases, wages rise, and the dampening effect of past low inflation slowly fades.</p> <p>Annual tradables inflation increases in 2020 due to temporary factors, and then settles at a positive but below-average level.</p> <p>Annual wage inflation rises to 2.6 percent in 2021, as the labour market tightens and the minimum wage rises. Minimum wage increases are mostly absorbed in firms' margins and have a small impact on CPI inflation.</p>

Chapter 3

Special topics



Prior to each *Statement*, the MPC is provided with analysis of some topical issues that may influence its policy assessment.

Topics for the February *Statement* included:

1. The impact of the coronavirus outbreak on New Zealand's economy
2. The Government's new investment package
3. Understanding the effects of public sector wage growth
4. Implications of our high terms of trade
5. Monetary policy implications of the Reserve Bank's capital policy

1. The impact of the coronavirus outbreak on New Zealand's economy

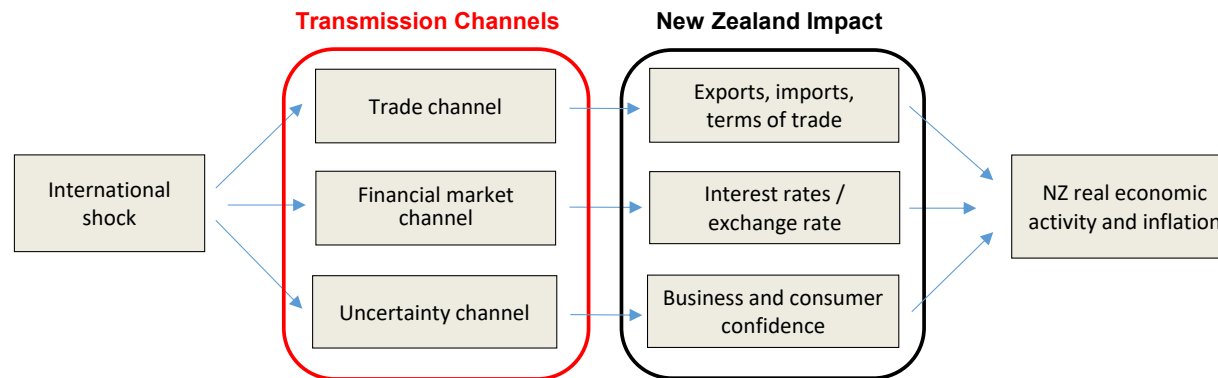
Coronavirus is disrupting everyday life in some of New Zealand's trading partners, particularly in Asia. In addition to the human toll, the outbreak and the policies put in place globally to contain it will have implications for New Zealand's economy, including for inflation and employment.

The situation is evolving rapidly and the impacts of the outbreak remain uncertain. Our projections incorporate a scenario where the coronavirus outbreak has a temporary economic impact on New Zealand, mostly during the first half of 2020.

Key channels to New Zealand's economy

At the time our projections were finalised there were no confirmed cases of coronavirus in New Zealand. However, even if the virus does not reach New Zealand, it will affect New Zealand through our close linkages to the global economy. These impacts can come through several key channels (figure 3.1).

Figure 3.1
Key transmission channels of international shocks to New Zealand



One key channel is through lower exports of tourism and education services. The outbreak is reducing the number of tourists and international students coming to New Zealand, as was the case during the SARS epidemic when visitor arrivals from Asia declined significantly. Visitor arrivals have declined as New Zealand has restricted entry to some non-residents who have travelled from or through China. In addition, some airlines have reduced their services to China.

Our imports of services may also be lower if fewer New Zealanders travel abroad. A sustained outbreak could influence migration flows to and from New Zealand.

Our trade in goods is being affected too. With China being one of our largest trading partners, the disruptive impact of the outbreak is reducing demand for some of our goods exports. China's significant role in global trade means that, even if the outbreak remains concentrated in China, the impacts could spill over into our other trading-partner economies, reducing their strong demand for our exports as well.

Prices for our key meat and dairy export commodities appear to have fallen in response to the outbreak. It is too early to observe the extent of the impact on export volumes. Some exporters have reported challenges around the delivery and storage of goods destined for China.

The implications for our goods imports are less clear, although prices for our commodity imports tend to fall as global demand declines. Oil prices have fallen considerably, from USD 69 per barrel in early January to USD 53 on 5 February. This will likely result in lower fuel prices in New Zealand.

There may also be indirect effects through higher uncertainty and financial markets. The uncertainty created by the outbreak could make New Zealand households and firms more cautious in their spending and investment decisions. Higher uncertainty at a global level also tends to be coupled with a depreciation in the New Zealand dollar.

Reflecting higher global uncertainty and New Zealand's economic exposure to China, the New Zealand dollar has depreciated against other major global currencies since late January. This will help to offset some of the impacts of the outbreak on New Zealand's economy.

Ultimately, estimating the economic impact of the coronavirus outbreak is extremely difficult. Although history provides some guidance on reasonable assumptions, the eventual outcome will depend on how long the outbreak lasts, how widely the disease spreads, and how people, firms, and governments respond. In any case, historical experience and available information suggest that the pace of economic growth over the first half of 2020 will be slower as a result of the outbreak.

Should there be a substantial outbreak in New Zealand, the economic and social impacts could be significantly broader than described here.

Impacts on our projections

Our economic projections were finalised on 5 February. They incorporate a coronavirus scenario where there is no substantial outbreak in New Zealand and the outbreak overseas is beginning to be contained by the end of February 2020. Consistent with this, travel disruption is significant through February, and begins to gradually ease from March. Under such a scenario, the channels described above will result in a temporary impact on New Zealand's economy.

At the time our projections were finalised, the scenario was broadly consistent with the working assumptions of a range of government agencies that are closely monitoring the outbreak.

The key assumptions underpinning the scenario are outlined below:

- GDP growth is 0.3 percentage points lower than otherwise in the March 2020 quarter. Lower export volumes are partly offset by a decline in import volumes and higher inventories.
- Service exports are 4 percent lower and goods exports are around 0.5 percent lower in the March 2020 quarter. Both gradually recover to their original levels by the December 2020 quarter. This is consistent with direct disruptions to travel lasting 6 weeks.
- Export prices are around 0.5 percent lower over the projection period, mainly reflecting the recent decline in whole milk powder prices.
- The New Zealand dollar TWI depreciated following the coronavirus outbreak. We assume it appreciates to 72 and remains around that level over the projection period. This is consistent with our assumption that the outbreak starts to be contained by the end of February.
- Oil prices are assumed to be around USD 60 per barrel over the projection.

There are some channels we have not captured in our assumptions because they are difficult to estimate or may be immaterial if the economic impacts of the outbreak are short-lived. These include confidence effects, the possibility of a more general decline in willingness to travel, disruption to migration plans, and any fiscal response. We have also not accounted for some second round effects, such as travel and trade diversion, and broader spill-overs to global growth.

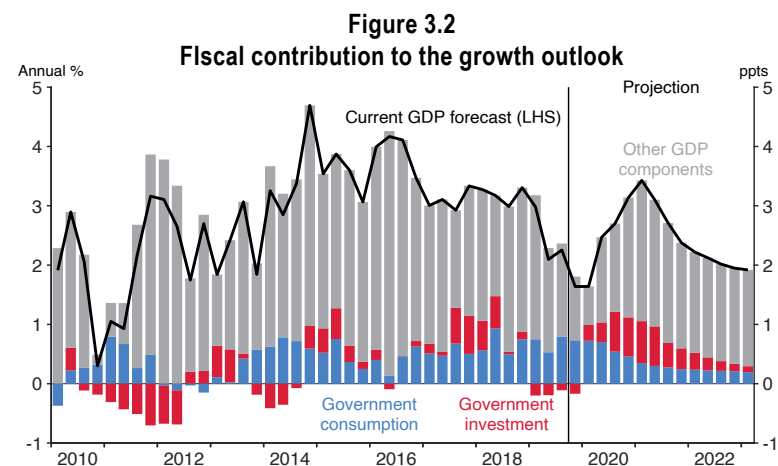
Given our assumptions, the implications for monetary policy are small at this stage. This is because monetary policy takes time to have its full effect on the economy, and the impacts of coronavirus are assumed to be short-lived. However, the monetary policy implications would be larger if the outbreak and economic impacts are more significant or persist for longer than we have assumed.

Along with government agencies, we are closely monitoring the coronavirus outbreak and its impacts on New Zealand's economy. We will adjust monetary policy as needed to continue to meet our inflation and employment objectives.

2. The Government's new investment package

In December 2019, the Government announced a substantial investment package of \$12bn, equivalent to around 4 percent of annual nominal GDP. The Treasury forecasts that \$8.1bn will be spent between June 2020 and June 2024, mainly on infrastructure projects. We have incorporated this additional spending into our latest forecasts.

Fiscal stimulus is already supporting economic activity through additional government consumption allocated in *Budget 2019*. The new investment package adds to this support over the medium term (figure 3.2). The investment package amounts to up to 0.6 percent of GDP each year over the projection period. However, the overall impact on GDP is likely to be somewhat smaller than this.



Source: Stats NZ, Treasury, RBNZ Estimates.

In part, this reflects that the planned increase in government spending is likely to draw resources from the private sector, reducing private sector investment. Greater competition for resources may increase the costs of some inputs, such as wages in the construction sector and prices for materials and equipment. This impact may be particularly significant given the current tight labour market and busy construction sector. Additionally, some of the resources needed for government projects might be imported, reducing the impact on New Zealand GDP.

Even accounting for these effects, the government investment package supports the outlook for GDP, employment and inflationary pressure in the economy. As a result, the new investment packages assists the Reserve Bank in meeting its inflation and employment objectives.

There remains some uncertainty about the exact timing of the higher government spending and how it will impact GDP, employment, and inflationary pressure. However, some projects identified by the Government are ready to be implemented, reducing the uncertainty somewhat.

3. Understanding the effects of public sector wage growth

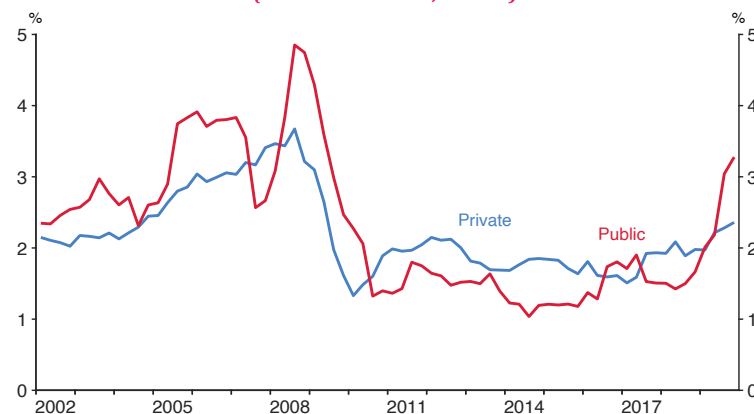
Public sector wage growth increased sharply in 2019 to a 10-year high. The annual growth rate accelerated from around 1.5 percent in mid-2018 to 3.3 percent in the December 2019 quarter (figure 3.3). It is important for us to understand the extent to which higher public sector wage growth will affect our inflation and employment objectives.

The recent stronger public sector wage growth has been particularly pronounced in the healthcare, public safety, and education sectors (figure 3.4). This reflects pay settlements for nurses, police, and teachers between late 2018 and mid-2019. These agreements have contributed significantly to stronger public sector wage inflation over 2019.

Another part of the increase in public sector wages is likely a reflection of tightness in the labour market.

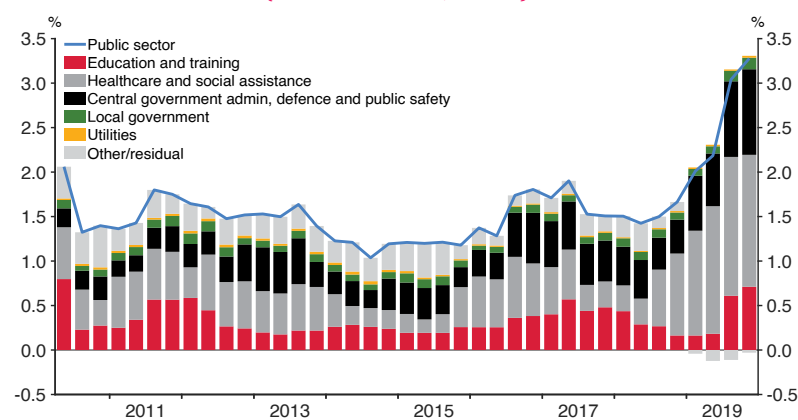
Higher wage growth increases household income and spending, leading to demand pressures that can put upwards pressure on CPI inflation. However, the impact of the recent stronger public sector wage growth on overall household income appears to be small. In part this reflects that, compared to private sector wages, public sector wages are a smaller share of overall household income. Public sector wages can also affect our projections via the impact on private sector wages. Recent experience provides little evidence of public sector wages spilling into the private sector. Overall, we do not expect the increase in public sector wages to have a material impact on broader inflationary pressures.

Figure 3.3
Wage growth by sector
(Labour Cost Index, annual)



Source: Stats NZ.

Figure 3.4
Public sector wage growth by subsector
(Labour Cost Index, annual)



Source: Stats NZ, RBNZ estimates.

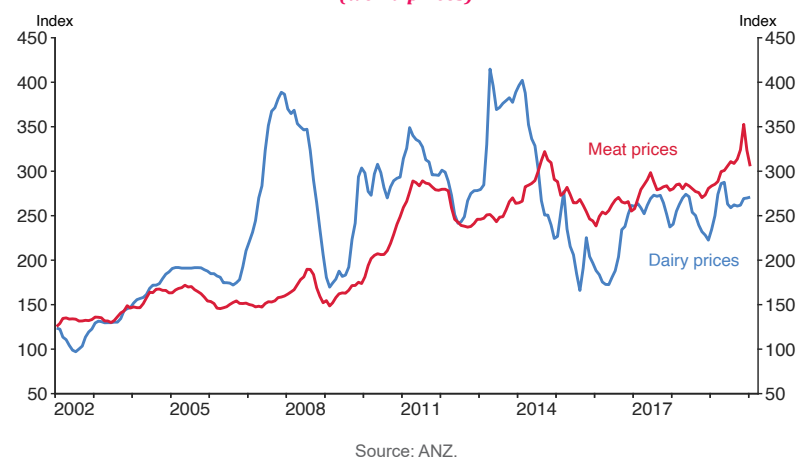
Note: Subsector contributions are Reserve Bank estimates.

4. Implications of our high terms of trade of trade

As a small open economy, New Zealand is exposed to fluctuations in the global economy. Trading-partner growth has slowed since mid-2018, weighing on domestic growth. Historically, as the global economy has slowed our export prices have tended to fall more than our import prices, reducing our terms of trade. However, in 2019 the terms of trade increased, despite the slowdown in global growth.

Developments unrelated to the global slowdown have supported prices for New Zealand's key commodity exports. The African swine fever outbreak in China has significantly reduced the global supply of pork. Global prices for other meats have increased significantly as consumers, particularly in China, have substituted to alternative meats (figure 3.5). International dairy prices have also held up. Drought conditions have reduced dairy production in some key dairy-producing countries and China's strong demand for dairy products has supported dairy prices.

Figure 3.5
Dairy and meat export prices
(world prices)



Import prices have eased since early 2019, reflecting the impact of slower global growth on global inflationary pressure. In addition, New Zealand's imported manufactured goods have continued to gradually become cheaper.

The high terms of trade has provided support to domestic incomes and spending. However, our modelling indicates that these impacts have only partially offset the more extensive impact of slowing global growth.

We project the terms of trade to remain elevated over the projection period, while global growth remains subdued (figure 3.6). We have assumed the impacts of the coronavirus outbreak will reduce prices for some of our exports in the near term. However, subdued global milk production and rebound demand from China are expected to support dairy prices later in 2020.

In addition, we expect pork supply issues to continue to support meat prices. Import prices are expected to remain subdued as global growth and inflation remain low over the projection.

Figure 3.6
Terms of trade and global growth outlook



Source: Haver Analytics, Stats NZ, RBNZ estimates.

5. Monetary policy implications of the Reserve Bank's capital policy

The Reserve Bank announced in December that it would increase capital requirements for New Zealand-incorporated banks.² The new capital policy will make the banking system safer for all New Zealanders and will be gradually introduced over the next seven years.

The capital policy is like an insurance policy. New Zealand bank customers, creditors, and shareholders incur a small cost through time to avoid a significant cost for the economy in the future. As such, the policy provides New Zealanders with more certainty over time.

By increasing the spread between bank lending rates and the OCR, the policy is expected to lower the average level of GDP when the economy is not in a downturn. As part of this, we would expect firms and households to spend and invest a little less. However, in a downturn, more certainty, higher confidence, and better access to credit are expected to result in much higher spending and investment than without the policy.

The full impacts of the policy will not happen straight away, as the policy is being phased in over seven years. However, the exact timing of the impacts will depend on how banks respond to the policy, and how households and firms adjust to slightly higher bank lending spreads and reduced uncertainty.

² For a high-level review of the policy, see the [Capital Review Go-to-guide](#).

³ The neutral OCR is the level of the OCR that is neither expansionary nor contractionary. See [Estimating New Zealand's neutral interest rate](#) for a discussion of our neutral OCR indicator suite.

The transition to the new policy will mean the OCR needs to be slightly lower than otherwise for us to continue to meet our inflation and employment objectives. The impact on the OCR has been more than offset by other developments since the November *Statement*, such as stronger house prices and government spending. We expect the monetary policy implications to be largely temporary – a response to the transitional effects of the policy.

The higher lending spread should reduce the neutral level of the OCR, but we do not expect the impact to be large. This partly reflects that the higher lending spread only directly impacts bank lending, not other forms of finance such as capital markets and non-bank lending. Other reasons for a smaller impact include that we expect the incidence of the higher spread to be shared amongst savers and borrowers.

We have therefore not adjusted our estimate of the neutral OCR. We will continue to rely largely on our neutral OCR indicator suite (see figure 5.4). To the extent that the neutral OCR falls, this should be picked up by the suite over time. As some of the indicators in the suite are forward looking, the suite may already incorporate some of the policy's impacts.

Overall, the economy will benefit from the capital policy, and its monetary policy implications appear to be small and largely transitory. We will remain alert to the impacts of the policy transition, in part through our monitoring of credit market conditions and our regular engagement with banks and businesses.

Chapter 4

Economic projections



Subdued GDP growth over 2019 and early 2020 is expected to ease capacity pressures and labour market conditions slightly in the near term. Growth is expected to recover from mid-2020 given fiscal stimulus, strong house prices, low interest rates, and elevated terms of trade. Global conditions have remained subdued, but there have been signs of stabilisation. The coronavirus outbreak is an emerging risk to the domestic growth outlook, and is assumed to reduce economic activity in 2020.

Continued monetary stimulus is needed to ensure that employment and inflation stay close to target.

This chapter summarises the economic projections that the MPC uses to make its policy assessment. These projections were finalised on 5 February.

Global economic growth has shown signs of stabilising but downside risks remain

- Economic growth in our trading partners remains around 3 percent after falling since mid-2018.
- Trading-partner growth is forecast to increase gradually over the projection period. Global growth in manufacturing output continues to be weak. However, tight labour markets are expected to support service sector growth in our trading partners.
- Over 2019, major central banks eased monetary policy in response to weaker growth and subdued inflation. Financial market participants had slightly pared back their expectations for further monetary stimulus prior to the coronavirus outbreak.
- The impact of the coronavirus outbreak on the global economy and New Zealand is an emerging risk. It is likely to impact economic growth in Asia during 2020. The outbreak will impact New Zealand's economy through a range of channels (see special topic 1).

The New Zealand dollar has been volatile

- Despite a recent depreciation in response to the coronavirus outbreak, the New Zealand TWI is around 1 percent higher than forecast in the November *Statement* (figure 4.1). This partly reflects stronger domestic developments and higher export prices.
- The appreciation of the New Zealand dollar moderates the outlook for growth and inflation. A stronger currency directly reduces tradables inflation by reducing the New Zealand dollar price of imported goods and services. This encourages spending on imports instead of domestically produced goods and services.

Figure 4.1
New Zealand dollar TWI
(quarterly average)

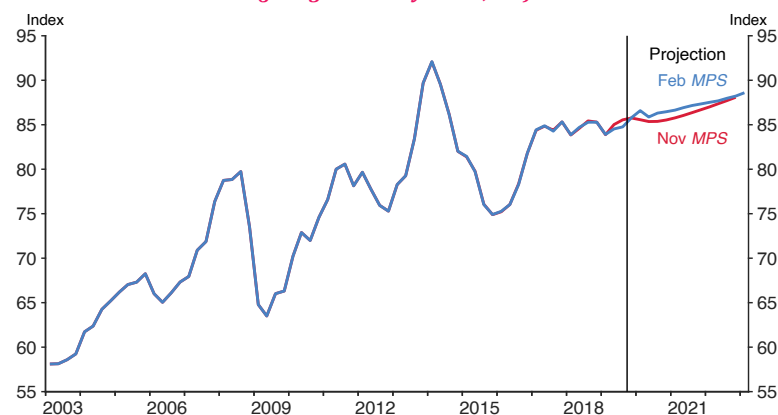


Source: RBNZ estimates.

The terms of trade remain elevated

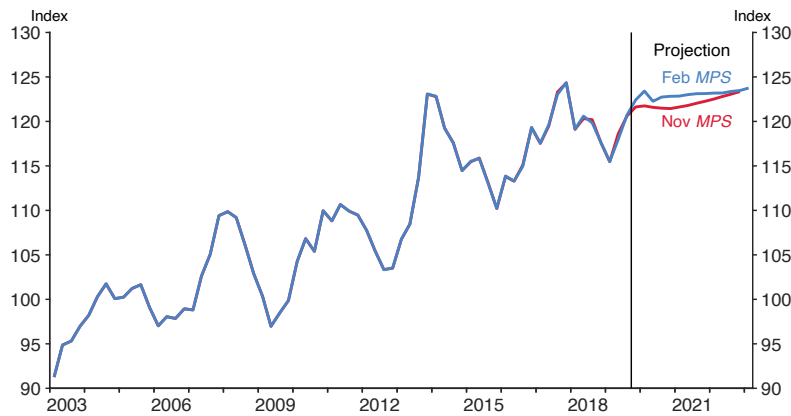
- New Zealand's export prices continue to increase. Globally, supply shortages and robust demand are supporting dairy and meat prices at high levels (figure 4.2). However, the coronavirus outbreak may reduce demand for some of our export products.
- Import prices are expected to increase gradually as global growth and inflation remain soft over the projection. Oil prices have been volatile in recent weeks, as market sentiment has deteriorated.

Figure 4.2
Export prices
(foreign currency terms, s.a.)



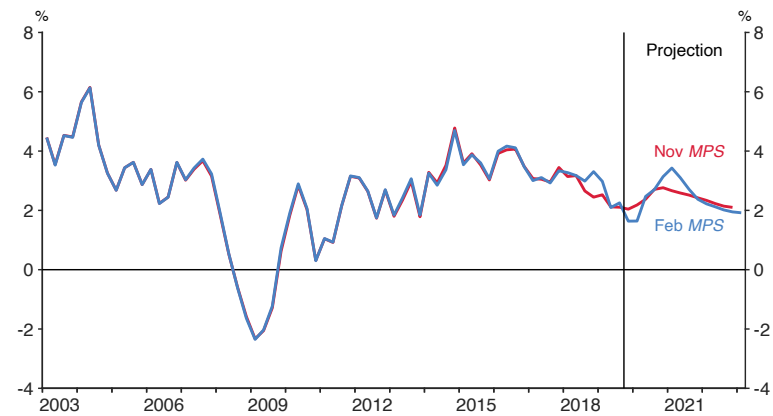
Source: Stats NZ, RBNZ estimates.

Figure 4.3
Terms of trade
(s.a.)



Source: Stats NZ, RBNZ estimates.

Figure 4.4
GDP growth
(annual)



Source: Stats NZ, RBNZ estimates.

We assume that Dubai oil prices remain around USD 60 per barrel over the projection. However, there is more uncertainty than usual surrounding this forecast.

- The terms of trade is expected to remain elevated over the projection period (figure 4.3). The high terms of trade is expected to support domestic incomes, partly offsetting the impact on New Zealand of the weaker world economy (see chapter 3).

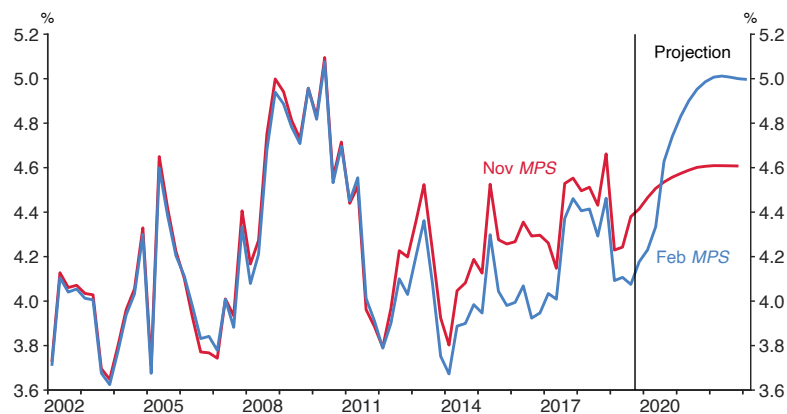
Domestic GDP growth is expected to be subdued in the near term

- GDP growth was revised up over 2018, meaning it slowed more sharply in the first half of 2019 than previously thought (figure 4.4). We expect growth to remain subdued into early 2020. This is consistent with business survey indicators and reflects the assumed impact of the coronavirus outbreak.
- Over the medium term, we expect GDP growth to recover from the relatively weak growth experienced during 2019 as fiscal stimulus supports aggregate demand, higher house prices support consumption, higher terms of trade boost domestic incomes, and low interest rates continue to support domestic growth.

Fiscal stimulus increases over the projection

- The Government announced a significant investment package in December (see special topic 2). As a result, government investment is expected to increase significantly from the second half of 2020 and to support economic activity over the remainder of the projection period (figure 4.5).
- We expect government consumption to support GDP growth over the first half of the projection, as outlined in *Budget 2019* and *HYEFU 2019*.

Figure 4.5
Government investment
(share of potential, s.a.)

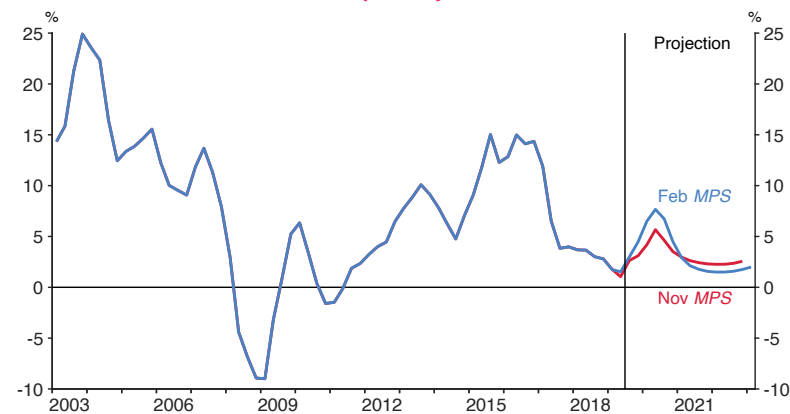


Source: Stats NZ, RBNZ estimates.

Stronger house price inflation drives higher household consumption

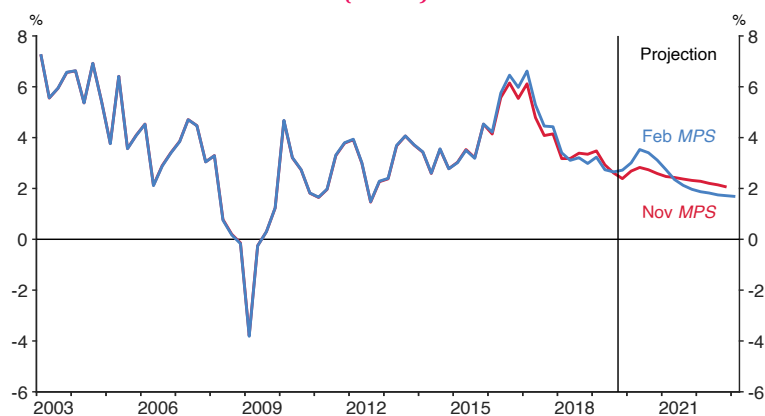
- House price inflation has continued to rebound from a soft patch in early 2019, partly in response to recent declines in mortgage rates (figure 4.6). The REINZ House Price Index indicates that annual house price inflation rose to nearly 7 percent in December 2019.
- Over the medium term, annual house price inflation is expected to slow as net immigration moderates, residential construction activity remains high, and the effects of past lower mortgage rates fade.

Figure 4.6
House price inflation
(annual)



Source: CoreLogic, RBNZ estimates.

Figure 4.7
Household consumption growth
(annual)



Source: Stats NZ, RBNZ estimates.

Figure 4.8
Business investment
(share of potential, s.a.)



Source: Stats NZ, RBNZ estimates.

- Stronger house price inflation is expected to support household consumption over the next year (figure 4.7).
- Household consumption growth is expected to moderate over the medium term as population growth slows and house price inflation eases. Rising wage growth provides some offset.

Business investment expected to decline as a share of the economy

- Business investment was revised up in the September 2019 GDP data release (figure 4.8). However, recent subdued business confidence and slower GDP growth are likely to continue to weigh on investment in the near term.
- Despite higher capacity pressure from late-2020, business investment is expected to decline as a share of GDP over the forecast period.
- The transition to higher bank capital requirements is assumed to reduce business investment only slightly in the near term (see special topic 5).
- The increased government investment outlined in *HYEFU* 2019 may compete for labour and other resources in the construction sector, particularly over the first half of the projection (see special topic 2). This may dampen private sector investment.

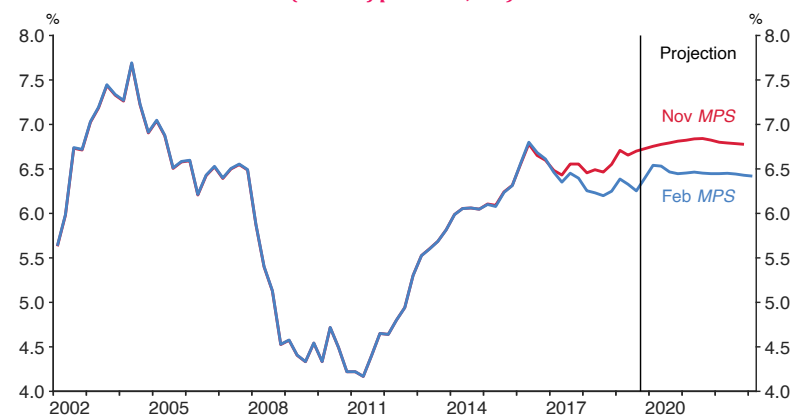
Residential investment remains elevated

- Residential investment growth is expected to pick up over the next six months, in line with recent high levels of residential building consent issuance (figure 4.9).
- Residential investment is forecast to decline very gradually as a share of GDP later in the projection period, reflecting ongoing capacity constraints in the construction sector.

Strong imports weigh on net exports

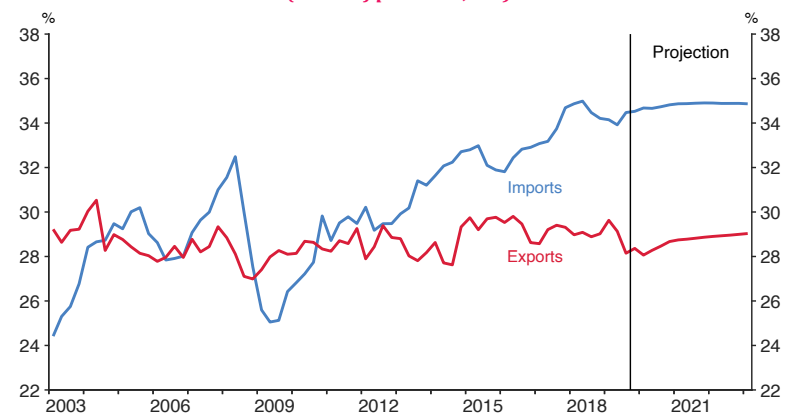
- Net export volumes are expected to be lower than forecast in the November *Statement*.
- Growth in imports picked up in the September 2019 quarter but has generally been weak since mid-2018. The lower New Zealand dollar TWI, and soft domestic growth have dampened demand for imports. The recent appreciation of the New Zealand dollar, high terms of trade, and stronger outlook for domestic spending are all projected to support imports over the forecast period.
- Growth in export volumes is expected to remain subdued over the projection period (figure 4.10). The coronavirus outbreak is expected to reduce tourist arrivals and spending (see special topic 1).

Figure 4.9
Residential investment
(share of potential, s.a.)



Source: Stats NZ, RBNZ estimates.

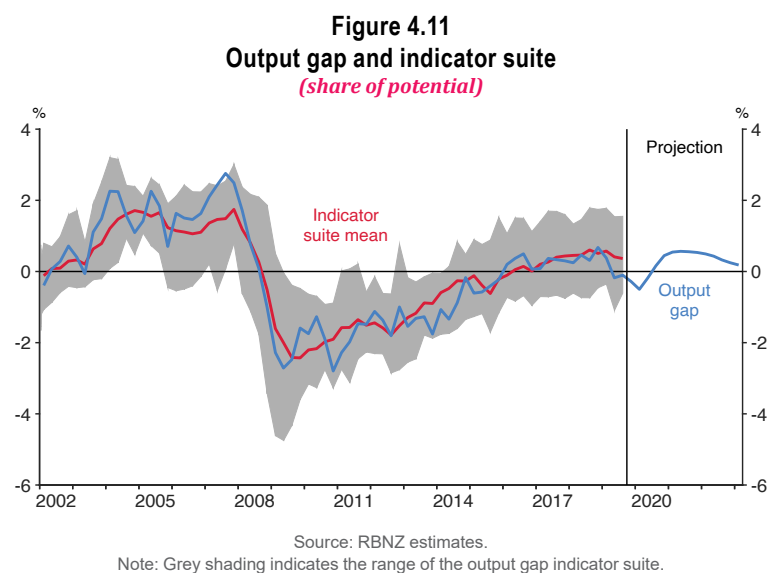
Figure 4.10
Export and import volumes
(share of potential, s.a.)



Source: Stats NZ, RBNZ estimates.

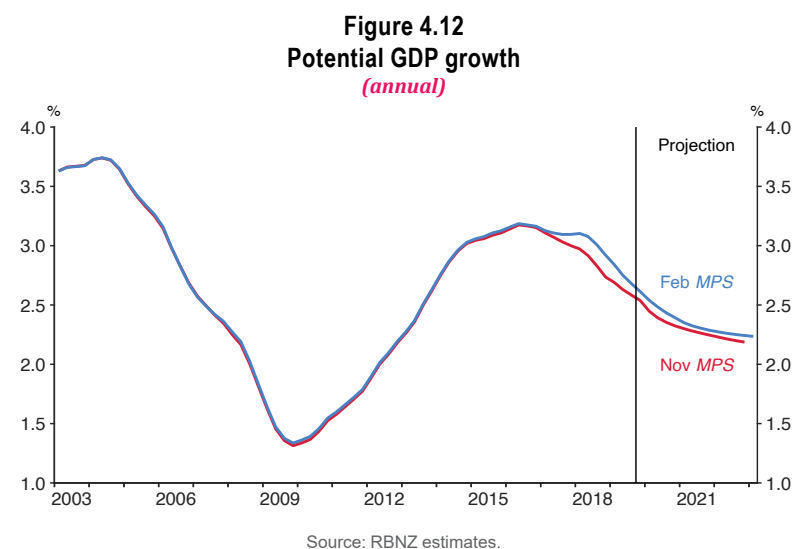
Capacity pressure has eased

- The mean of our suite of indicators for the output gap has declined slightly, following the decline in GDP growth in early 2019 (figure 4.11). We estimate that the output gap is currently around zero.
- The output gap is expected to fall slightly below zero in early 2020 as GDP growth remains below trend. Capacity pressures are then expected to build in late 2020 as GDP growth recovers to above its trend.



Potential GDP growth expected to decline

- We estimate that potential GDP growth declined since early 2018 (figure 4.12). This reflects the decline in labour force growth as a consequence of lower net immigration and the recent plateauing of labour force participation.
- Although we estimate that potential GDP growth has declined from its recent peak, we have revised up our estimates of potential GDP growth. This is consistent with the revisions to GDP growth through 2018.



Employment is at or slightly above its maximum sustainable level

- Our suite of labour market indicators suggests that employment is currently at or slightly above its maximum sustainable level (table 5.1).
- We expect weak GDP growth over 2019 will lead to a slight near-term increase in the unemployment rate as labour demand falls (figure 4.13).
- Over the projection period, we expect that stronger GDP growth will generate increased capacity pressure, increasing demand for labour. After a temporary increase, unemployment is expected to decline back to around 4 percent over the medium term.

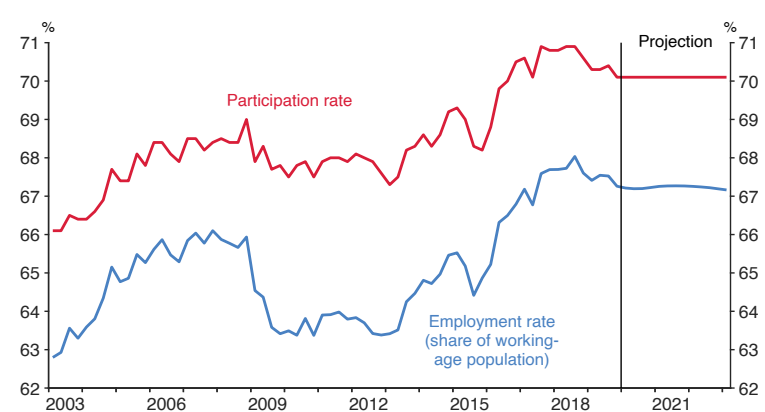
- Employment growth is expected to remain subdued in the near term, before recovering in 2020 as capacity pressure builds. With employment growth holding up relative to labour force growth, the employment rate is expected to remain flat over the forecast period (figure 4.14).
- The labour force participation rate peaked in mid-2018, and has since declined (figure 4.14). With a continuously aging population, we expect the participation rate to remain below its peak over the forecast period. Lower participation reduces labour supply, adding further pressure to an already tight labour market.

Figure 4.13
Unemployment rate
(s.a.)



Source: Stats NZ, RBNZ estimates.

Figure 4.14
Employment and participation rates
(s.a.)



Source: Stats NZ, RBNZ estimates.

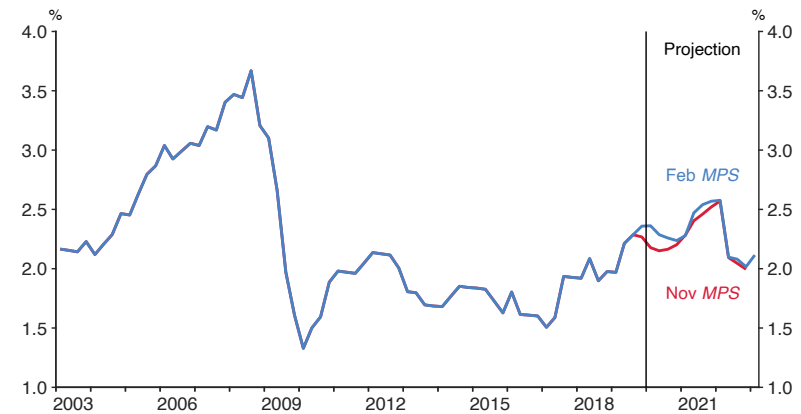
Wage inflation supported by the rising minimum wage

- Nominal wage growth has increased strongly since the start of 2017 (figure 4.15). This increase reflects continued tightening in the labour market, in addition to minimum wage increases and several large collective wage agreements in the public sector over the past two years.
- We expect annual wage inflation to decline slightly over 2020, as softer economic growth in 2019 feeds through into lower demand for labour.
- Over the medium term, rising wage inflation is driven by the tightening labour market and further announced minimum wage increases. Stronger public sector wage inflation is not expected to have a significant impact on consumer price inflation (see special topic 3).

CPI inflation remains around 2 percent

- Temporary factors are expected to boost annual CPI inflation to 2.2 percent in the March 2020 quarter (figure 4.16). We project CPI inflation to settle around the 2 percent target mid-point by late 2021.

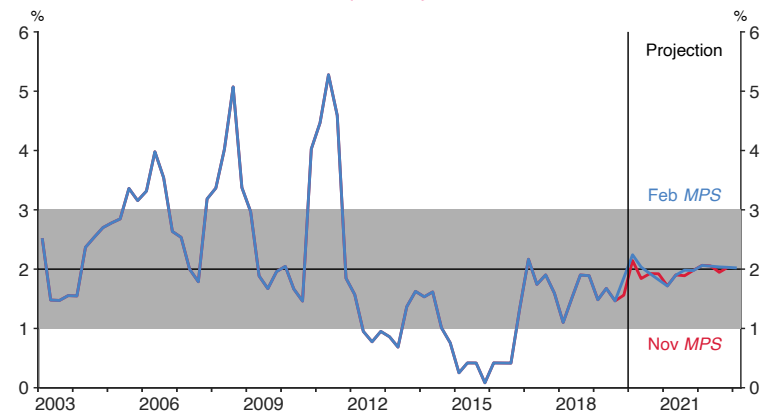
Figure 4.15
Private sector wage inflation
(annual)



Source: Stats NZ, RBNZ estimates.

Note: Annual growth in the Labour Cost Index falls in the June 2022 quarter when the contribution of the last announced increase in the minimum wage drops out.

Figure 4.16
CPI inflation
(annual)

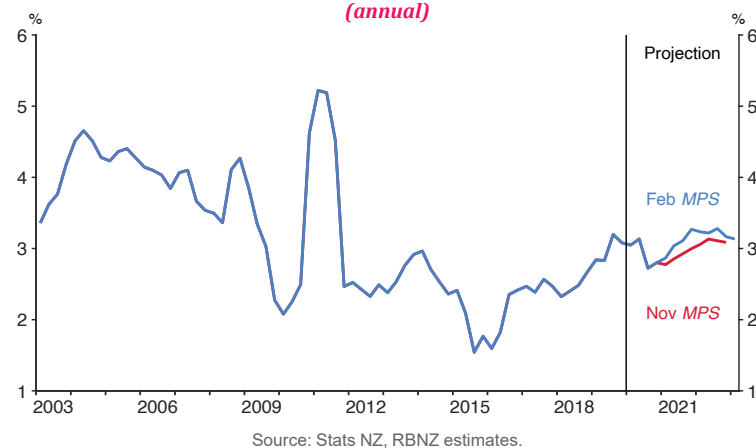


Source: Stats NZ, RBNZ estimates.

Capacity pressure lifts non-tradables inflation in the medium term

- Annual non-tradables inflation increased by 3.1 percent in the December 2019 quarter, in line with expectations in the November *Statement* (figure 4.17). Increases in measures of core inflation over the past year show that inflationary pressure is building (see figure 5.6).
- Some short-term factors affecting annual non-tradables inflation are expected to drop out of the annual inflation calculation in late 2020. Looking through that, domestic inflationary pressure is expected to ease slightly over the next year. This reflects our estimate that the output gap is currently around zero.
- Annual non-tradables inflation is expected to rise from late 2020, reaching 3.3 percent by mid-2022. This rise reflects increasing capacity pressures and higher wage inflation. In addition, recent higher inflation is expected to encourage firms to set prices in anticipation of faster increases in wages and input costs.

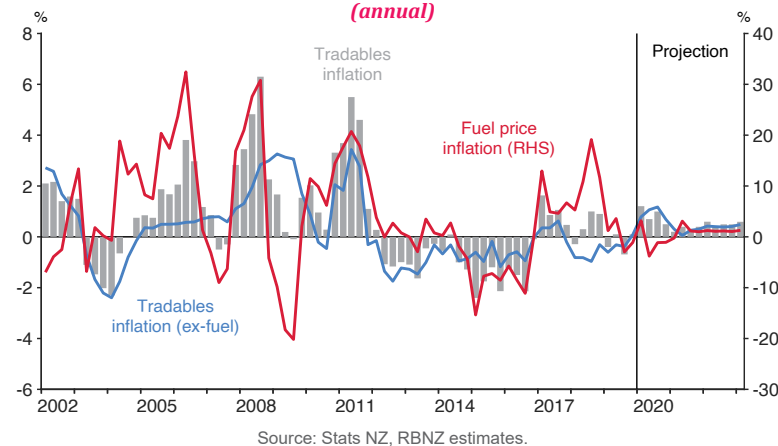
Figure 4.17
Non-tradables inflation
(annual)



Tradables inflation to increase, but remain below average

- Annual tradables inflation increased to 0.1 percent in the December 2019 quarter, higher than the 0.5 percent decline expected in the November *Statement*. Food prices fell less than expected in the December quarter, which is expected to support tradables inflation only temporarily given past volatility in food prices (figure 4.18).
- Looking through temporary volatility, tradables inflation excluding fuel is expected to settle at a low but positive level in the medium term. A higher outlook for the New Zealand dollar TWI than in the November *Statement* weighs on the medium-term outlook for tradables inflation.
- Annual fuel price inflation is expected to rise temporarily in the March 2020 quarter. High fuel prices help to push CPI inflation to 2.2 percent.
- Fuel price inflation is projected to remain subdued over the projection, consistent with our oil price and New Zealand dollar TWI assumptions.

Figure 4.18
Tradables inflation
(annual)



Chapter 5

Appendices



Appendix 1: Our recent research

This appendix summarises various streams of monetary policy-related research produced by Reserve Bank staff over the past six months.

Research shapes our understanding of the New Zealand economy, and ultimately influences policy decisions. Our monetary policy framework is informed by new developments in economic thought and best-practice modelling techniques. To this end, we maintain robust ties with academia, other central banks, and supra-national organisations.

Economic analysis by our staff is disseminated through *Bulletin* articles, *Analytical Notes*, Discussion Papers and academic journals as well as speeches made by the Bank's senior leaders at various forums.

Analytical Notes

The *Remit* requires us to support maximum sustainable employment. Our research programme continues to explore different facets of New Zealand's labour market and their implications for capacity pressure and inflation. All of the *Analytical Notes* that we have published recently focus on issues related to the labour market.

A very rich dataset from Inland Revenue, which covers changes in the employment status of all tax-paying New Zealanders, forms the basis of two of these papers. In the *Note*, [**Low wage growth and job-to-job transitions: Evidence from administrative data in New Zealand**](#), Christopher Ball, Nicolas Groshenny, Özer Karagedikli, Murat Özbilgin and Finn Robinson find that low wage growth since the Global Financial Crisis can partly be explained by a relatively low number of people switching jobs.

People who move from one job to another often receive higher wage offers than unemployed job-seekers. With fewer people moving from one job to another after the crisis, fewer people have received higher wage offers.

More empirical analysis based on this dataset establishes that job transition flows are also useful in predicting the unemployment rate in New Zealand. The unemployment rate is a crucial measure in the Reserve Bank's toolkit to evaluate labour market slack, since maximum sustainable employment is not directly observable. In the paper, [Using job transitions data as a labour market indicator](#), Christopher Ball, Adam Richardson, and Thomas van Florenstein Mulder find that nowcasts from machine learning models estimated on the job transitions dataset are superior to standard forecasting benchmarks in predicting movements in the unemployment rate.

One of the key measures used by the Reserve Bank to assess the state of economic activity in New Zealand is the economy's GDP. However, the measurement of GDP is prone to errors, and the data could also be subject to substantial revisions over time. In the *Note*, [GDP Plus: An economic activity indicator for New Zealand](#), Michael Callaghan and Thomas van Florenstein Mulder show that information from the New Zealand labour market can help to refine our assessment of economic activity in the goods market. The GDP Plus indicator that the authors develop for New Zealand is generated by an econometric model that uses employment data as well as production GDP and expenditure GDP. The new indicator is smoother than the conventional GDP measures, and is also less vulnerable to revisions over time.

Firms often adjust production to meet fluctuations in demand by varying the amount of that they use. Firms can make this adjustment either by changing the number of people they employ or by altering the number of hours that their employees work. In the *Note* [Employment and hours worked adjustment in New Zealand's labour market](#), Jamie Culling and Finn Robinson find that the adjustment of labour demand in New Zealand over the long term is largely driven by changes in the number of people that firms employ. However, in the short term, during economic downturns and booms, New Zealand businesses tend to adjust the number of hours worked by the workers, before they resort to reducing or expanding the pool of employees.

Publications in academic journals

Our staff regularly publish their work in peer-reviewed journals and conference volumes. The quality control by expert reviewers ensures that the analytical frameworks that underpin our policy formulation remain rigorous, and are updated with the latest advances in economic theory and statistical methodologies.

[Skilled migration and business cycle dynamics](#)

Journal of Economic Dynamics and Control

Christie Smith and Christoph Thoenissen

[Macprudential policies in a low interest-rate environment](#)

Journal of Money, Credit and Banking

Margarita Rubio and Fang Yao

[Measuring uncertainty for New Zealand using a data-rich approach](#)

The Australian Economic Review

Trung Duc Tran, Tuğrul Vehbi, and Benjamin Wong

Speeches

Insights from our staff's research also inform the speeches made by the Bank's senior leaders at domestic and international forums. This section lists recent Reserve Bank speeches that have been made available on the [Reserve Bank website](#).

The global economy and New Zealand

Speech – 29 Jan 2020

Assistant Governor Christian Hawkesby sets out the framework that the Bank uses to analyse the international economy, and explores some of the factors that may influence monetary policy in 2020.

Monetary policy: A compass point in uncertain times

Speech – 15 Nov 2019

Governor Adrian Orr notes that timely and decisive changes to the OCR by the Reserve Bank, in conjunction with forward guidance, supports the New Zealand economy in the wake of heightened global economic uncertainty and weakening growth.

Speaking, listening and understanding: The art of monetary policy communications

Speech – 29 Oct 2019

Assistant Governor Christian Hawkesby explains the different facets of the Bank's communication approach; how we strive to improve the quality of information that we share with the financial markets, and how we interpret the information that we receive.

Supporting sustainable economic growth through financial stability policy

Speech – 16 Oct 2019

Deputy Governor Geoff Bascand describes the financial stability concerns that arise in a world of low interest rates, and explains how the Bank's prudential and macroprudential policies make the New Zealand economy more resilient to economic shocks.

Emerging challenges and lessons from the Māori economic renaissance

Speech – 27 Sep 2019

Governor Adrian Orr highlights the important role that Māori businesses play in the New Zealand economy, and explains how Māori values have influenced the Bank's longer-term strategy on climate change, an important risk to financial stability. He also emphasises that the increase in minimum bank capital requirements will benefit all New Zealanders by creating a safer banking system that encourages longer-term lending considerations.

Opportunity or risk? Our choice

Speech – 26 Sep 2019

Governor Adrian Orr explains that slowing global economic growth and persistently low inflation motivated the Bank's decision to lower the OCR by 50 basis points in August 2019. A more tentative easing of monetary policy risked inflation expectations remaining stubbornly below the inflation target, making it more difficult to meet the Bank's monetary policy objectives in the future.

Appendix 2: Maximum sustainable employment indicators

TABLE 5.1

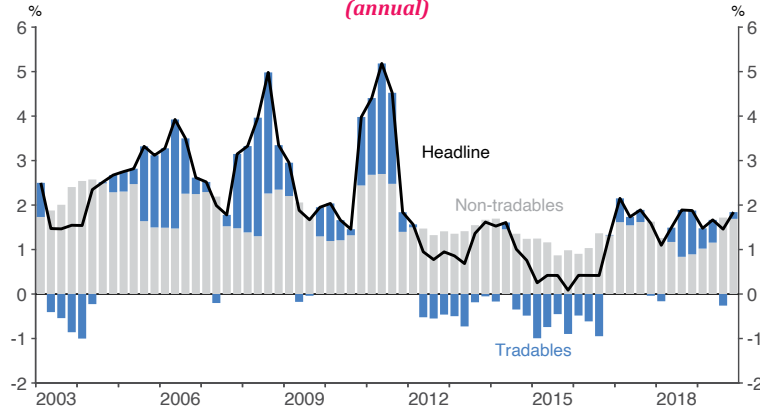
Summary of indicators of employment and maximum sustainable employment (MSE)

Indicator type	Employment below MSE	Employment at MSE	Employment above MSE
Indicator suite	<ul style="list-style-type: none"> • Employment rate gap (filled jobs) • Employment rate gap 	<ul style="list-style-type: none"> • LUCIL • Unemployment rate gap (structural model) 	<ul style="list-style-type: none"> • Hours worked gap • Unemployment rate gap (reduced-form model)
Unemployment		<ul style="list-style-type: none"> • Youth unemployment rate (15-19 years) 	<ul style="list-style-type: none"> • Youth unemployment (20-24 years) • Māori and Pacific unemployment • Underutilisation rate • Underemployment rate • Medium-term unemployment
Business surveys		<ul style="list-style-type: none"> • Overtime worked (QSBO) 	<ul style="list-style-type: none"> • Difficulty finding labour (QSBO) • Labour as limiting factor (QSBO)
Flows data	<ul style="list-style-type: none"> • Job-finding rate 		<ul style="list-style-type: none"> • Job-separation rate
Other			<ul style="list-style-type: none"> • Vacancy rate

- LUCIL is the Labour Utilisation Composite Index in Levels – a principal component of a range of labour market variables.
- The job-finding rate is the probability of an unemployed person finding a job in a given quarter. The job-separation rate is the probability of an employed person losing their job in a given quarter. These rates have been adjusted to account for flows in and out of the labour force.
- QSBO stands for Quarterly Survey of Business Opinion.
- The Analytical Note [‘Evaluating indicators of labour market capacity in New Zealand’](#) outlines a range of labour market indicators that the Reserve Bank monitors.

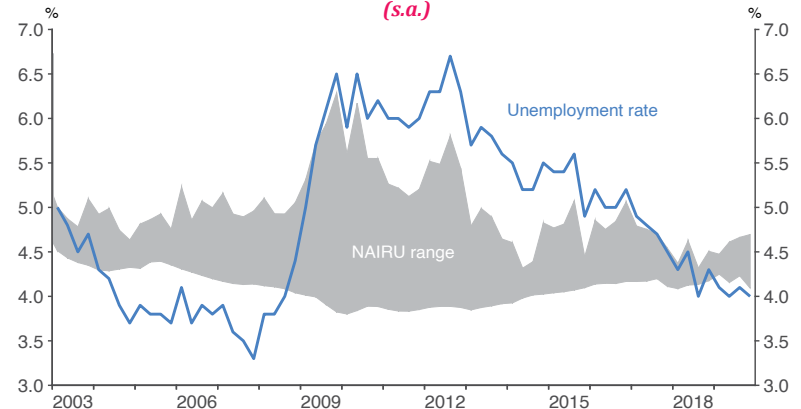
Appendix 3: Chart pack

Figure 5.1
Composition of CPI inflation
(annual)



Source: Stats NZ, RBNZ estimates.

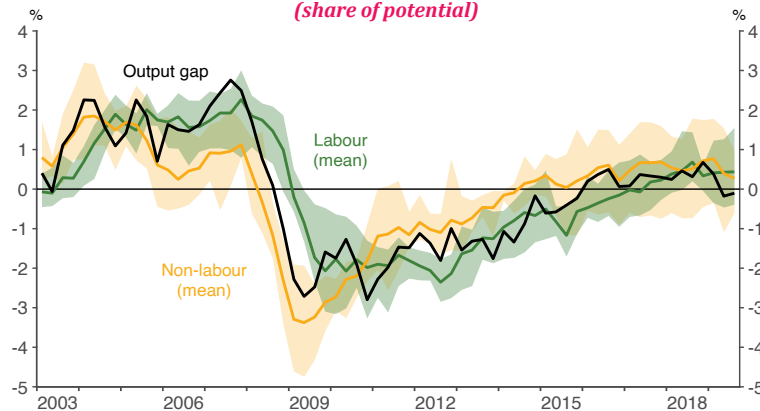
Figure 5.3
Unemployment rate and NAIRUs
(s.a.)



Source: Stats NZ, RBNZ estimates.

Note: NAIRU stands for Non-Accelerating Inflation Rate of Unemployment. Shaded area indicates the range between the maximum and minimum values from different NAIRU estimates.

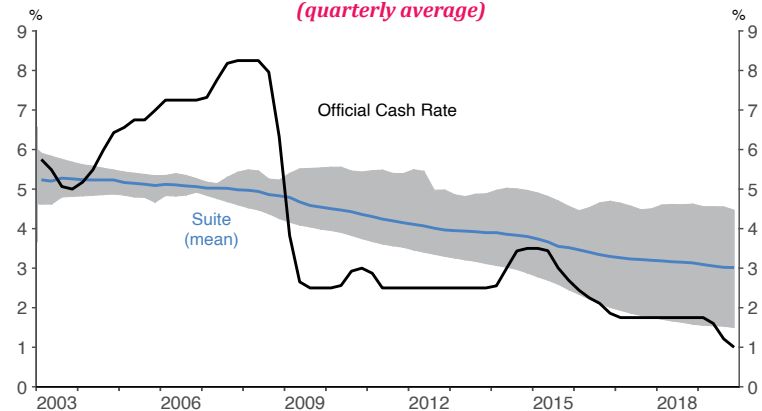
Figure 5.2
Output gap and labour/non-labour output gap indicator suite
(share of potential)



Source: RBNZ estimates.

Note: Shaded areas indicate the range between the maximum and minimum values of labour and non-labour indicators in the output gap indicator suite.

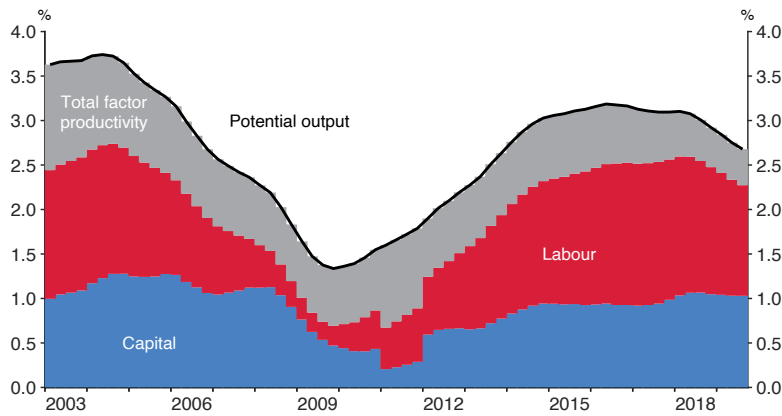
Figure 5.4
OCR and neutral OCR indicator suite
(quarterly average)



Source: RBNZ estimates.

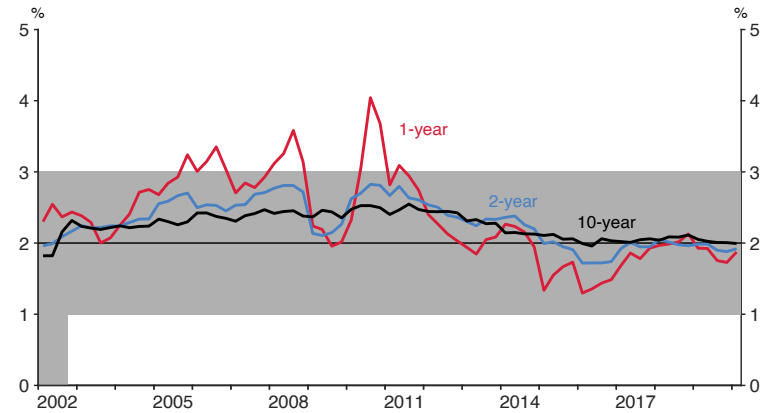
Note: Shaded area indicates the range between the maximum and minimum values from a suite of neutral OCR indicators.

Figure 5.5
Composition of potential output growth
(annual)



Source: RBNZ estimates.

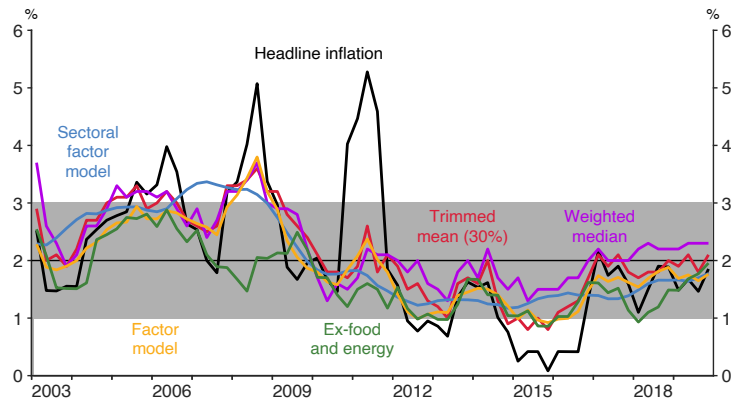
Figure 5.7
Inflation expectations
(annual)



Source: RBNZ estimates.

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

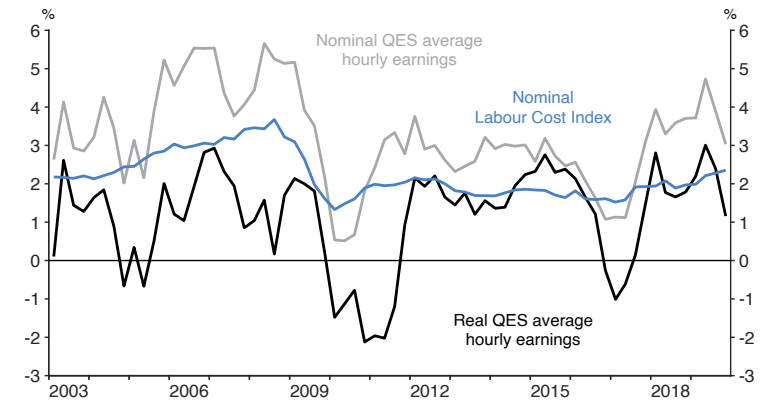
Figure 5.6
Headline inflation and core inflation
(annual)



Source: Stats NZ, RBNZ estimates.

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

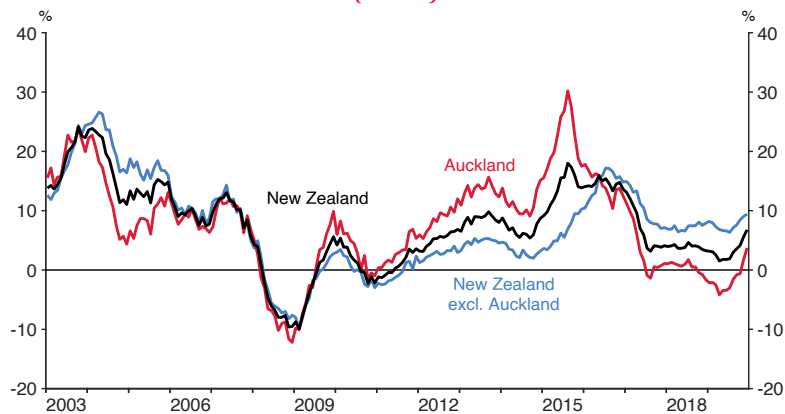
Figure 5.8
Private sector wage growth
(annual)



Source: Stats NZ, RBNZ estimates.

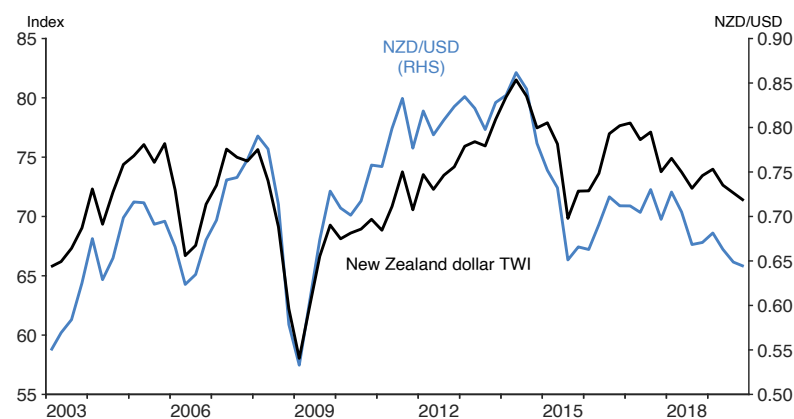
Note: Real QES average hourly earnings is deflated with headline CPI inflation.

Figure 5.9
House price inflation
(annual)



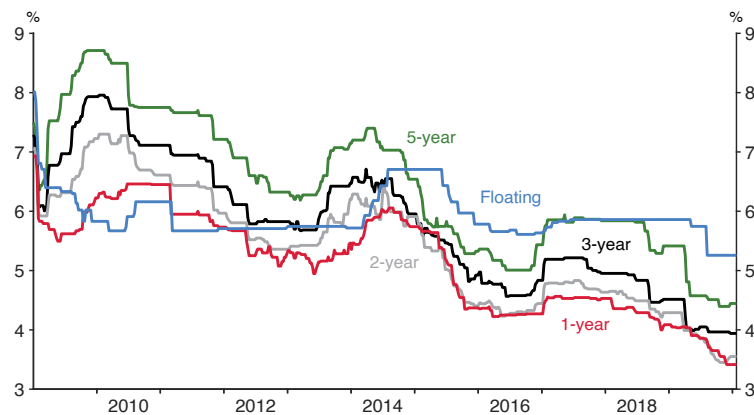
Source: REINZ.

Figure 5.11
New Zealand dollar exchange rates



Source: Reuters, RBNZ estimates.

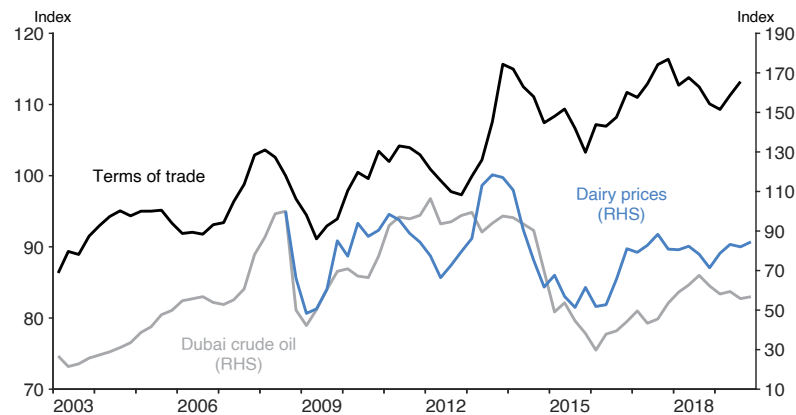
Figure 5.10
Mortgage rates



Source: interest.co.nz, RBNZ estimates.

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

Figure 5.12
Terms of trade, dairy and oil price indices



Source: Stats NZ, GlobalDairyTrade, Reuters, RBNZ estimates.

Appendix 4: Statistical tables

TABLE 5.2

Key forecast variables

		GDP growth Quarterly	CPI inflation Quarterly	CPI inflation Annual	TWI	OCR
2018	Mar	0.7	0.5	1.1	74.9	1.8
	Jun	1.0	0.4	1.5	73.7	1.8
	Sep	0.6	0.9	1.9	72.4	1.8
	Dec	1.0	0.1	1.9	73.4	1.8
2019	Mar	0.4	0.1	1.5	74.0	1.8
	Jun	0.1	0.6	1.7	72.6	1.6
	Sep	0.7	0.7	1.5	72.0	1.2
	Dec	0.4	0.5	1.9	71.3	1.0
2020	Mar	0.4	0.5	2.2	72.2	1.0
	Jun	0.9	0.4	2.0	72.2	1.0
	Sep	0.9	0.6	1.9	72.2	1.0
	Dec	0.9	0.4	1.8	72.2	1.0
2021	Mar	0.7	0.4	1.7	72.2	1.0
	Jun	0.6	0.6	1.9	72.2	1.1
	Sep	0.6	0.7	2.0	72.2	1.2
	Dec	0.5	0.4	2.0	72.2	1.3
2022	Mar	0.5	0.5	2.1	72.2	1.5
	Jun	0.5	0.6	2.1	72.2	1.6
	Sep	0.4	0.6	2.0	72.2	1.7
	Dec	0.5	0.4	2.0	72.2	1.8
2023	Mar	0.5	0.5	2.0	72.2	1.9

TABLE 5.3

Measures of inflation, inflation expectations, and asset prices

	Jun	2018 Sep	Dec	Mar	2019 Jun	Sep	Dec	2020 Mar
Inflation (annual rates)								
CPI	1.5	1.9	1.9	1.5	1.7	1.5	1.9	
CPI non-tradables	2.4	2.5	2.7	2.8	2.8	3.2	3.1	
CPI tradables	0.3	1.0	0.9	-0.4	0.1	-0.7	0.1	
Sectoral factor model estimate of core inflation	1.6	1.7	1.7	1.7	1.6	1.7	1.8	
CPI trimmed mean (30 percent)	1.8	1.8	2.0	1.9	2.1	1.8	2.1	
CPI weighted median	2.3	2.2	2.2	2.2	2.3	2.3	2.3	
GDP deflator (expenditure)	2.1	1.2	0.0	1.1	1.8	2.5		
Inflation expectations								
ANZ Business Outlook – inflation one year ahead (quarterly average to date)	2.2	2.2	2.2	2.1	1.9	1.7	1.7	
RBNZ Survey of Expectations – inflation two years ahead	2.0	2.0	2.0	2.0	2.0	1.9	1.8	1.9
RBNZ Survey of Expectations – inflation five years ahead	2.1	2.2	2.1	2.1	2.0	1.9	2.0	2.0
RBNZ Survey of Expectations – inflation 10 years ahead	2.2	2.1	2.2	2.1	2.0	2.1	2.0	2.0
Long-run inflation expectations ¹	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0
Asset prices (annual percent changes)								
Quarterly house price index (CoreLogic NZ)	3.7	3.0	2.8	1.7	1.5			
REINZ Farm Price Index (quarterly average to date)	3.8	5.6	3.4	10.3	4.4	1.1	-0.8	
NZX 50 (quarterly average to date)	16.8	17.3	8.3	10.7	16.9	18.6	25.7	26.6

¹ Long-run expectations are extracted from a range of surveys using a Nelson-Siegel model. Source: ANZ Bank, Aon Consulting, Consensus Economics, RBNZ estimates.

TABLE 5.4

*Measures of labour market conditions**(seasonally adjusted, changes expressed in annual percent terms)*

	Jun	2018 Sep	Dec	Mar	2019 Jun	Sep	Dec
Household Labour Force Survey							
Unemployment rate	4.5	4.0	4.3	4.1	4.0	4.1	4.0
Underutilisation rate	12.0	11.4	12.1	11.3	11.1	10.4	10.0
Labour force participation rate	70.9	70.9	70.6	70.3	70.3	70.4	70.1
Employment rate (percentage of working-age population)	67.7	68.0	67.6	67.4	67.5	67.5	67.3
Employment growth	3.2	2.3	1.9	1.4	1.6	1.0	1.0
Average weekly hours worked	34.1	33.7	34.1	34.4	34.0	34.1	33.9
Number unemployed (thousand people)	122	109	118	113	109	114	111
Number employed (million people)	2.60	2.62	2.62	2.62	2.64	2.65	2.65
Labour force (million people)	2.72	2.73	2.74	2.74	2.75	2.76	2.76
Extended labour force (million people)	2.82	2.83	2.85	2.84	2.85	2.85	2.84
Working-age population (million people)	3.84	3.85	3.88	3.89	3.91	3.92	3.94
Quarterly Employment Survey							
Filled jobs growth	1.2	1.2	1.3	1.1	1.0	1.1	0.9
Average hourly earnings growth (private sector, ordinary time)	3.3	3.6	3.7	3.7	4.7	3.9	3.0
Other data sources							
Labour Cost Index growth, private sector	2.1	1.9	2.0	2.0	2.2	2.3	2.4
Labour Cost Index growth, private sector, unadjusted	3.5	3.5	3.6	3.6	3.8	3.8	3.7
Estimated net migration (published, thousands, quarterly)	9.5	10.2	9.2				
Change in All Vacancies Index	7.5	6.2	6.9	4.8	-2.5	-1.0	-2.8

Note: The All Vacancies Index is produced by the Ministry of Business, Innovation and Employment as part of the Jobs Online report, which shows changes in job vacancies advertised by businesses on several internet job boards. The unadjusted Labour Cost Index (LCI) is an analytical index that reflects quality changes in addition to price changes (whereas the official LCI measures price changes only). For definitions of underutilisation, the extended labour force, and related concepts, see Statistics New Zealand (2016), *Introducing underutilisation in the labour market*. Estimated net migration (published) is the Stats NZ outcomes-based measure and recent outturns are subject to large revisions.

TABLE 5.5

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

March year	Actuals							Projections			
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Final consumption expenditure											
Private	2.3	3.7	3.0	3.9	6.2	4.4	3.1	2.8	3.2	2.1	1.7
Public authority	-0.2	2.1	3.4	2.3	2.3	3.0	3.9	3.7	2.7	1.4	1.1
Total	1.7	3.3	3.1	3.5	5.3	4.1	3.3	3.0	3.1	1.9	1.6
Gross fixed capital formation											
Residential	17.6	15.1	8.2	7.1	8.7	-1.2	1.4	4.5	3.9	2.0	2.0
Other	1.4	8.1	7.8	2.9	0.7	9.9	4.4	2.3	2.1	4.1	2.8
Total	4.9	9.8	7.9	4.0	2.8	6.9	3.7	2.9	2.6	3.5	2.6
Final domestic expenditure	2.3	4.7	4.2	3.6	4.7	4.7	3.4	3.0	3.0	2.3	1.8
Stockbuilding ¹	-0.3	-0.2	0.5	-0.3	0.1	0.2	-0.2	-0.1	0.0	0.0	0.0
Gross national expenditure	2.0	4.4	4.4	3.1	4.8	5.2	3.2	2.7	3.0	2.4	1.9
Exports of goods and services	3.1	0.1	4.6	6.5	1.6	3.5	2.7	0.1	2.8	3.4	2.7
Imports of goods and services	1.3	8.1	7.4	2.3	5.2	7.2	3.9	2.5	3.5	2.7	2.2
Expenditure on GDP	2.5	2.1	3.5	4.3	3.8	4.0	2.8	2.0	2.8	2.6	2.0
GDP (production)	2.2	2.6	3.6	3.6	3.7	3.2	3.1	1.9	2.9	2.6	2.0
GDP (production, March qtr to March qtr)	1.8	3.3	3.5	4.0	3.0	3.3	3.0	1.6	3.4	2.2	1.9

1 Percentage point contribution to the growth rate of GDP.

TABLE 5.6

Summary of economic projections
(annual percent change, unless specified otherwise)

March year	Actuals							Projections			
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Price measures											
CPI	0.9	1.5	0.3	0.4	2.2	1.1	1.5	2.2	1.7	2.1	2.0
Labour costs	1.8	1.7	1.8	1.8	1.5	1.9	2.0	2.4	2.3	2.6	2.1
Export prices (in New Zealand dollars)	-4.8	11.6	-9.1	-0.2	3.9	3.3	1.3	5.7	0.1	1.0	1.2
Import prices (in New Zealand dollars)	-3.9	-3.0	-3.4	1.2	0.7	1.9	4.5	-1.1	0.6	0.7	0.7
Monetary conditions											
OCR (year average)	2.5	2.5	3.4	2.9	2.0	1.8	1.8	1.2	1.0	1.3	1.7
TWI (year average)	74.0	77.6	79.3	72.6	76.5	75.6	73.4	72.0	72.2	72.2	72.2
Output											
GDP (production, annual average % change)	2.2	2.6	3.6	3.6	3.7	3.2	3.1	1.9	2.9	2.6	2.0
Potential output (annual average % change)	2.1	2.6	3.0	3.1	3.2	3.1	3.0	2.6	2.4	2.3	2.2
Output gap (% of potential GDP, year average)	-1.4	-1.4	-0.7	-0.3	0.3	0.3	0.5	-0.3	0.2	0.5	0.3
Labour market											
Total employment (seasonally adjusted)	0.2	3.6	3.2	1.8	5.4	2.5	1.4	1.3	1.5	1.4	1.2
Unemployment rate (March quarter, seasonally adjusted)	5.7	5.5	5.4	5.2	4.9	4.3	4.1	4.1	4.1	4.1	4.2
Trend labour productivity	1.0	1.0	0.9	0.9	0.8	0.8	0.8	1.0	1.1	1.1	1.1
Key balances											
Government operating balance (% of GDP, year to June)	-2.0	-1.2	0.2	0.7	1.5	1.9	2.4	-0.3	-0.1	0.1	0.3
Current account balance (% of GDP)	-3.7	-2.5	-3.5	-2.4	-2.5	-2.9	-3.5	-3.1	-2.9	-2.8	-2.8
Terms of trade (SNA measure, annual average % change)	-4.3	11.7	-0.3	-3.0	2.7	4.5	-2.6	2.3	1.3	0.4	0.3
Household saving rate (% of disposable income)	0.6	0.4	-1.0	-0.6	-0.1	-0.2	-0.3	-0.9	0.0	0.5	-0.1
World economy											
Trading-partner GDP (annual average % change)	3.3	3.5	3.7	3.4	3.5	3.9	3.5	3.0	3.1	3.3	3.3
Trading-partner CPI (TWI weighted)	2.3	2.3	1.0	1.2	1.9	1.9	1.4	2.4	1.9	2.1	2.2