



Monetary Policy Statement

May 2017

Policy Targets Agreement

This agreement between the Minister of Finance and the Governor of the Reserve Bank of New Zealand (the Bank) is made under section 9 of the Reserve Bank of New Zealand Act 1989 (the Act).

The Minister and the Governor agree as follows:

1. Price stability

- a) Under Section 8 of the Act the Reserve Bank is required to conduct monetary policy with the goal of maintaining a stable general level of prices.
- b) The Government's economic objective is to promote a growing, open and competitive economy as the best means of delivering permanently higher incomes and living standards for New Zealanders. Price stability plays an important part in supporting this objective.

2. Policy target

- a) In pursuing the objective of a stable general level of prices, the Bank shall monitor prices, including asset prices, as measured by a range of price indices. The price stability target will be defined in terms of the All Groups Consumers Price Index (CPI), as published by Statistics New Zealand.
- b) For the purpose of this agreement, the policy target shall be to keep future CPI inflation outcomes between 1 per cent and 3 per cent on average over the medium term, with a focus on keeping future average inflation near the 2 per cent target midpoint.

3. Inflation variations around target

- a) For a variety of reasons, the actual annual rate of CPI inflation will vary around the medium-term trend of inflation, which is the focus of the policy target. Amongst these reasons, there is a range of events whose impact would normally be temporary. Such events include, for example, shifts in the aggregate price level as a result of exceptional movements in the prices of commodities traded in

world markets, changes in indirect taxes, significant government policy changes that directly affect prices, or a natural disaster affecting a major part of the economy.

- b) When disturbances of the kind described in clause 3(a) arise, the Bank will respond consistent with meeting its medium-term target.

4. Communication, implementation and accountability

- a) On occasions when the annual rate of inflation is outside the medium-term target range, or when such occasions are projected, the Bank shall explain in *Policy Statements* made under section 15 of the Act why such outcomes have occurred, or are projected to occur, and what measures it has taken, or proposes to take, to ensure that inflation outcomes remain consistent with the medium-term target.
- b) In pursuing its price stability objective, the Bank shall implement monetary policy in a sustainable, consistent and transparent manner, have regard to the efficiency and soundness of the financial system, and seek to avoid unnecessary instability in output, interest rates and the exchange rate.
- c) The Bank shall be fully accountable for its judgements and actions in implementing monetary policy.



Hon Bill English

Minister of Finance



Graeme Wheeler

Governor Designate
Reserve Bank of New
Zealand

Dated at Wellington 20 September 2012

Monetary Policy Statement

May 2017

Projections finalised on 4 May 2017. Data finalised on 5 May 2017.
Policy assessment finalised on 10 May 2017.



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Chapter 1

Policy assessment



The Reserve Bank today left the Official Cash Rate (OCR) unchanged at 1.75 percent.

Global economic growth has increased and become more broad-based over recent months. However, major challenges remain with on-going surplus capacity and extensive political uncertainty.

Stronger global demand has helped to raise commodity prices over the past year, which has led to some increase in headline inflation across New Zealand's trading partners. However, the level of core inflation has generally remained low. Monetary policy is expected to remain stimulatory in the advanced economies, but less so going forward.

The trade-weighted exchange rate has fallen by around 5 percent since February, partly in response to global developments and reduced interest rate differentials. This is encouraging and, if sustained, will help to rebalance the growth outlook towards the tradables sector.

GDP growth in the second half of 2016 was weaker than expected. Nevertheless, the growth outlook remains positive, supported by on-going accommodative monetary policy, strong population growth, and high levels of household spending and construction activity.

House price inflation has moderated further, especially in Auckland. The slowing in house price inflation partly reflects loan-to-value ratio

restrictions and tighter lending conditions. This moderation is projected to continue, although there is a risk of resurgence given the continuing imbalance between supply and demand.

The increase in headline inflation in the March quarter was mainly due to higher tradables inflation, particularly petrol and food prices. These effects are temporary and may lead to some variability in headline inflation over the year ahead. Non-tradables and wage inflation remain moderate but are expected to increase gradually. This will bring future headline inflation to the midpoint of the target band over the medium term. Longer-term inflation expectations remain well-anchored at around 2 percent.

Developments since the February *Monetary Policy Statement* on balance are considered to be neutral for the stance of monetary policy.

Monetary policy will remain accommodative for a considerable period. Numerous uncertainties remain and policy may need to adjust accordingly.

Graeme Wheeler

A handwritten signature in black ink, appearing to read 'G Wheeler'.

Governor

Chapter 2

Key policy judgements

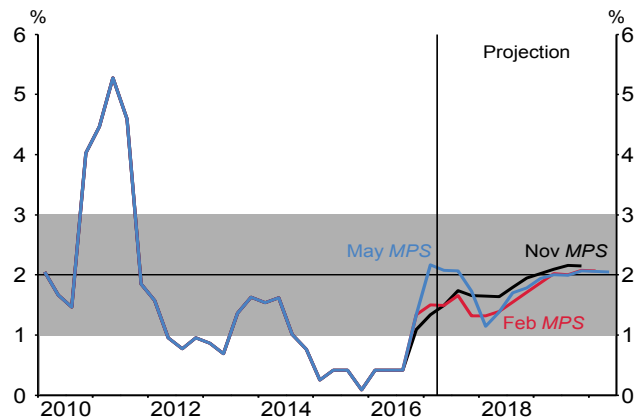


- Annual CPI inflation has increased to 2.2 percent, reflecting a sharp but temporary increase in tradables inflation. Non-tradables inflation remains subdued but is increasing gradually.
- Recent GDP growth has been weaker than previously anticipated, and a slowing in the housing market has persisted into 2017.
- Monetary policy is expected to remain accommodative to support above-trend GDP growth and headline inflation settling near the target midpoint.
- Longer-term inflation expectations remain well anchored around the target midpoint. Recent rises in short-term expectations are consistent with the observed increase in headline inflation.

In recent years, weak global conditions have suppressed inflationary pressure in New Zealand via a range of channels. Weak commodity prices, subdued global inflation, and a high New Zealand dollar exchange rate have held down tradables inflation. Weakness in overseas labour markets relative to New Zealand has supported net immigration, contributing to strong population growth and labour supply. Weakness in export prices has dampened business investment and consumption through its effect on incomes and confidence. Persistent weakness in headline inflation has flowed through to low inflation expectations and suppressed inflation through wage- and price-setting behaviour. In this context, monetary policy stimulus is necessary to support above-trend GDP growth and generate a sustained increase in headline inflation towards the target midpoint.

Annual CPI inflation increased to 2.2 percent in the March 2017 quarter, returning inflation to near the Bank's target midpoint (figure 2.1). The sharp increase in inflation over the past two quarters is largely due to the recovery in fuel prices from low levels, compounded by recent increases in food prices. However, as the effects of sharp increases in fuel and food prices dissipate over the year ahead, annual headline inflation is expected to drop back to below 2 percent (see box D in chapter 5). Non-tradables inflation remains subdued, but has increased over recent

Figure 2.1
CPI inflation
(annual)



Source: Statistics New Zealand, RBNZ estimates.

quarters. Inflation settling near the target midpoint in the medium term requires a lift in non-tradables inflation, and this is expected to result from increasing capacity pressure across the economy.

Headline inflation across advanced economies has also strengthened over recent quarters. As in New Zealand, this largely reflects higher commodity prices. The near-term outlook for global economic activity has continued to improve. However, while risks to the global outlook have become more balanced, they remain skewed to the downside. Measures of policy uncertainty remain elevated, but have reduced since February. Overall, spare capacity remains across our main trading partners, despite stimulatory monetary policy. Measures of core inflation remain low.

Low global interest rates and the positive outlook for the New Zealand economy relative to other advanced economies have supported investor appetite for New Zealand dollar assets over the past year, contributing

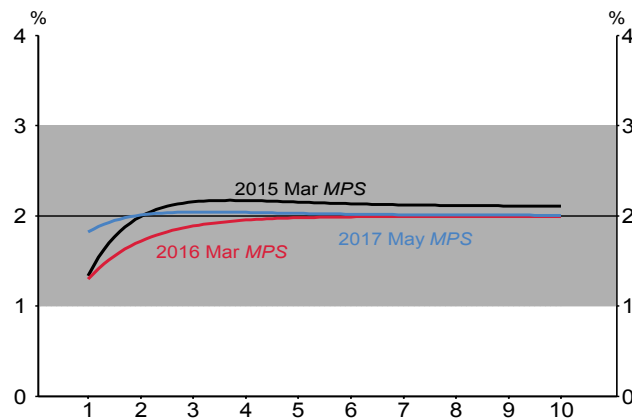
to an elevated New Zealand dollar exchange rate. However, the New Zealand dollar trade-weighted index (TWI) has depreciated by 5 percent since the February *Statement*. The lower New Zealand dollar, in conjunction with a decline in long-term interest rates, suggests some easing in financial conditions in New Zealand.

Despite the lower exchange rate, tradables inflation is expected to remain low for some time. This reflects an assumed slowing in the pace of recovery in global oil prices and a subdued outlook for global inflation more broadly.

The relative weakness of foreign labour markets has continued to contribute to high net immigration. Migration flows are increasing demand for housing and other goods and services, albeit by less than in previous cycles. Migration is also contributing significantly to the supply of labour in the economy, which is offsetting the inflationary pressure associated with the increase in demand. The increase in labour supply has been absorbed by strong employment growth, with the unemployment rate trending lower.

Low interest rates are stimulating activity in the New Zealand economy, and, along with rapid population growth, have underpinned strong GDP growth. However, GDP growth was weaker than expected in the December 2016 quarter. While some of this weakness is due to temporary factors, downward revisions to GDP growth in the September quarter show that domestic activity was softer through the second half of 2016 than previously assumed. In light of this new information, our estimate of the current degree of capacity pressure in the economy is lower than previously assumed. However, a range of measures suggests capacity pressure in the economy is rising.

Figure 2.2
Inflation expectations curve
(annual, by number of years ahead)



Source: RBNZ estimates.

The observed slowing in house price inflation from mid-2016 has continued into 2017. Low interest rates and strong population growth continue to underpin demand for housing. However, changes to loan-to-value ratio (LVR) restrictions and the rise in mortgage rates in late 2016 have tempered housing demand. It is uncertain how persistent the impacts of these factors will be and the degree to which affordability constraints will limit future house price inflation.

The draw on resources from the construction sector is contributing to capacity pressure in the economy. Reflecting strong housing demand alongside a housing shortage, residential construction is expected to increase over the year ahead. However, accessing labour and materials is becoming more difficult. Lending standards for residential property development have also tightened.

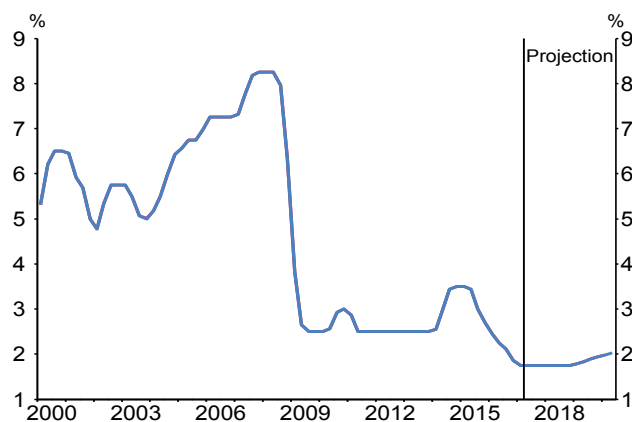
Longer-term inflation expectations remain anchored around the target midpoint (figure 2.2). Short-term inflation expectations have risen in recent quarters. Short-term expectations tend to be influenced by observed inflation outcomes, and recent moves are consistent with increases in headline inflation. Volatility in headline inflation over the coming year could cause further fluctuations in short-term measures.

Subdued non-tradables inflation and persistent weak wage inflation suggest that low past inflation continues to weigh on price- and wage-setting decisions. The dampening effect of this on future inflation should gradually dissipate as inflation lifts in a more sustained manner.

With domestic inflationary pressure remaining subdued, continued accommodative monetary policy is appropriate and the Official Cash Rate (OCR) is expected to remain low for a prolonged period (figure 2.3). The *Policy Targets Agreement* (PTA) mandates the Bank to keep future CPI inflation between 1 and 3 percent, focusing on keeping average headline inflation near the 2 percent target midpoint. The Bank is flexible in its approach to inflation targeting, looking through temporary volatility in inflation and setting policy in a way that avoids unnecessary volatility in output, interest rates, and the exchange rate. The current stance of monetary policy supports strong GDP growth, such that non-tradables inflation gradually increases and headline inflation settles around the target midpoint over the medium term. Premature tightening of policy could undermine growth, causing inflation to persistently undershoot the target midpoint. Further policy easing, in an attempt to see non-tradables inflation strengthen more quickly, would risk generating unnecessary volatility in the economy.

The economic projections outlined in this *Statement* set out the Bank's plan for interest rates to meet the requirements of the PTA. There is always uncertainty around these projections – economic conditions

**Figure 2.3
Official Cash Rate**



Source: RBNZ estimates.

can change suddenly and economic relationships can evolve differently from the past. Our assessment of the outlook and the appropriate policy responses depend on a range of judgements. In the current projections, the key judgements relate to how evolving global conditions, domestic capacity and financial constraints, and domestic policy stimulus affect the New Zealand economy. If the assumptions underpinning the projections prove to be inconsistent with incoming data, or if risks to the projections materialise, the outlook for policy will be revised.

Global economic conditions

Global economic conditions are assumed to continue to improve gradually, with spare capacity being absorbed, underlying inflation increasing, and monetary policy becoming less accommodative.

Having increased through 2016 and into 2017, global commodity prices are assumed to continue to rise, albeit at a slower pace than over the past year. The Dubai oil price is assumed to increase over the projection to around USD 60 per barrel, which contributes to an increase in New Zealand's import prices. After increasing sharply since April 2016, whole milk powder prices remain close to our medium-term assumption of USD 3,000 per tonne. Abstracting from volatility, we assume dairy prices will remain around this level over the medium term.

Having depreciated since the time of the February *Statement*, the New Zealand dollar TWI is assumed to depreciate further over the projection. Relative to February, this lower level of the TWI provides support to tradables inflation. If world interest rates remain low for longer than currently anticipated, or if recent changes in market sentiment reverse, the TWI could be higher than currently projected. If a higher exchange rate were to reflect weak conditions abroad, it could necessitate more-stimulatory monetary policy to offset the impact on inflationary pressure. However, if a higher TWI were the result of stronger economic conditions in New Zealand, this could be accompanied by increasing domestic capacity pressures, and a monetary policy response might not be necessary.

As labour market conditions improve across advanced economies, net immigration is assumed to decline from its current high level. Net immigration is difficult to forecast, and it could remain high, particularly if labour market conditions in Australia do not improve as anticipated. Alternatively, net immigration could decline faster if the labour market recovery in Australia gains pace. However, what is important for monetary policy is the increase in demand stemming from these flows relative to their impact on the productive capacity of the economy, and the implications for inflationary pressure. The net demand impulse from migration has been weaker in this cycle compared to earlier migration

cycles. Should the balance between supply and demand associated with migration evolve differently, policy may need to respond to the change in inflationary pressure.

Domestic demand

Low interest rates, strong population growth, high house prices, and increasing incomes are supporting consumption growth. In recent years, consumption growth was subdued relative to what would be suggested by these drivers. However, consumption growth strengthened through 2016 and this recent strength is assumed to persist. There are risks both to the upside and downside of this projection. An unexpected fall in commodity prices affecting confidence and incomes, or increased concerns regarding debt sustainability, could cause weaker household consumption than assumed. Alternatively, recent increases in confidence and incomes from the high terms of trade could boost consumption by more than currently anticipated.

House price inflation has slowed since mid-2016. We assume house price inflation remains low relative to recent history, as the moderating effect of changes to LVR policy is reinforced by affordability constraints and higher mortgage rates. House price inflation could be stronger if the dampening effects of past policy changes prove to be less persistent, or if affordability constraints are less binding. Alternatively, house price inflation could be weaker than expected should affordability concerns become more pronounced or should banks become more cautious in their mortgage lending.

Residential investment is expected to increase further over the next year and remain at a high level through the projection. This reflects strong population growth and a shortage of housing, and is supported by low interest rates. However, capacity pressure is rising in the construction

sector. In addition, banks' appetite for lending for residential property development appears to have reduced and is reflected in some tightening of lending standards for this sector. There is uncertainty regarding the degree to which construction activity will be constrained by the availability of labour, finance, land, and materials. If one or more of these constraints becomes more binding, construction activity could be weaker than we anticipate, although the inflation outcomes could vary based on the interaction of constraints.

Inflation expectations are currently close to 2 percent across time horizons. Even as short-term measures have fluctuated over the past 18 months, longer-term inflation expectations have remained well anchored. In our projections, low past inflation is assumed to dampen future inflation through wage- and price-setting behaviour, although this effect gradually dissipates. Should households and businesses begin to set prices in a more forward-looking manner consistent with longer-term inflation expectations, or adjust their behaviour more quickly in response to recent increases in inflation, this dampening effect on future inflation could be weaker than assumed.

Box A

Recent monetary policy decisions

Over recent years, global economic and financial conditions have suppressed inflationary pressure in New Zealand. This saw the Bank cut the OCR by 175 basis points between June 2015 and November 2016 (figure A.1).

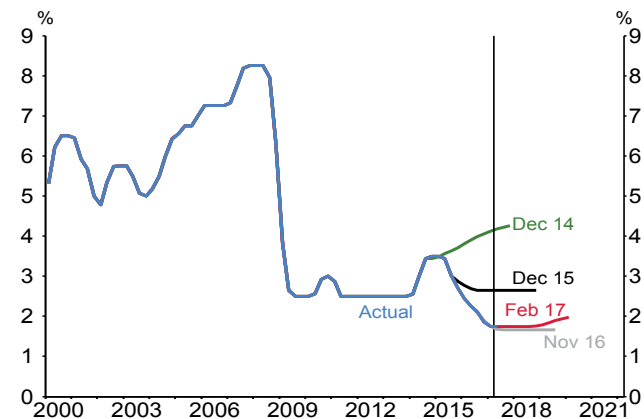
From mid-2014, the deterioration in the global economic outlook caused falls in the prices of New Zealand's imports and key commodity exports. Export prices fell more sharply than import prices, which led to the terms of trade deteriorating. In addition, non-tradables inflation was persistently weaker than anticipated given the Bank's assessment of capacity pressures and price-setting dynamics at the time. The Bank initially responded by scaling back the extent of its projected tightening of monetary policy. Concurrently, longer-term New Zealand interest rates fell, leading to an easing in financial conditions. As the deterioration in global conditions translated into lower incomes and confidence, weighing on consumption and investment activity, the Bank cut the OCR by 100 basis points between June and December 2015. As the outlook for global growth stabilised later in the year, the Bank moved to a more neutral policy stance, having reduced the OCR to 2.5 percent.

In early 2016, the global growth outlook was again downgraded and financial markets entered a period of heightened volatility. Domestically, inflationary pressure remained weak and the Bank observed a shift down in inflation expectations across time horizons. These factors contributed to the Bank's decision to cut the OCR by 25 basis points and renew its easing bias at the March 2016 *Statement*. The Bank subsequently held the OCR steady at 2.25 percent while retaining an easing bias, as

it observed offsetting inflationary pressure from a stronger domestic economy and an appreciation of the New Zealand dollar exchange rate.

In the August *Statement*, the Bank reassessed the outlook for tradables inflation, observing that the outlook for global inflation and policy rates suggested tradables inflation might remain lower than previously anticipated for some time. Through its dampening effect on headline inflation, this low tradables inflation was contributing to low inflation expectations. The Bank judged it necessary to cut the OCR to 2 percent to support strong domestic growth and to reduce the risk of further sustained falls in inflation expectations, and indicated that further easing might be warranted.

Figure A.1
Official Cash Rate



Source: RBNZ estimates.

Note: The Bank changed from publishing the forward path for the 90-day interest rate to the OCR in November 2016. For illustrative purposes, previous 90-day interest rate tracks have been adjusted to an OCR basis by applying an assumption of a constant spread between the 90-day rate and the OCR.

Observing a continued strengthening in domestic economic activity and low non-tradables inflation consistent with the Bank's projections, the Bank adhered to its previously communicated policy strategy and cut the OCR to 1.75 percent in the November *Statement*. The Bank also communicated that policy would remain accommodative, with a flat forward path for the OCR.

This sentiment was reiterated in the February 2017 *Statement*. Strong population growth and low interest rates were supporting activity, and growth was strengthening as expected. Headline inflation returned to the target band as expected, as previous declines in fuel prices dropped out of the annual inflation calculation. Near-term inflation expectations increased, while longer-term inflation expectations remained well anchored. With the OCR unchanged, the Bank retained the view that monetary policy would remain accommodative for an extended period.

Table 2.1
Key forecast variables

		GDP growth Quarterly	CPI inflation Quarterly	CPI inflation Annual	TWI	OCR
2015	Mar	0.1	-0.2	0.3	77.9	3.5
	Jun	0.1	0.4	0.4	76.1	3.4
	Sep	1.0	0.3	0.4	69.8	3.0
	Dec	1.0	-0.5	0.1	72.1	2.7
2016	Mar	0.7	0.2	0.4	72.2	2.4
	Jun	0.8	0.4	0.4	73.6	2.3
	Sep	0.8	0.3	0.4	77.0	2.1
	Dec	0.4	0.4	1.3	77.6	1.9
2017	Mar	0.9	1.0	2.2	77.9	1.8
	Jun	0.9	0.3	2.1	76.0	1.8
	Sep	1.0	0.3	2.1	75.8	1.8
	Dec	0.9	0.1	1.7	75.5	1.8
2018	Mar	0.9	0.4	1.1	75.3	1.8
	Jun	0.8	0.6	1.4	75.2	1.8
	Sep	0.8	0.6	1.7	75.0	1.8
	Dec	0.7	0.2	1.8	74.8	1.8
2019	Mar	0.7	0.6	1.9	74.6	1.8
	Jun	0.5	0.6	2.0	74.4	1.8
	Sep	0.5	0.6	2.0	74.3	1.9
	Dec	0.5	0.2	2.1	74.1	1.9
2020	Mar	0.5	0.5	2.1	74.0	2.0
	Jun	0.5	0.6	2.0	73.9	2.0

Chapter 3

International developments

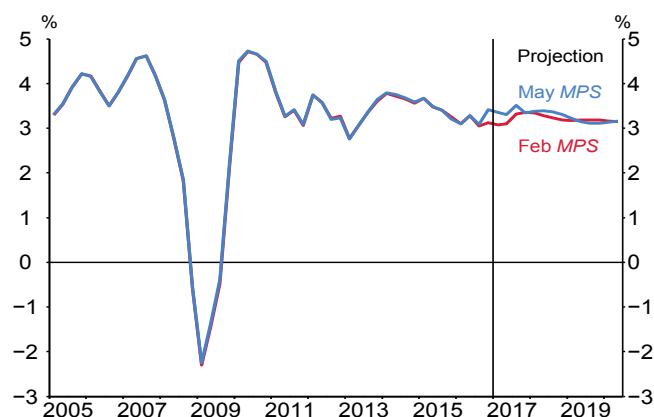


- The economic outlook for New Zealand's main trading partners has improved since the February *Statement*.
- Growth continues to be supported by extraordinarily accommodative monetary policy, although the process of policy normalisation has begun in the United States.
- Trading-partner inflation has increased from its 2015 and 2016 lows, driven largely by a recovery in commodity prices. However, core inflation remains below target in most advanced economies, and is expected to rise only gradually as spare capacity is absorbed.
- While risks around the outlook for New Zealand's trading partners have become more balanced over time, they remain skewed to the downside. Economic uncertainty remains elevated, but has reduced since the February *Statement*.
- Since the February *Statement* the New Zealand dollar TWI has depreciated, and global and domestic government bond yields have declined.

The economic outlook for New Zealand's main trading partners has improved since the February *Statement* (figure 3.1). The trading-partner growth forecast for 2017 has been revised up to 3.4 percent from 3.2 percent previously. The upgraded forecast reflects better-than-expected economic data in the early part of the year, as well as improving forward indicators.

While the outlook for aggregate trading partner growth has improved, economic developments have diverged across trading partners. GDP growth forecasts have been revised higher for 2017 across most of Asia, including China. Growth in China has been stronger than expected in recent quarters, driven by public investment and credit. Growth forecasts have also been revised higher in the United Kingdom and the euro area, as economic indicators have improved and the timing of expected negative effects associated with the United Kingdom's exit from the European Union has been pushed out. Growth in the United States is expected to increase in 2017 relative to 2016, although US growth forecasts have been revised down since the February *Statement* as key activity data have been weaker than expected. Australia's economy is expected to continue to grow at a moderate pace, supported by strong commodity prices relative to early 2016, and higher export volumes.

Figure 3.1
Trading-partner growth
(annual)



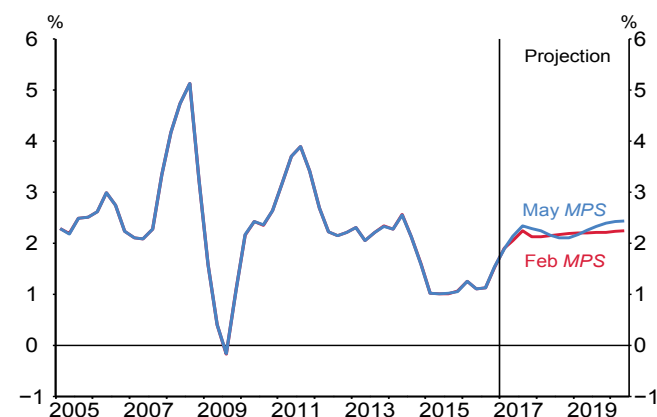
Source: Haver Analytics, Statistics New Zealand, RBNZ estimates.

Note: The weights used to calculate trading-partner growth have changed since the February Statement. Details of the change are provided in table 5.2. To allow comparison in this figure, the updated weights have been used for both the February and May forecasts.

Trading-partner growth continues to be supported by extraordinarily accommodative monetary policy, which is expected to remain in place for some time. Major central banks, such as the European Central Bank and the Bank of Japan, are continuing their asset purchase programmes, providing ongoing support to their respective economies. Meanwhile, the process of monetary policy normalisation has begun in the United States. The Federal Reserve continued to gradually withdraw stimulus in March, raising the federal funds rate by 25 basis points to 0.75–1.0 percent, and expects to raise rates further in 2017. In addition, market participants expect the Federal Reserve to start gradually unwinding its previous asset purchases in late 2017.

Headline inflation across New Zealand’s major trading partners has risen from 2015 and 2016 lows (figure 3.2). The increase in inflation has

Figure 3.2
Trading-partner inflation
(annual)

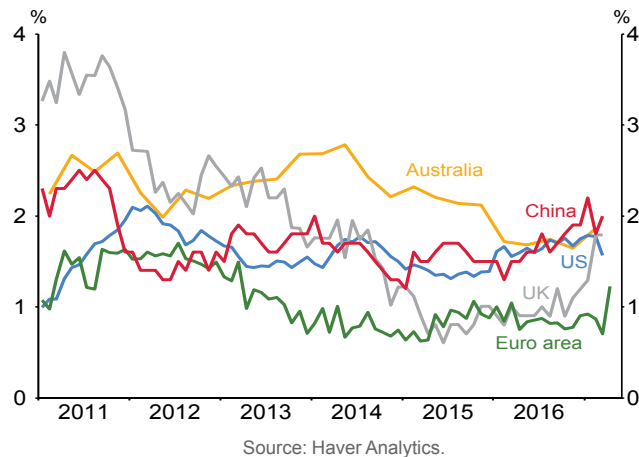


Source: Haver Analytics, RBNZ estimates.

largely been driven by the recovery in oil prices over the past year. While headline inflation has increased, core inflation remains below central banks’ targets in most major economies (figure 3.3). Core inflation is expected to rise only gradually over coming years as spare capacity is absorbed.

The balance of risks to the outlook for growth remains skewed to the downside. Key downside risks include the possibility of a global shift to more inward-looking and protectionist trade policies, and a more pronounced slowdown in China. While risks around the outcomes of some European elections have eased, geopolitical tensions have increased in the Middle East and around North Korea. Consistent with the downside risk assessment, economic uncertainty remains elevated, albeit lower than in February. Box B notes various measures of uncertainty and the implications of elevated uncertainty for the global economy.

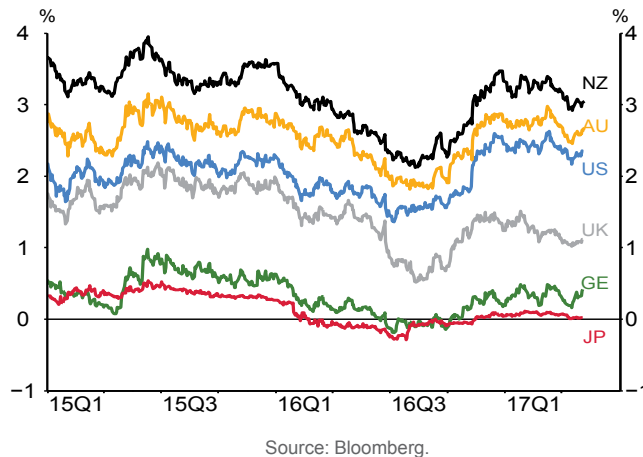
Figure 3.3
Core inflation
(annual)



While risks remain skewed to the downside, some upside risks have become more apparent over 2017. Economic survey data – such as consumer and business confidence – have risen strongly, exceeding economists’ expectations during early 2017 across a number of countries, most notably for the United States. These data suggest a stronger acceleration in growth than is currently forecast. To date, most forecasters have not fully incorporated this view into their central growth forecasts, given sentiment measures do not always translate into actual investment and spending decisions. Nevertheless, the strength in survey data presents upside risk.

Financial markets are an important channel through which the global economy affects New Zealand. Overall, financial market conditions have eased since the February *Statement*, with key global and domestic wholesale interest rates moving lower and the New Zealand dollar exchange rate depreciating.

Figure 3.4
10-year government bond yields



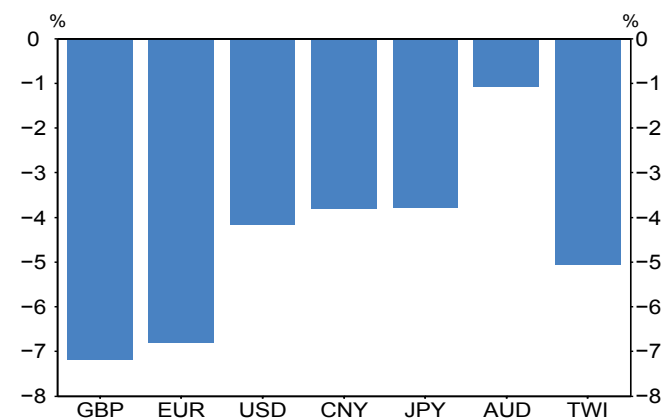
Government bond yields have fallen since the February *Statement*, although they remain well above their 2016 lows (figure 3.4). The recent decline in yields was driven by a number of factors, including increased risk aversion as geopolitical tensions rose, lower confidence in the ability of the United States Administration to push through pro-growth reforms, and an unwinding of market positioning. Declines have flowed through to New Zealand interest rates, with both New Zealand government bond yields and swap rates falling. These lower rates, if maintained, may reduce upward pressure on mortgage rates in the near term. Developments in funding costs and mortgage rates are discussed in chapter 4.

Financial conditions have also eased through a depreciation in the New Zealand dollar exchange rate since the February *Statement*. The New Zealand dollar has depreciated by around 5 percent on a

trade-weighted basis, with the largest falls being recorded against the British pound and euro (figure 3.5). The New Zealand dollar has depreciated despite low financial market volatility. Market participants have become more focused on geopolitical risk and potential trade protectionism. Currencies that are perceived as being sensitive to global trade and commodity prices have led the recent falls, including those of New Zealand, Australia, and Canada. Interest rate differentials between New Zealand and some developed markets have narrowed recently, and this has added to downward pressure on the New Zealand dollar. The implications of the lower New Zealand dollar are discussed in chapter 4.

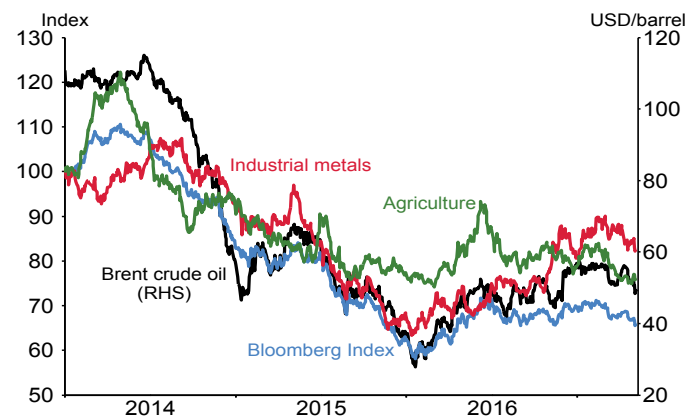
Changes in commodity prices are another important channel of transmission of global developments through to New Zealand, impacting primarily through national income and inflation. Global commodity prices have generally edged lower since the February *Statement*, although this masks some larger moves in individual commodities (figure 3.6). Oil prices have moderated since March, as production in the United States increased by more than anticipated, adding to concerns about excess supply. Industrial metal prices have fallen, led by declines in iron ore prices, despite stronger growth in China. However, the recent falls reflect a partial unwinding of the large run-up in prices at the end of 2016, which were viewed as unsustainable. Developments in dairy prices are discussed in chapter 4.

Figure 3.5
Changes in the New Zealand dollar since the February *Statement*



Source: Bloomberg, RBNZ estimates.

Figure 3.6
Commodity prices



Source: Bloomberg.

Note: The Bloomberg Index and sub-components have been indexed to 100 at 1 January 2014.

Box B

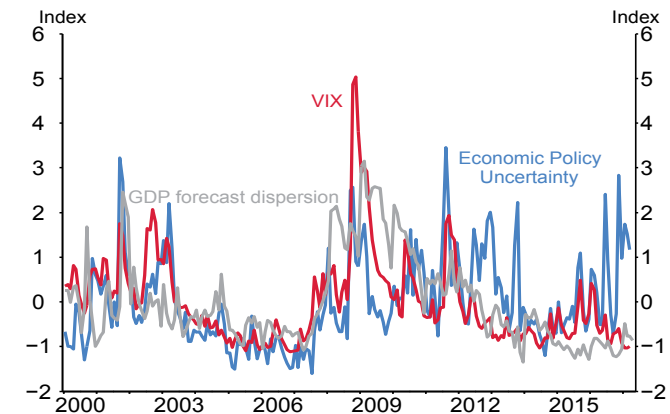
Measuring uncertainty and its macroeconomic impact

Uncertainty is a broad concept and has long been recognised as having an important effect on the economic behaviour of households, firms and policymakers.

The work of Bloom (2009) prompted renewed interest in uncertainty and its effect on the macroeconomy.¹ There is no single preferred measure of uncertainty. Economists typically refer to a broad range of indicators to proxy uncertainty. Some measures use volatility in financial markets as a proxy (e.g. the VIX index). Some use the frequency with which specific words related to economic uncertainty are mentioned in newspapers (e.g. the Economic Policy Uncertainty index developed by Baker, Bloom, and Davis, 2016), and others use forecast disagreement or survey dispersion.² While these measures are constructed in very different ways, they seek to measure the same broad concept and are generally correlated. All measures were heightened during the global financial crisis (GFC) and tend to spike at times of important events.

Empirical research has found that elevated uncertainty is often correlated with negative macroeconomic outcomes. In times of high uncertainty, businesses and households may delay their investment and consumption decisions. In addition, investment may be adversely affected by a higher cost of finance, due to increasing risk premia and credit spreads, and an

Figure B.1
Measures of economic uncertainty in the United States



Source: Bloomberg, PolicyUncertainty.com, RBNZ estimates.

increase in precautionary savings may reduce consumption. This tends to dampen real activity and inflation. Some studies suggest that a sharp increase in uncertainty accounted for a third of the decline in US GDP growth during the GFC.³ The Bank's own research suggests that an increase in uncertainty emanating from overseas can transmit to lower economic activity and inflation in New Zealand.⁴

Since 2015, the level of uncertainty indicated by news-based measures has increased significantly. While they declined modestly in recent months, these measures are currently high relative to history (figure B.1). On the other hand, the VIX and survey dispersion measures of uncertainty have been relatively low.

¹ Bloom, N. (2009), 'The impact of uncertainty shocks', *Econometrica*, 77(3).

² Baker, S., Bloom, N., and Davis, S. (2016), 'Measuring economic policy uncertainty', *The Quarterly Journal of Economics*, 131(4). For a discussion of New Zealand-specific uncertainty proxies, see Rice, A., Vehbi, T., and Wong, B., (forthcoming) 'Uncertainty proxies and their impact on the New Zealand economy', Reserve Bank of New Zealand *Analytical Note*.

³ Bloom, N. (2014), "Fluctuations in Uncertainty", *Journal of Economic Perspectives*, 28(2), 153-76

⁴ See Kamber, G., Karagedikli, O., Ryan, M., and Vehbi, T., (2016) 'International spill-overs of uncertainty shock: Evidence from a FAVAR', *CAMA Working Paper 61/2016*.

Chapter 4

Current domestic conditions



- Annual CPI inflation increased to 2.2 percent in the March 2017 quarter, largely driven by a sharp but temporary increase in tradables inflation. Non-tradables inflation remains below average.
- The New Zealand dollar TWI has depreciated since the February *Statement*. Mortgage interest rates remain low relative to history.
- Housing activity has slowed since mid-2016, despite the fundamental drivers of housing demand remaining strong, namely population growth and low mortgage rates.
- GDP growth was weaker than expected in the December 2016 quarter, in part due to temporary factors. Above-average GDP growth is expected in the near term.

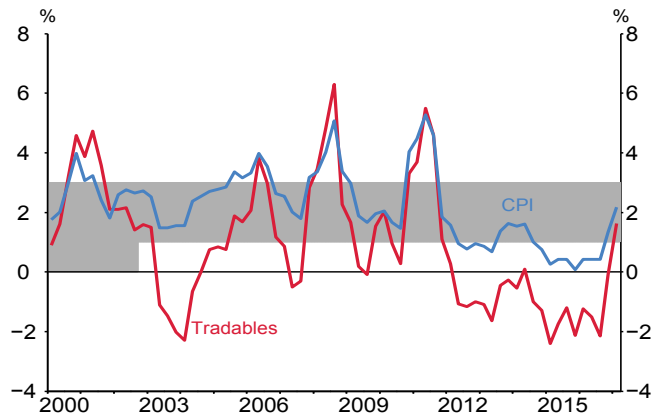
CPI inflation

Annual CPI inflation lifted to 2.2 percent in the March 2017 quarter, from 0.4 percent a year earlier (figure 4.1). The increase in CPI inflation over the past year has been driven largely by a sharp increase in tradables inflation. This partly reflects the recovery in global oil prices from historically low levels in 2016. Fuel prices contributed 0.6 percentage points to annual CPI inflation in the March 2017 quarter. Food prices were also strong in the March quarter, contributing 0.3 percentage points to annual CPI inflation.

The recent increase in tradables inflation from fuel and food is expected to be temporary (see box D in chapter 5). Tradables inflation excluding fuel and food has gradually trended higher in recent years, consistent with an increase in non-oil import prices.

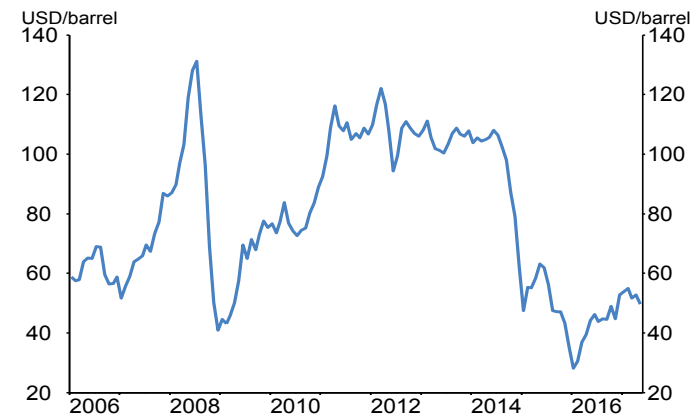
Annual non-tradables inflation remains subdued at 2.5 percent in the March 2017 quarter, relative to its post-2002 average of 3.3 percent. This outturn for non-tradables inflation was broadly in line with February *Statement* projections.

Figure 4.1
CPI and tradables inflation
(annual)



Source: Statistics New Zealand.

Figure 4.2
Dubai crude oil price



Source: Thomson Reuters.

External conditions

The global economic outlook has improved modestly in 2017, but the balance of risks remains skewed to the downside. The Dubai oil price has averaged USD 53 per barrel to date in 2017 (figure 4.2), compared to the 2016 average of USD 42 per barrel.

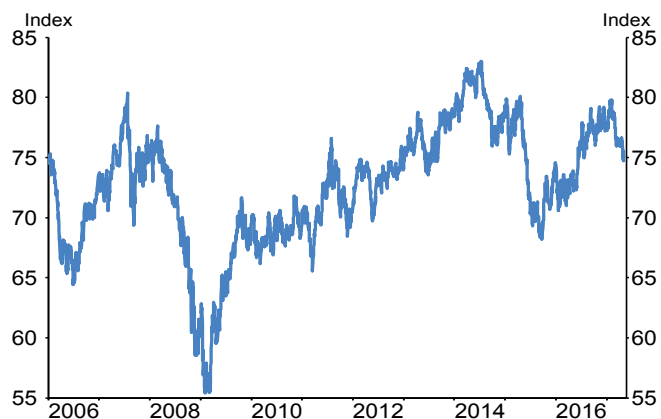
Domestic financial conditions

As described in chapter 3, the New Zealand dollar TWI has depreciated since the February *Statement* (figure 4.3). At the time of the February *Statement*, the TWI neared 79, but has since fallen to around 75. The TWI remains high by historical standards. Nevertheless, the recent depreciation implies higher inflationary pressure going forward than assumed in the February *Statement*.

The decline in global bond yields in recent months has flowed through to wholesale interest rates in New Zealand. While wholesale funding conditions have eased since the February *Statement*, domestic deposit rates continue to put upward pressure on banks' marginal funding costs (figure 4.4).

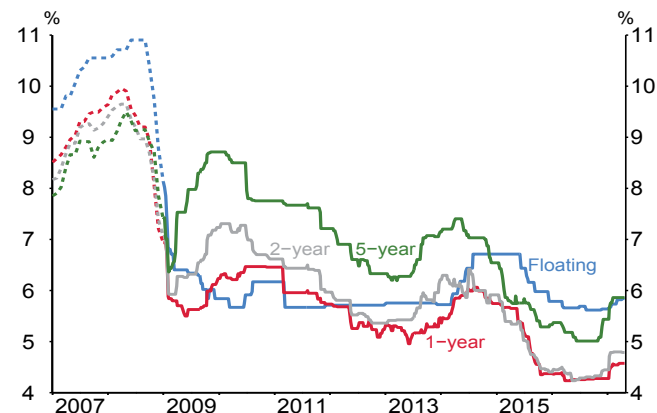
Mortgage rates have stabilised since the February *Statement*, with reduced upward pressure from lower wholesale interest rates (figure 4.5). Mortgage rates remain at low levels relative to history, but recent changes to LVR policy have tightened credit availability for some households. Lending conditions for residential property development have tightened.

Figure 4.3
New Zealand dollar TWI



Source: RBNZ.

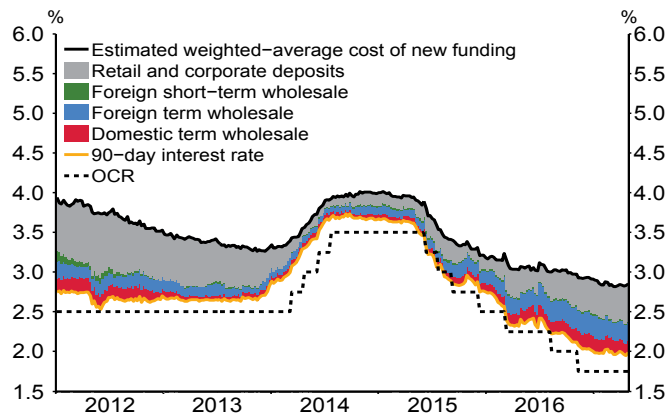
Figure 4.5
Mortgage interest rates



Source: interest.co.nz, RBNZ estimates, RBNZ *Standard Statistical Return* (SSR).

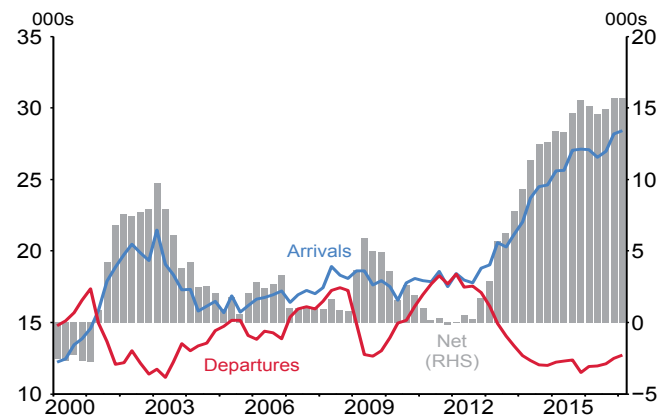
Note: For each term the rate shown is the average of the latest rate on offer from ANZ, ASB, BNZ, and Westpac. Data prior to 2009 are from the monthly RBNZ SSR.

Figure 4.4
Banks' marginal funding costs



Source: Bloomberg, RBNZ estimates.

Figure 4.6
Migration
(quarterly, s.a.)



Source: Statistics New Zealand, RBNZ estimates.

Note: The data shown are for permanent and long-term working-age migration.

Migration and housing market

Net permanent and long-term working-age immigration has remained at record-high levels (figure 4.6). Work arrivals have continued to increase, while student arrivals have stabilised in recent months after declining through 2016. Departures remain at historically low levels and have increased only gradually over the past year, reflecting favourable labour market conditions in New Zealand relative to overseas. In the year to March 2017, a net 61,000 working-age people migrated to New Zealand, and a net 204,000 have migrated since 2012.

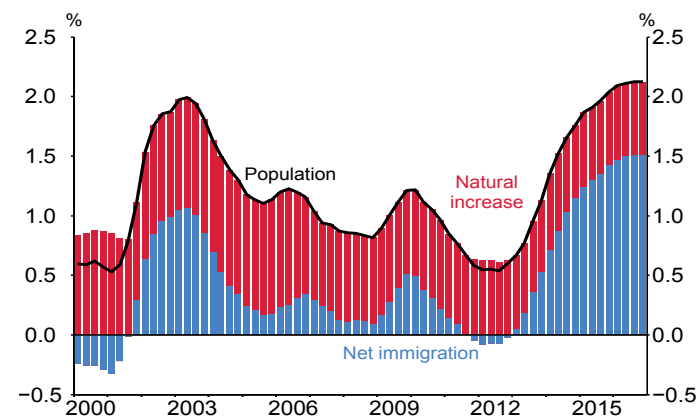
Migration has been a key driver of strong population growth since 2012 (figure 4.7). Net immigration contributed around 1.5 percentage points to the 2.1 percent annual population growth over the past year.

Despite ongoing strength in the fundamental drivers of housing demand, namely population growth and low mortgage interest rates, housing activity has slowed since mid-2016. This likely reflects a range of factors, including changes to LVR policy, and increases in mortgage rates in 2016, and increasing pressure on affordability.

House price inflation has slowed since mid-2016 (figure 4.8). Monthly house price inflation has averaged 0.3 percent so far in 2017, significantly below the 2016 average of 1.1 percent per month. Slowing house price inflation has been broad-based across regions, but most pronounced in Auckland. Annual house price inflation in Auckland has moderated from 16 percent in April 2016 to 8.3 percent in March 2017.

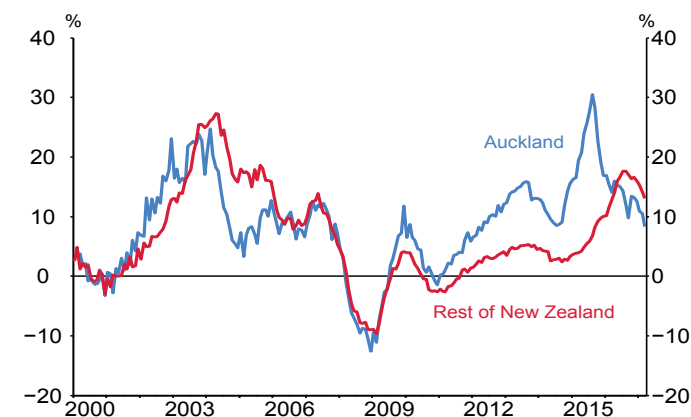
Nationwide house sales fell from a peak of 8,700 in April 2016 to 6,400 in January 2017. The decline was most pronounced in Auckland and surrounding regions. Sales increased modestly in February and March 2017, but remain at low levels.

Figure 4.7
Population growth
(annual)



Source: Statistics New Zealand.

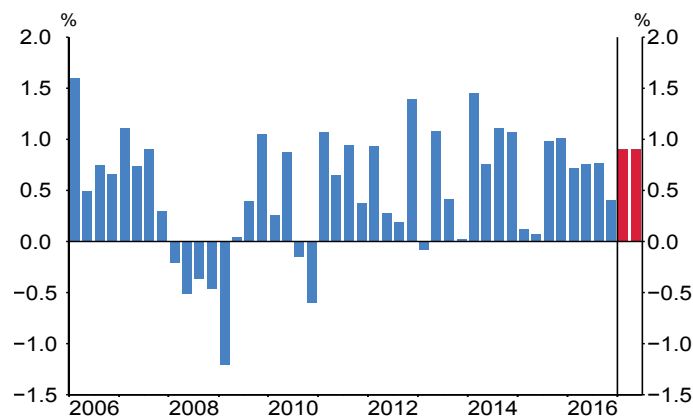
Figure 4.8
House price inflation
(annual)



Source: REINZ.

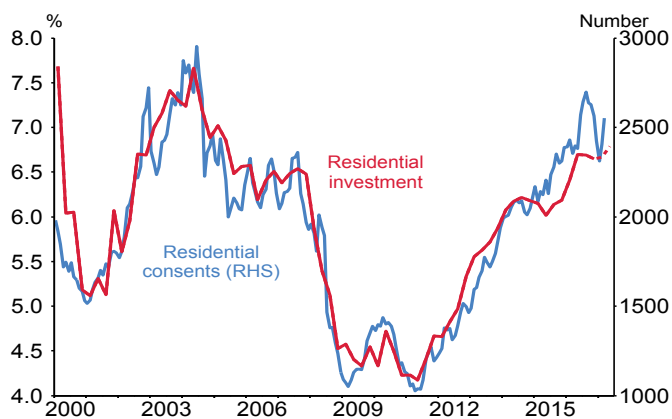
Note: House price inflation refers to the REINZ Sale Price to Appraisal Ratio (SPAR) indices.

Figure 4.9
GDP growth
(quarterly, s.a.)



Source: Statistics New Zealand, RBNZ estimates.

Figure 4.10
Residential investment and building consents
(investment as a share of potential output)



Source: Statistics New Zealand, RBNZ estimates.

Note: Consents are shown as a 3-month moving average.

Domestic growth

GDP growth was weaker than expected in the December 2016 quarter. Production GDP increased by 0.4 percent in the quarter (figure 4.9). Quarterly growth in September 2016 was also revised down from 1.1 percent to 0.8 percent. Annual growth for the year to the December 2016 quarter slowed to 2.7 percent, against expectations of 3.5 percent in the February *Statement*.

Some of the weakness in production GDP growth is expected to be temporary. Agricultural output fell by more than expected, reflecting a large decline in dairy production partly due to unfavourable weather conditions. Manufacturing output was weak following two quarters of relatively strong growth. Recent dairy production data suggest a rebound in agricultural output in the March 2017 quarter and survey data also point to stronger manufacturing output.

Construction, particularly in the residential sector, continues to be a key source of growth. However, growth in construction activity moderated to 10.9 percent in the year to the December 2016 quarter, from 12.2 percent in the previous quarter. As suggested by the March *Quarterly Survey of Business Opinion* (QSBO), capacity constraints are tightening. Firms are reporting labour shortages and, more recently, some increased difficulty in obtaining finance. This appears to be related to the tightening in bank lending standards for residential property development and pressures created by rising construction costs.

Nationwide dwelling consent issuance has been volatile over the past year, and fell sharply through the end of 2016 (figure 4.10). This fall likely reflects a move back into line with the underlying trend in consent issuance, as well as the impact of the North Canterbury earthquakes of November 2016, the slowdown in Canterbury as the rebuild continues to

taper, and uncertainty surrounding the Auckland Unitary Plan. Dwelling consent issuance bounced back over the March quarter. Growth in residential investment was weaker than expected in the second half of 2016. Strong population growth, a shortage of housing, and low interest rates are supporting residential investment.

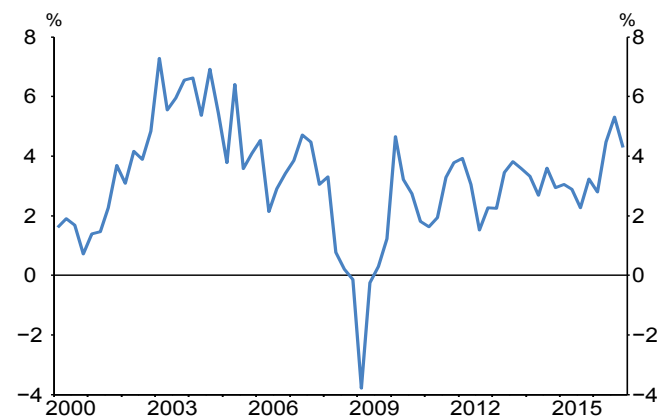
Non-residential investment grew by 13.8 percent in the year to December 2016. Non-residential consent issuance has increased over the past year, suggesting strong growth in non-residential investment will likely continue in the near term. Rebuild activity related to the North Canterbury earthquakes and a large number of planned projects in Auckland are expected to support infrastructure investment over the coming years.

Consumption remained strong in the December 2016 quarter, growing by 4.3 percent in annual terms (figure 4.11). This is a moderation from 5.3 percent in the September 2016 quarter, but is well above the average rate since 2000. Strong consumption growth is consistent with current low interest rates, high net immigration and house prices, and recent increases in export prices and consumer confidence.

Movements in the prices of New Zealand's key commodity exports have been mixed in recent months. Whole milk powder (WMP) prices have fallen from USD 3,590 per tonne in December 2016 to USD 3,233 per tonne at the latest auction in May 2017 (figure 4.12). Dairy export prices rose 29 percent in world terms between December 2015 and March 2017. Over the same period, meat prices increased 12 percent in world terms.

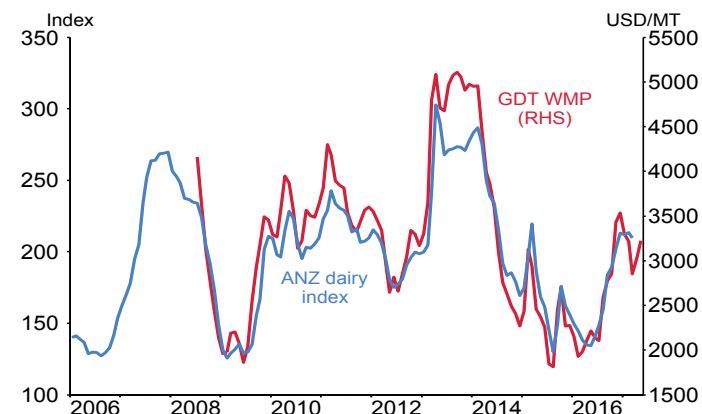
Business investment growth remains below average despite relatively high business confidence (figure 4.13). Confidence has eased since late 2016, but firms' reported profitability in the *QSBO* has continued to improve. Corporate insolvencies are at a record low level. Overall this

Figure 4.11
Consumption growth
(annual)



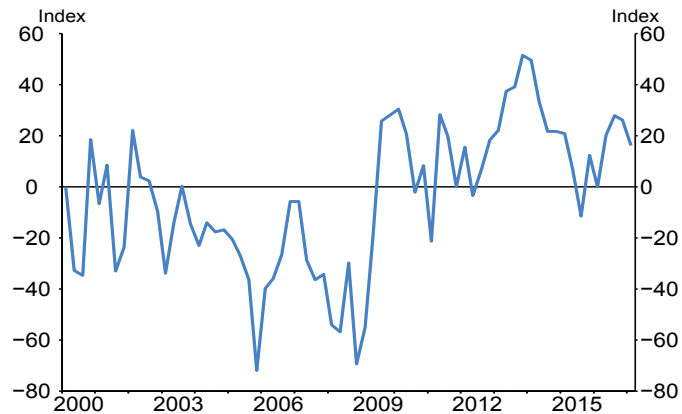
Source: Statistics New Zealand.

Figure 4.12
Dairy prices



Source: ANZ Bank, Global Dairy Trade (GDT).

Figure 4.13
Business confidence



Source: New Zealand Institute of Economic Research.

Figure 4.14
Short-term visitor arrivals and exports of travel services
(quarterly, s.a.)



Source: Statistics New Zealand, RBNZ estimates.

suggests a favourable environment for business investment. Previous weak export prices have contributed to current subdued business investment growth. The recovery in export prices since 2016, along with rising capacity pressure, is expected to support business investment. This pick-up in investment is consistent with information received from the recent business visits (box C).

Short-term visitor arrivals have increased substantially since 2012, providing a further boost to demand in the New Zealand economy (figure 4.14). In the year to March 2017, 3.5 million visitors arrived in New Zealand, 11 percent more than the previous year. However, exports of travel services remained flat as spending per visitor declined over 2016.

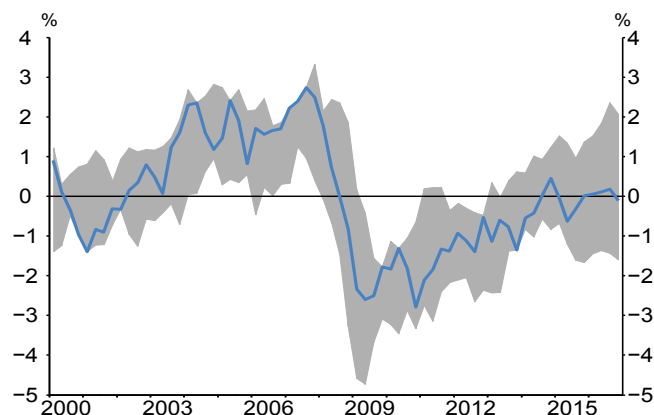
Capacity pressure

The output gap is currently estimated to be around zero (figure 4.15). The range of the Bank's suite of indicators has remained wide since the start of 2015, reflecting uncertainty about the current degree of capacity pressure.

Conditions in the labour market have continued to tighten. Employment has been strong, growing at 5.7 percent in the year to March 2017. Labour force growth was 5.4 percent over the same period. Strong labour force growth reflects both high net immigration and increased labour market participation. The unemployment rate fell from 5.2 percent to 4.9 percent in the March 2017 quarter (figure 4.16). The Bank's Labour Utilisation Composite Index suggests conditions in the labour market are tightening (figure 4.17).

Despite an apparent tightening in the labour market, nominal wage growth has remained subdued, in part reflecting the effects of low past

Figure 4.15
Output gap indicator suite
(share of potential output)



Source: RBNZ estimates.

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

Figure 4.16
Unemployment rate



Source: Statistics New Zealand.

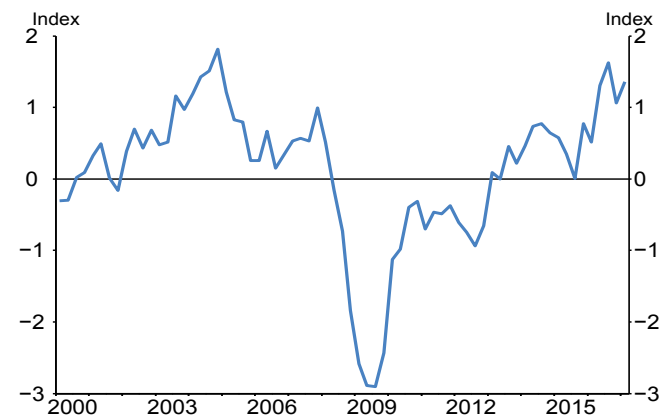
inflation. The private labour cost index increased by 1.5 percent in the year to March 2017.

Domestic inflationary pressure

Non-tradables inflation has increased gradually since mid-2015, in large part due to rising inflationary pressure in the construction sector (figure 4.18). This increase in non-tradables inflation partly reflected the diminished dampening effect from reductions in ACC levies since July 2015. Annual non-tradables inflation also was 2.5 percent in the March 2017 quarter, compared to 1.6 percent a year earlier.

Housing-related items continued to underpin the lift in non-tradables inflation. Construction costs (excluding land) increased by 6.7 percent in the year to March 2017, led by Auckland where costs have increased by

Figure 4.17
Labour utilisation composite index



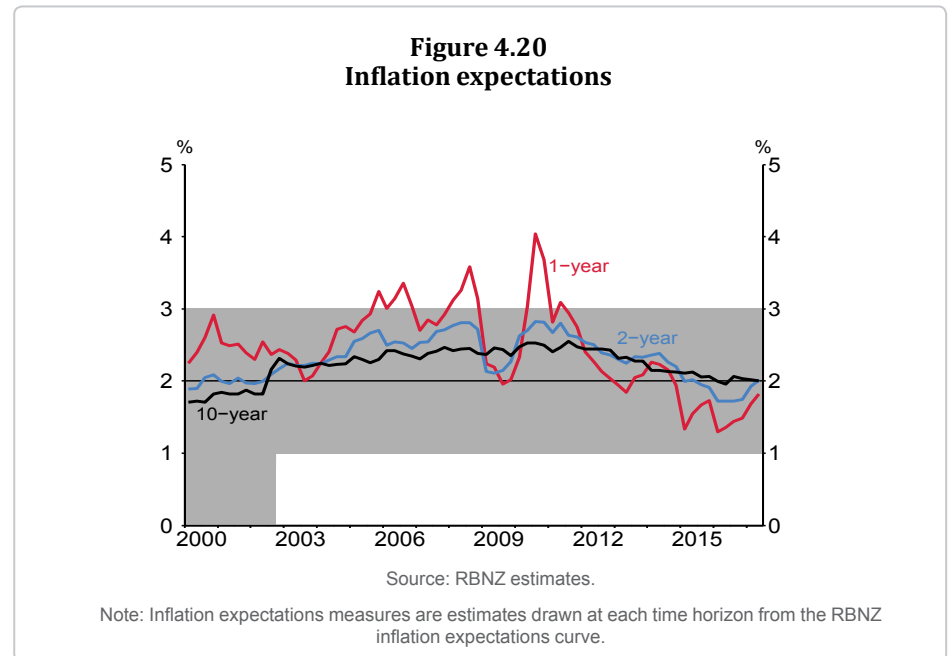
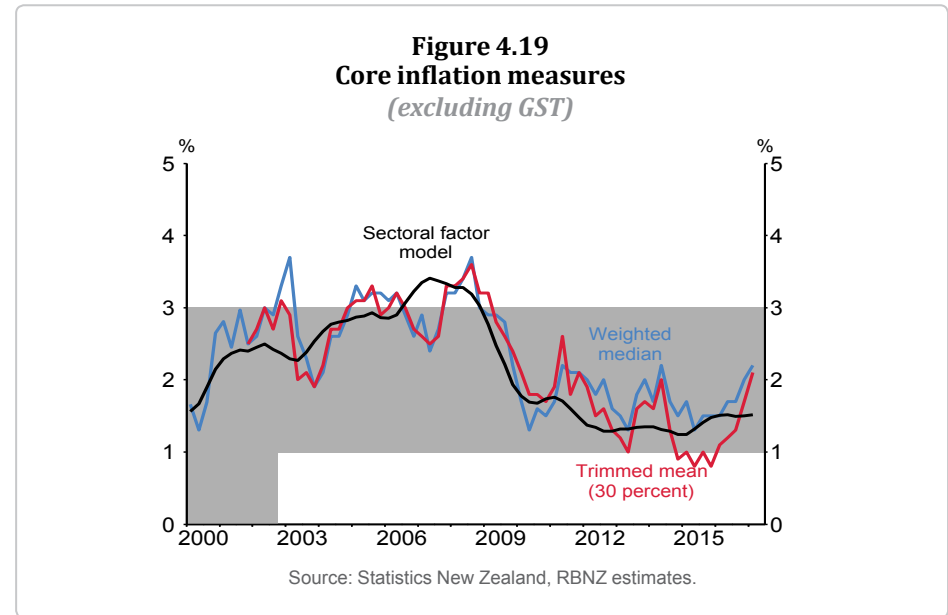
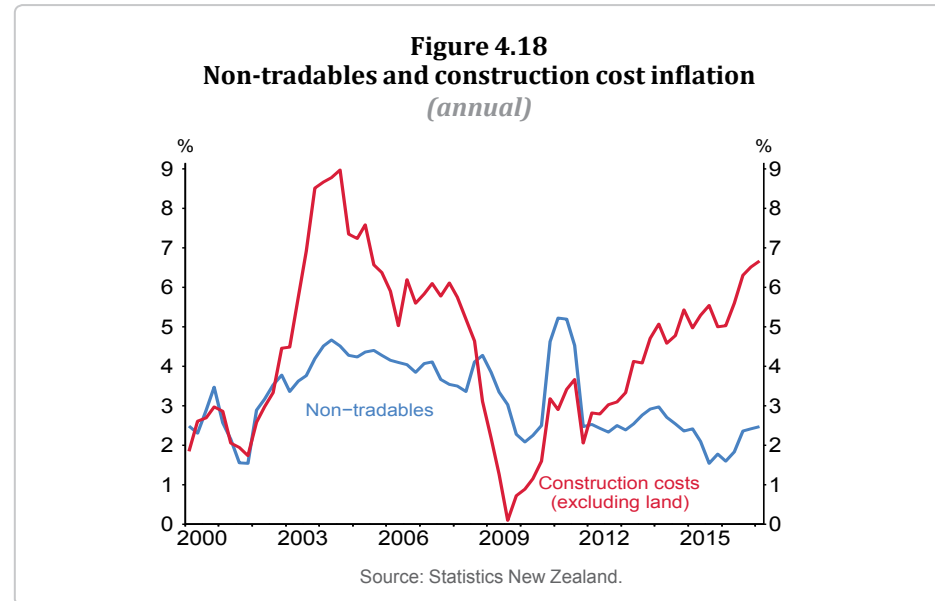
Source: RBNZ estimates.

Note: A positive value indicates a tightening in labour market conditions.

8.0 percent. However, the quarterly rate of construction cost inflation has moderated over late 2016 and early 2017, consistent with slower growth in residential investment.

To abstract from specific price movements and observe the underlying trend in inflation, the Bank monitors a range of core inflation measures (figure 4.19). These measures look through temporary volatility, permitting a clearer assessment of inflationary pressure in the economy. Measures of core inflation have been in the target range since March 2016 and currently lie between 1.5 percent and 2.2 percent.

Long-term inflation expectations remain well anchored at 2 percent (figure 4.20). Short-term inflation expectations have increased over the past year, consistent with a pick-up in headline inflation, and are close to 2 percent.



Box C

Summary of recent business visits

The Bank regularly meets with a range of organisations to enhance our industry knowledge and understanding of current economic conditions. This helps inform our economic projections. In our most recent round of business visits, we spoke with 35 organisations across Auckland, Wellington, Christchurch, and Dunedin. These organisations span a range of industries and are generally positive about current conditions. Notwithstanding a slight air of caution in some industries, the outlook is also viewed positively and many contacts have large investment projects planned over the next few years.

In this round we focused our discussions on labour market dynamics to inform our understanding of wage-setting behaviour and reasons for the subdued wage growth seen in recent years. Contacts across sectors noted that, while there is strong demand for labour, it is difficult to find workers with the right skills. However, wage pressure remains surprisingly limited. Contacts suggested this may in part reflect the negative impact of the GFC on employees' expectations of wage growth and employers' willingness to offer substantial wage increases.

In lieu of strong wage growth, offers of other workplace benefits are increasingly being used to attract and retain staff. Flexible work options are particularly common, especially in Auckland. Contacts expect that employers seek to address labour shortages by increasing their hiring of lower-skilled workers, and investing more in training. Employers are also expected to increasingly look offshore for labour. Greater pressure on wages is expected over coming quarters.

Table 4.1
Measures of inflation, inflation expectations, and asset prices

	2015		2016				2017	
	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun
Inflation (annual rates)								
CPI	0.4	0.1	0.4	0.4	0.4	1.3	2.2	
CPI non-tradables	1.5	1.8	1.6	1.8	2.4	2.4	2.5	
CPI tradables	-1.2	-2.1	-1.2	-1.5	-2.1	-0.1	1.6	
Sectoral factor model estimate of core inflation	1.4	1.5	1.5	1.5	1.5	1.5	1.5	
CPI trimmed mean (30 percent)	1.0	0.8	1.1	1.2	1.3	1.7	2.1	
CPI weighted median	1.5	1.5	1.5	1.7	1.7	2.0	2.2	
GDP deflator (expenditure)	0.7	0.3	0.9	0.0	1.2	3.9		
Inflation expectations								
ANZ Business Outlook - inflation one year ahead (quarterly average to date)	1.7	1.7	1.4	1.4	1.5	1.5	1.8	1.8
RBNZ Survey of Expectations - inflation two years ahead	1.9	1.9	1.6	1.6	1.7	1.7	1.9	2.2
AON Hewitt Economists' Survey - inflation four years ahead	2.2	2.1	2.0	1.9	2.0	2.0	2.0	2.0
AON Hewitt Economists' Survey - inflation seven years ahead	2.2	2.2	2.1	2.0	2.1	2.0	2.0	2.0
Long-run inflation expectations ¹	2.1	2.1	2.0	2.0	2.1	2.0	2.0	2.0
Asset prices (annual percent changes)								
Quarterly house price index (CoreLogic NZ)	14.8	11.2	11.7	13.9	12.6	13.9		
REINZ Farm Price Index (quarterly average to date)	-0.4	-2.5	4.2	-2.6	4.3	4.9	4.5	
NZX 50 (quarterly average to date)	11.4	10.8	9.1	18.4	26.5	15.8	12.8	5.7

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.

Chapter 5

The macroeconomic outlook



- Annual CPI inflation is projected to be volatile over the next year, then settle near the 2 percent target midpoint over the medium term.
- Non-tradables inflation is expected to rise over the next three years as the output gap increases and the dampening effect of past low inflation dissipates.
- Low interest rates and strong population growth are expected to support an increase in capacity pressure over the medium term.
- Monetary policy is expected to remain highly accommodative throughout the projection. Developments since February are broadly offsetting for medium-term inflationary pressure.

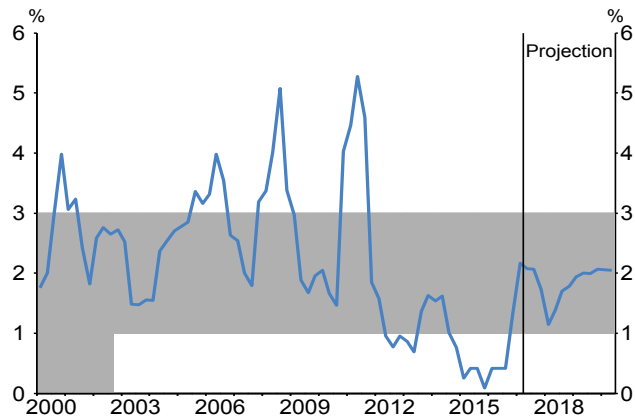
Annual CPI inflation is expected to exhibit some volatility over the next year (box D), then settle near 2 percent in the medium term (figure 5.1).

Tradables inflation is projected to increase once the expected near-term volatility has passed, although it remains below average by the end of the projection (figure D.1). Spare capacity in New Zealand's trading partners is expected to be absorbed only gradually, leading to weak imported inflation. Import prices are expected to rise gradually from their current low level, and the New Zealand dollar exchange rate is assumed to depreciate further.

Non-tradables inflation is expected to rise over the next three years as the output gap increases and the dampening effect of past inflation dissipates (figure 5.2). Activity will increase, driven by residential investment and consumption. The projected strengthening in growth and inflation is supported by accommodative monetary policy.

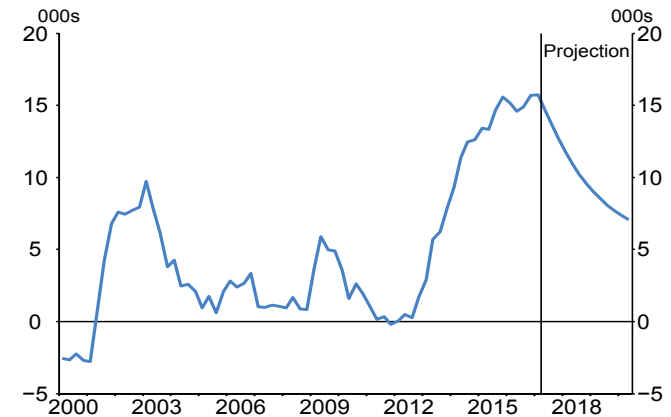
A key driver of activity is immigration, which is anticipated to continue adding to the population over the next three years (figure 5.3). The recent compositional shift away from student visas towards work visas, if sustained, is likely to create some additional demand pressure.

Figure 5.1
CPI inflation
(annual)



Source: Statistics New Zealand, RBNZ estimates.

Figure 5.3
Net immigration
(quarterly)



Source: Statistics New Zealand, RBNZ estimates.

Note: The data shown are for permanent and long-term working-age migration.

Figure 5.2
Non-tradables inflation
(annual)

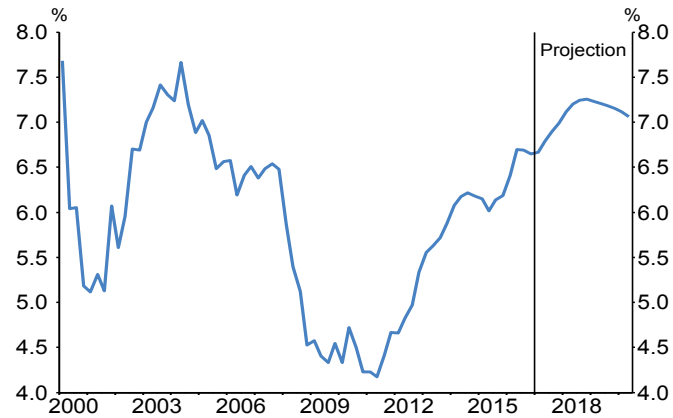


Source: Statistics New Zealand, RBNZ estimates.

Population growth and low interest rates are expected to drive increases in residential investment and consumption over the next three years. Recent population growth has not yet been matched by house building; as a result, residential investment is projected to increase further to meet demand for housing (figure 5.4).

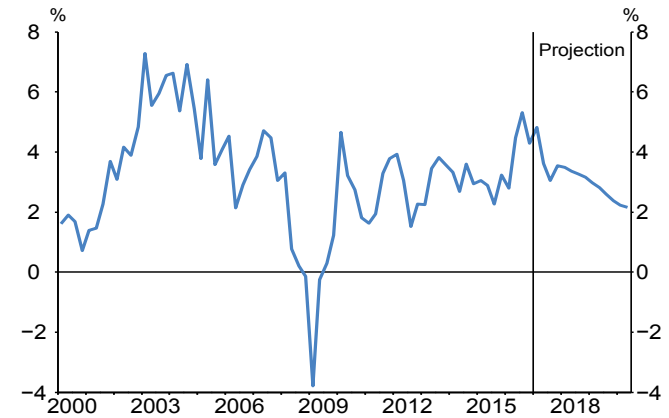
Increased housing construction will ease upward pressure on house prices by lifting supply. The gradual decline in net immigration over the medium term will slow the growth in demand for housing. In addition, housing demand is expected to continue to be dampened by developments over the past year, including rises in mortgage rates, the tighter LVR policy, and emerging affordability constraints. These factors result in moderating house price inflation over the projection (figure 5.5).

Figure 5.4
Residential investment
(share of potential output)



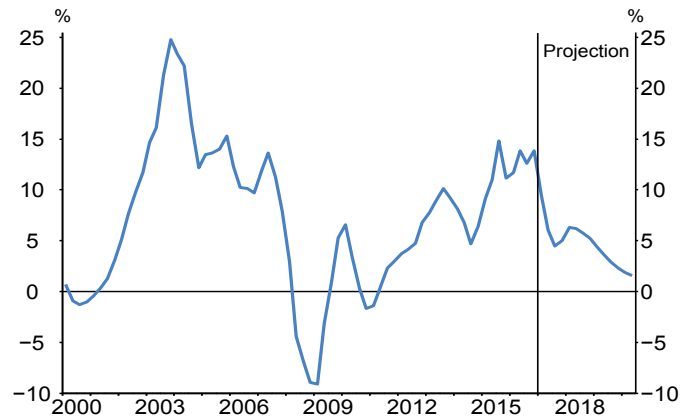
Source: Statistics New Zealand, RBNZ estimates.

Figure 5.6
Consumption growth
(annual)



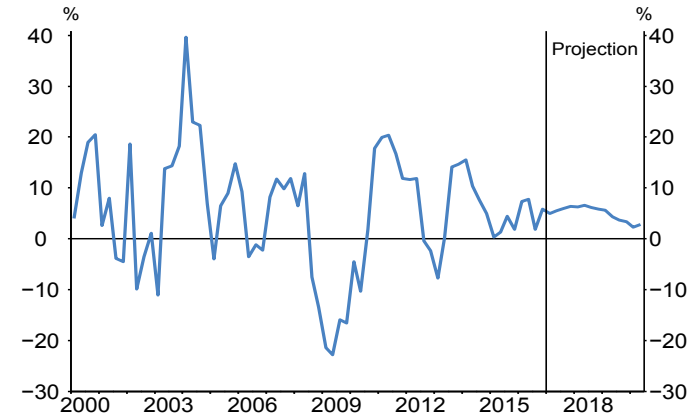
Source: Statistics New Zealand, RBNZ estimates.

Figure 5.5
House price inflation
(annual)



Source: CoreLogic NZ, RBNZ estimates.

Figure 5.7
Business investment growth
(annual)



Source: Statistics New Zealand, RBNZ estimates.

The projected declines in house price inflation and population growth are expected to moderate consumption growth from its current high level (figure 5.6). It is assumed that the strength in consumption over the past year will persist to some degree, moderating more slowly than house price inflation.

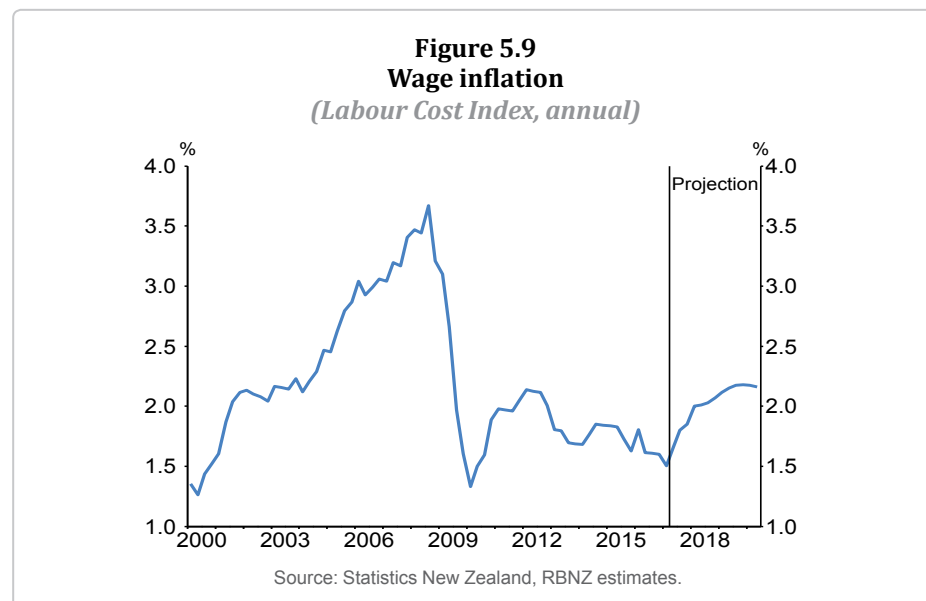
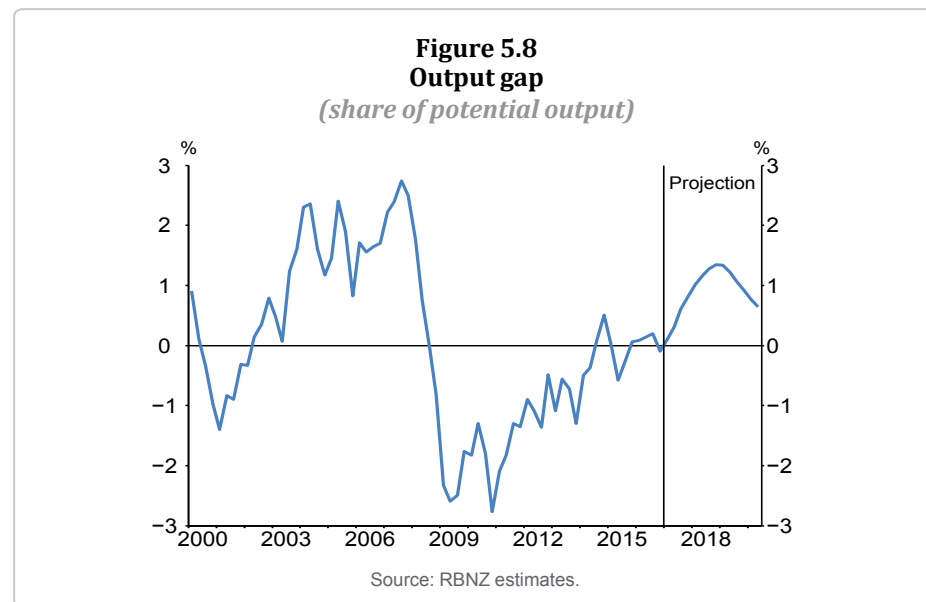
Increasing capacity pressure is expected to drive a lift in business investment as firms respond to increasing demand (figure 5.7). The output gap is projected to peak around the end of 2018 (figure 5.8). Capacity pressure is expected to emerge over the next two years as the economy grows above trend in response to population growth and accommodative monetary policy.

The increase in capacity pressure will be apparent in labour shortages becoming more acute as the demand for labour increases. The unemployment rate is expected to trend lower over the next two years. At the same time, wage-setting behaviour is assumed to respond to increasing headline inflation, although this response will be gradual given the long period of low inflation. As a result, nominal wage inflation is expected to lift from its current low level (figure 5.9).

Scenario analysis

The projections discussed in this chapter reflect the Bank's baseline view of how economic conditions might evolve, and how these will affect inflationary pressure in New Zealand. Given this view, the projected path for the OCR is consistent with future average inflation settling near the target midpoint.

As discussed in chapter 2, the projections and appropriate policy response are conditional on a range of judgements regarding the future path of key variables. These judgements will be reviewed as events



unfold, with the projections and associated monetary policy settings being adjusted accordingly.

The following illustrates two alternative scenarios that would have a substantial impact on the projection if they materialise. The two scenarios considered are that:

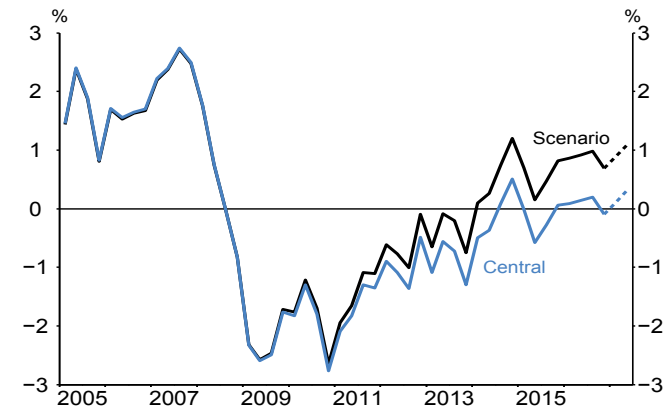
- the level of capacity pressure is higher than currently assessed; and
- the rate of growth in housing construction is weaker than assumed in the central projection.

Higher capacity pressure

When estimating the future path of inflation, it is important to first understand the current state of the economy. Just as there is uncertainty surrounding forecasts of the future, there is also uncertainty about the assessment of current conditions. This assessment is complicated by both the availability of data pertaining to the current period and the possibility of future revisions to the data. In addition, capacity pressure is difficult to assess, adding a further layer of uncertainty.

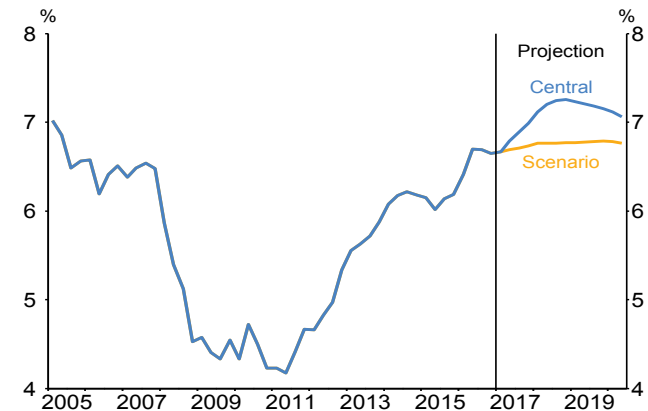
In light of recent data revisions, the estimate of current capacity pressure is now lower than previously thought. However, some measures suggest capacity pressure could be stronger than the current assessment. Underestimation of the degree of current capacity pressure could arise from revisions to data, from undetected changes in price-setting behaviour, or from difficulty in measuring the productive capacity of the economy. As a result there is some upside risk to the current assessment of capacity pressure. This scenario assesses the implications for

Figure 5.10
Output gap
(share of potential output)



Source: RBNZ estimates.

Figure 5.11
Residential investment
(share of potential output)



Source: Statistics New Zealand, RBNZ estimates.

inflationary pressure if the central projection understates the true level of capacity pressure (figure 5.10).

Higher-than-estimated capacity pressure over 2016, with the same growth and demand outlook, would place additional upward pressure on non-tradables inflation relative to the central projection. Without a policy response appropriate to the true level of capacity pressure, this scenario would result in CPI inflation increasing more rapidly than in the central projection, returning to 2 percent by the end of 2018 and eventually settling around 2.3 percent.

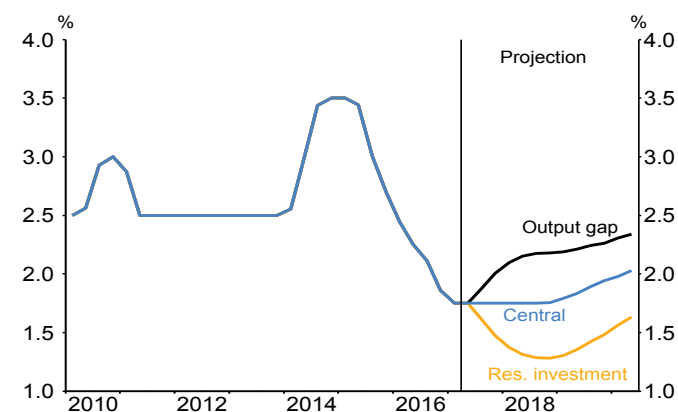
To offset the additional inflationary pressure in the scenario, the OCR would need to rise, reaching 2 percent by the end of 2017 and 2.25 percent by the end of the projection (figure 5.12).

Lower residential investment

The central projection assumes that residential investment will grow strongly in response to high demand for housing. However, capacity pressure in the construction sector is rising, and lending conditions have tightened for the residential property development sector. This scenario assesses the effect on the economy if the projected growth in residential investment does not materialise due to tight lending standards (figure 5.11).

The lower level of construction activity would have two effects: it would reduce growth in the supply of housing, and it would lead to capacity pressure developing more slowly than in the central projection. While lower housing supply would increase house price inflation, the net response in the real economy would be a lower level of inflationary pressure as a result of less capacity pressure. Without an appropriate

Figure 5.12
Official Cash Rate



Source: RBNZ estimates.

policy response, CPI inflation would lift only gradually and remain below 2 percent throughout the projection.

To offset weaker inflationary pressure in the scenario, the OCR would need to fall, reaching 1.3 percent by the end of 2018 and remaining below the central projection over the forecast horizon (figure 5.12).

Policy implications

In both of these scenarios, the Bank's policy response would differ from that shown in the central projection. Depending on economic developments, more or less monetary stimulus may be required for inflation to settle near the midpoint of the target range in the medium term.

It is important to note that the scenarios considered in the chapter represent only small deviations from the central projection relative to the historical experience. In reality, there are a range of uncertainties relating to the outlook, and combinations of unforeseen developments can influence the economy simultaneously. Although some of these developments might be offsetting, deviations from the central projections may be larger than those shown here, leading to a wide range of associated monetary policy responses.

Box D

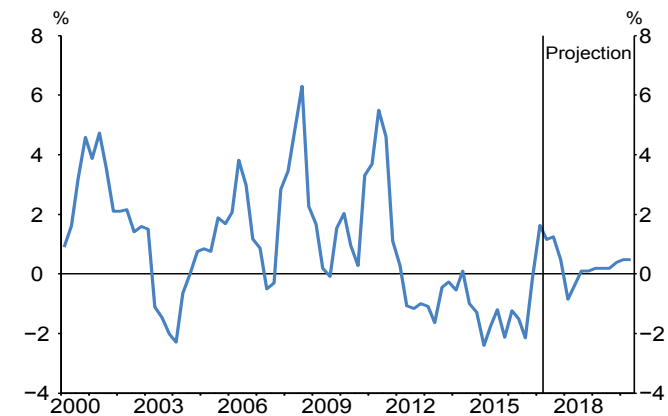
Volatility in CPI inflation

CPI inflation is expected to be volatile over the next year. While currently at 2.2 percent, annual headline inflation is expected to decline to 1.1 percent in the first quarter of 2018, then return to near 2 percent by the start of 2019. This volatility is largely attributed to movements in tradables inflation (figure D.1). Such short-lived volatility is expected to have only a limited effect on the projection for underlying inflationary pressure.

Fuel and food prices are the main contributors to the recent lift in tradables inflation. Global oil prices have increased from historically low levels since the start of 2016. As a result, petrol prices have risen 13 percent in the year to March 2017. Furthermore, food prices increased strongly at the start of 2017, partly reflecting weather-related supply disruptions.

During 2017 the level of food prices is expected to reverse its recent rise. Fuel prices have declined recently, consistent with global oil price developments, and are expected to remain relatively stable over the rest of 2017. As a result the tradables price level is expected to be lower in the first quarter of 2018 than a year earlier, implying negative annual tradables inflation. The decline in the New Zealand dollar exchange rate over the projection is expected to generate a lift in tradables inflation. Tradables inflation is projected to increase over the medium term but remain below its historical average rate of 1 percent by the end of the projection.

Figure D.1
Tradables inflation
(annual)



Source: Statistics New Zealand, RBNZ estimates.

Table 5.1
Composition of real GDP growth
(annual average percent change, seasonally adjusted, unless specified otherwise)

March year	Actuals							Projections			
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Final consumption expenditure											
Private	1.5	2.3	3.2	2.3	3.5	3.1	2.8	4.7	3.4	3.2	2.5
Public authority	-0.5	1.9	1.7	-0.2	2.0	3.1	2.6	2.3	1.8	0.9	1.1
Total	1.0	2.2	2.9	1.7	3.2	3.1	2.8	4.1	3.1	2.7	2.2
Gross fixed capital formation											
Residential	-9.0	1.7	3.0	17.7	15.1	8.8	2.8	10.9	7.0	7.0	1.7
Other	-10.5	4.3	6.8	1.6	8.1	6.1	2.5	4.3	6.6	4.0	2.9
Total	-10.2	3.7	6.0	5.0	9.8	6.7	2.6	6.0	6.7	4.8	2.6
Final domestic expenditure	-1.5	2.5	3.5	2.4	4.6	3.9	2.7	4.6	3.9	3.2	2.3
Stockbuilding ¹	-0.7	0.7	0.3	-0.3	-0.2	0.5	-0.3	0.1	0.0	-0.1	0.0
Gross national expenditure	-1.9	3.3	4.0	2.0	4.3	4.1	2.3	5.2	3.9	3.1	2.3
Exports of goods and services	4.1	2.8	2.2	3.1	-0.1	4.2	5.7	1.4	2.6	3.5	3.0
Imports of goods and services	-9.2	11.4	6.7	1.3	8.1	7.5	2.1	6.0	5.3	3.0	2.6
Expenditure on GDP	1.9	1.0	2.7	2.5	1.9	3.1	3.4	3.8	3.1	3.3	2.4
GDP (production)	-0.3	1.5	2.2	2.2	2.5	3.4	2.4	3.1	3.4	3.4	2.4
GDP (production, March qtr to March qtr)	1.8	1.2	2.9	1.8	3.0	3.1	2.8	2.9	3.7	3.1	2.1

¹ Percentage point contribution to the growth rate of GDP.

Table 5.2
Summary of economic projections
(annual percent change, unless specified otherwise)

March year	Actuals							Projections			
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Price measures											
CPI	2.0	4.5	1.6	0.9	1.5	0.3	0.4	2.2	1.1	1.9	2.1
Labour costs	1.3	2.0	2.1	1.8	1.7	1.8	1.8	1.5	2.0	2.1	2.2
Export prices (in New Zealand dollars)	-7.6	7.9	-2.7	-4.9	11.6	-9.0	0.1	1.1	1.8	2.4	2.4
Import prices (in New Zealand dollars)	-11.1	3.4	-1.7	-3.9	-3.0	-3.2	0.8	-3.3	3.6	1.6	1.7
Monetary conditions											
OCR (year average)	2.5	2.8	2.5	2.5	2.5	3.4	2.9	2.0	1.8	1.8	1.9
TWI (year average)	66.6	69.0	72.2	74.0	77.6	79.3	72.6	76.5	75.7	74.9	74.2
Output											
GDP (production, annual average % change)	-0.3	1.5	2.2	2.2	2.5	3.4	2.4	3.1	3.4	3.4	2.4
Potential output (annual average % change)	1.3	1.4	1.6	1.9	2.2	2.6	2.6	2.8	2.8	2.8	2.7
Output gap (% of potential GDP, year average)	-2.2	-2.0	-1.3	-1.0	-0.8	0.1	-0.2	0.1	0.7	1.3	1.0
Labour market											
Total employment (seasonally adjusted)	-0.4	1.6	0.6	0.2	3.8	3.2	2.0	5.7	2.3	1.9	0.9
Unemployment rate (March qtr, seasonally adjusted)	5.9	6.0	6.3	5.7	5.5	5.4	5.2	4.9	4.6	4.4	4.6
Trend labour productivity	1.1	1.0	0.8	0.6	0.2	0.0	-0.1	0.0	0.3	0.6	0.8
Key balances											
Government operating balance (% of GDP, year to June)	-3.2	-8.9	-4.3	-2.0	-1.2	0.2	0.7	0.3	1.2	1.7	2.0
Current account balance (% of GDP)	-1.5	-2.8	-3.2	-3.7	-2.6	-3.6	-3.1	-2.7	-3.3	-3.1	-2.9
Terms of trade (SNA measure, annual average % change)	-4.5	7.9	1.6	-4.3	11.7	-0.3	-3.1	3.9	-0.2	0.7	0.8
Household saving rate (% of disposable income)	1.3	2.2	2.4	0.5	0.4	-1.5	-2.2	-2.2	-1.9	-1.3	-0.5
World economy											
Trading-partner GDP (annual average % change) ¹	1.2	4.4	3.4	3.2	3.5	3.7	3.3	3.3	3.4	3.3	3.1
Trading-partner CPI (TWI weighted)	2.2	3.2	2.7	2.3	2.3	1.0	1.3	1.9	2.2	2.2	2.4

¹ The weights used to calculate trading-partner GDP have changed. The weights are now calculated on a one-year moving average basis from New Zealand's 16 most important trading partners' share of goods and services exports.