



Monetary Policy Statement

September 2015

Reserve Bank of New Zealand
Monetary Policy Statement

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September 2015

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Chapter 1

Policy assessment



The Reserve Bank today reduced the Official Cash Rate (OCR) by 25 basis points to 2.75 percent.

Global economic growth remains moderate, but the outlook has been revised down due mainly to weaker activity in the developing economies. Concerns about softer growth, particularly in China and East Asia, have led to elevated volatility in financial markets and renewed falls in commodity prices. The US economy continues to expand. Financial markets remain uncertain as to the timing and impact of an expected tightening in US monetary policy.

Domestically, the economy is adjusting to the sharp decline in export prices, and the consequent fall in the exchange rate. Activity has also slowed due to the plateauing of construction activity in Canterbury, and a weakening in business and consumer confidence. The economy is now growing at an annual rate of around 2 percent.

Several factors continue to support growth, including robust tourism, strong net immigration, the large pipeline of construction activity in Auckland and other regions, and, importantly, the lower interest rates and the depreciation of the New Zealand dollar.

While the lower exchange rate supports the export and import-competing sectors, further depreciation is appropriate, given the sharpness of the decline in New Zealand's export commodity prices.

House prices in Auckland continue to increase rapidly and are becoming more unsustainable. Residential construction is increasing in Auckland, but it will take some time to correct the imbalances in the housing market.

Headline CPI inflation remains below the 1 to 3 percent target due to the previous strength in the New Zealand dollar and the halving of world oil prices since mid-2014. Headline inflation is expected to return well within the target range by early 2016, as the earlier petrol price decline drops out of the annual inflation calculation, and as the exchange rate depreciation passes through into higher tradables prices. Considerable uncertainty exists around the timing and magnitude of the exchange rate pass-through.

A reduction in the OCR is warranted by the softening in the economy and the need to keep future average CPI inflation near the 2 percent target midpoint. At this stage, some further easing in the OCR seems likely. This will depend on the emerging flow of economic data.

Graeme Wheeler

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

Governor

Chapter 2

Key policy judgements



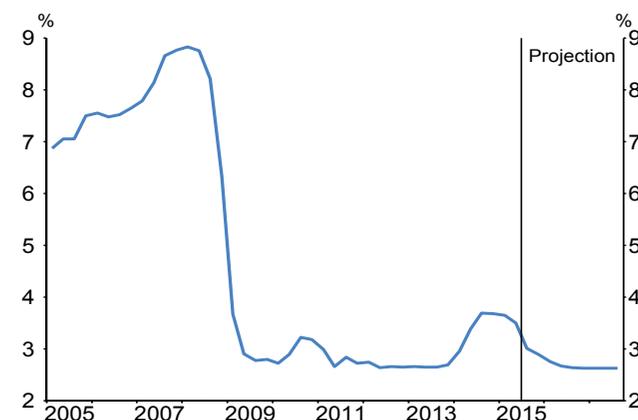
Growth in the New Zealand economy is moderating. At the end of 2015 the annual average rate of expansion is projected to be just over 2 percent, down from a rate of over 3 percent a year earlier. Headline inflation remains low, at 0.3 percent in the year to June, primarily due to falling prices in the tradables sector. During the next year, tradables inflation is projected to pick up quickly, leading headline inflation to about the middle of the 1 to 3 percent target range in the second half of 2016.

Domestically generated inflation is below average, and capacity pressure is expected to ease modestly over coming quarters in light of lower output growth. Consequently, we expect further monetary policy stimulus will be needed (figure 2.1). Lower interest rates, together with the lower exchange rate and a recovery in export prices, are expected to underpin a pick-up in growth and inflation from 2016. Growth is projected to increase to slightly over 3 percent in early 2018.

This projection is based on several judgements about forces acting on the economy and how the economy will respond. The most important judgements are that:

- the exchange rate will remain low, boosting tradables inflation and stimulating activity in the tradables sector;

Figure 2.1
90-day
interest rate



Source: RBNZ estimates.

- New Zealand's export commodity prices have troughed, and the recovery is assumed to be gradual;
- world growth will remain near its past average;
- net immigration has peaked, and its boost to demand and supply will wane over coming years; and

- rebuild activity in Canterbury has peaked, while house building in Auckland will continue to accelerate.

We examine these judgements in more detail below.

The exchange rate and near-term inflation

The exchange rate has fallen significantly since April, and we assume it will fall further over the next year to about 65 on a Trade Weighted Index (TWI) basis. Two key factors behind the depreciation are lower export prices and heightened uncertainty about the global economic outlook. Both imply weaker prospects for New Zealand's growth, and inflation, and so lower interest rates.

As box C in chapter 5 shows, the lower exchange rate accounts for a significant part of the rise in inflation over the next year. CPI inflation is expected to move into the 1 to 3 percent target range in the first quarter of 2016, and to the middle of that range two quarters later.

A higher exchange rate than assumed would imply lower near-term inflation. The medium-term inflationary impacts would depend on the factors driving the move in the exchange rate. One potential cause of a higher exchange rate would be a rebound in export prices. In such a scenario the medium-term outlook would be for stronger incomes, growth and inflationary pressure. Alternatively, the exchange rate could be higher than assumed if the Federal Reserve or other central banks were to delay interest rate increases because of concerns about a weaker or more uncertain economic outlook. In that case, the implication for New Zealand would be both lower near-term inflation and weaker medium-term growth.

The outlook for export commodity prices

The falls in commodity prices this year stem from weaker global growth prospects – especially for China – and increased global supply of some goods. For New Zealand, lower dairy prices imply reduced cash flow in the dairy sector over the current and subsequent season, with flow-on effects to incomes and confidence in the wider economy. As noted in box A in this chapter, the falls in dairy prices over the past year have contributed to a weaker outlook for medium-term inflationary pressures. We assume the recovery in world dairy prices, towards a more sustainable level, will be slow. Prices on the GlobalDairyTrade platform are assumed to remain subdued over the next year before picking up.

The dairy price falls already seen will weigh on incomes both this season and next. In the rural sector especially, and through the economy more widely, economic confidence has fallen and growth in domestic spending has eased.

Past experience shows that falling export prices lead to lower business investment, as firms worry about the prospects for future demand. We assume this historical pattern continues and that those in, and with direct exposure to, the dairy sector will cut back on investment most quickly. Box B in chapter 4 notes that farmers are already reducing on-farm investment. We also assume lower export prices will lead to slower consumption growth. Again, consistent with the historical pattern, spending on consumption is projected to slow more gradually than investment, as households use savings or borrowing to avoid pulling back sharply on regular spending.

Trading partner growth

Trading partner growth since 2011 has been close to its historical average, despite several periods of heightened uncertainty and volatility in markets. Recently, financial market volatility has increased again, along with uncertainty about the global growth outlook. Concern about the outlook for growth in China has been an important influence. As growth in China has moderated, so too has growth in some other emerging Asian economies.

We expect global growth overall to remain around its past average. However, a downside shock – while not our expectation – could change the outlook significantly. Box D in chapter 5 gives one view of how monetary policy might need to respond to such an event.

Migration, growth, and housing demand

Net immigration has been at record-high levels, and our view is that it has reached a peak in recent quarters. It is expected to ease over the projection. Migrant flows have added to both demand and supply capacity in the economy since early 2013. On the demand side, population growth has added to the demand for housing as well as consumer goods.

In Auckland, increased population has combined with a slow increase in the housing stock over recent years to result in a supply shortage. Relatedly, investor demand has increased in Auckland over the past year, exacerbating price pressures. While the Bank has noted that there are associated risks to financial stability, our expectation is that loan-to-value restrictions and the policy measures announced in *Budget 2015* will help to reduce that risk. We assume that house price inflation will ease

steadily as new supply comes on-stream, but do not assume a sharp house price adjustment.

Construction

The Canterbury rebuild has provided a strong impetus to output growth since 2011. Updated information suggests that rebuild-related construction has peaked, with work assumed to remain at a high level for several years. This suggests construction will make a smaller contribution to growth over the projection than previously assumed. Nonetheless, as discussed in chapter 5, the contribution is expected to be positive. Work elsewhere in the country has been accelerating, especially in Auckland in response to a shortage of housing and high house prices.

Box A

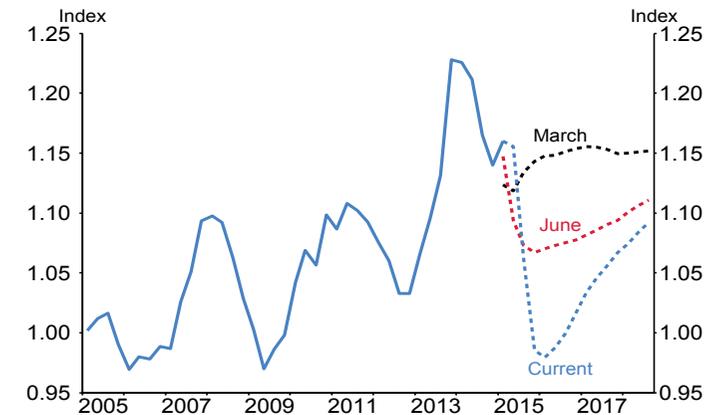
Recent monetary policy decisions

During 2013 and 2014, high export commodity prices were a key driver of growth, along with increasing construction activity and rising net immigration. While export prices eased through the first three quarters of 2014, they remained very high by past standards. With inflationary pressures estimated to be increasing, and expected to rise further, the Bank increased the OCR by 100 basis points from March to July 2014. Over the second half of 2014 and through 2015, a weakening outlook for export commodity prices – and particularly dairy prices – has been a key driver of changes in the outlook for medium-term inflationary pressures, and so of the outlook for monetary policy.

Although dairy prices had fallen by the time of the March 2015 *Statement*, there was a significant offset from lower oil prices, which kept the terms of trade high by past standards (figure A.1). With inflation modest, the high exchange rate weighing on tradables sector incomes, and concerns about drought, the Bank changed its policy outlook to projecting a period of stability in interest rates (figure A.2).

Dairy prices fell significantly further between the March 2015 and June 2015 *Statements*, and again between the June *Statement* and the July OCR review. Figure A.1 indicates the magnitude of the falls in the Bank's terms of trade projection from the March *Statement* to the current projection. The consequent reduction in spending power and confidence became more evident in activity data received over the second quarter of 2015, and so the outlook for growth and inflationary pressures was revised down. Reflecting this, the Bank lowered the OCR by 25 basis points in June and July.

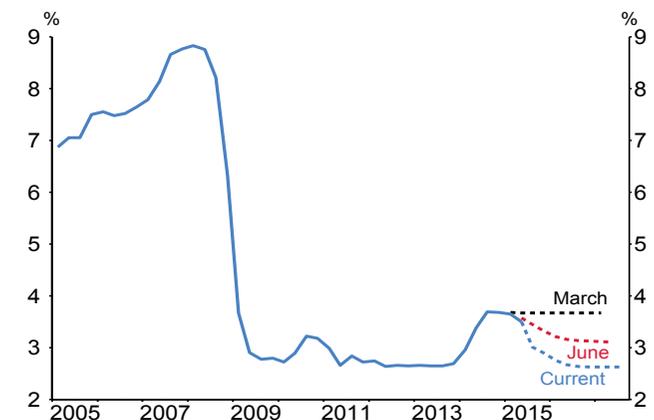
Figure A.1
Terms of trade



Source: Statistics New Zealand, RBNZ estimates.

Note: Dotted lines indicate projections.

Figure A.2
90-day interest rate



Source: RBNZ estimates.

Note: Dotted lines indicate projections.

Chapter 3

International developments



The global economic environment has deteriorated over 2015. Economic growth in New Zealand's trading partners has slowed, and forecasts have been revised down. Monetary policy remains very accommodative in most regions, and has been eased further over 2015. Trading partner inflation remains weak, reflecting slack in the global economy and declines in oil and other commodity prices.

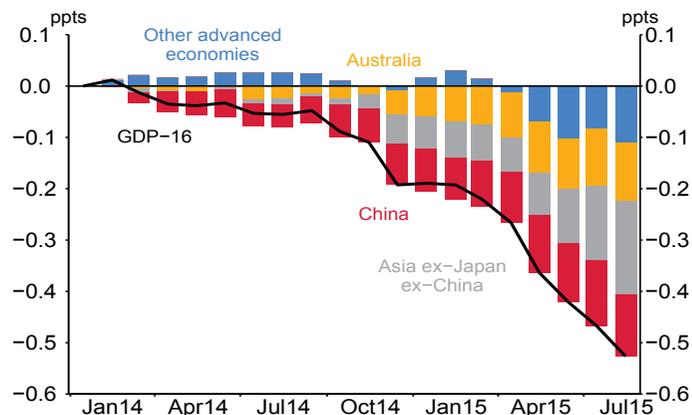
Global financial market volatility has increased significantly since the June *Statement*. Equity markets have been particularly volatile, and there have been widespread declines in commodity prices. The increased volatility relates mainly to increased concern and uncertainty about the strength of and prospects for the Chinese economy, and continuing uncertainty about the timing of United States interest rate increases. Of most concern for New Zealand is the impact of weaker Chinese demand on the price and volumes of New Zealand's exports, including through flow-on effects to New Zealand's other Asia/Pacific trading partners. Heightened volatility has increased financial risk measures and risk aversion. This may provide a headwind to business and consumer confidence and thus global growth. At this stage capital markets continue to function reasonably well.

Trading partner economies

Annual growth in New Zealand's trading partners slowed to 3.5 percent in the June 2015 quarter, down from 3.7 percent a year earlier. The outlook for trading partner growth has been revised down over 2015, especially in the Asia/Pacific region (figure 3.1). Trading partner growth is expected to increase only slightly during the projection – less than previously expected – supported in large part by stimulatory monetary policy, and in some areas by fiscal policy. However, there remains significant uncertainty about the outlook – especially for China, which has important flow-on effects through the Asia/Pacific region and the global economy.

Asian economies are an important source of demand for New Zealand's exports, and for those of Australia – a key trading partner for New Zealand. Within the Asia/Pacific region, China plays a major role, influencing Australia and New Zealand directly through its impact on export volumes and prices, particularly for commodities, and indirectly through its effect on other Asian economies.

Figure 3.1
Revisions to growth forecasts
(2015, annual average)



Source: Consensus Economics, Statistics New Zealand, RBNZ estimates.

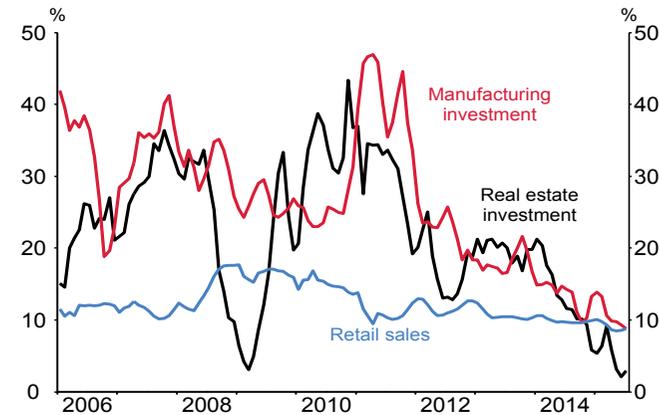
Note: The graph illustrates the cumulative changes in Consensus Economics forecasts for annual average GDP growth since January 2014, weighted by New Zealand merchandise export shares from the June 2015 quarter. Asia ex-Japan ex-China includes Hong Kong, India, Indonesia, Malaysia, Singapore, South Korea, Taiwan, Thailand, and the Philippines. Other advanced economies includes Canada, the euro area, Japan, the United Kingdom, and the United States.

Annual growth in China continues to slow. Part of this slowdown reflects a structural trend as economic reforms continue and the economy moves towards more consumption-led growth. However, cyclical momentum is also slowing.

Weakness has been most pronounced in the industrial sector. Considerable spare capacity in the manufacturing sector and slowing output growth have led to less growth in manufacturing investment (figure 3.2). In turn, this has weighed on demand for hard commodities, of which China's industrial sector is a globally significant user.

Growth in real estate investment remains subdued, due to a large build-up of housing inventory. Recently, there have been signs of recovery in the property market. Residential property prices have increased in larger cities over recent months. Prices in smaller cities continue to decline.

Figure 3.2
Economic activity in China
(annual growth)



Source: Haver Analytics, RBNZ estimates.

Note: Manufacturing and real estate investment are in current prices, retail sales is in real terms. 3-month moving average.

Consumption growth has held up relative to investment. This is important for New Zealand, as a large share of New Zealand's exports to China are consumer goods and services. Nonetheless, growth in retail sales volumes has been weaker than in 2014 and is yet to offset falling investment growth.

GDP growth in China is projected to remain near 7 percent over 2015, supported by accommodative monetary and fiscal policies. Since the June *Statement*, the People's Bank of China (PBoC) has eased its benchmark interest rates further and the reserve requirement ratio for banks by 50 basis points. Over the latter part of the projection, growth is expected to ease slightly to about 6 percent, but remain high relative to other economies.

However, there are significant downside risks to the outlook for Chinese growth. Some indicators suggest greater cyclical weakness than indicated by headline GDP growth. There is also uncertainty around how

the various policy changes will affect economic activity. In addition, while only a small proportion of aggregate household wealth is held in shares, significant declines and volatility in Chinese equities in the past few months may dampen confidence more broadly. Over the medium term, progress on structural reforms remains important for supporting GDP growth.

The slowing of Chinese growth is flowing through to New Zealand's other Asian trading partners. GDP growth in Asia excluding China and Japan has declined to 3.8 percent in the June quarter, down from 4 percent a year earlier. China's economic slowdown is dampening export volumes for these countries, and domestic demand across the region also appears to have weakened over recent months. Country-specific factors are also having an impact, such as public health concerns in South Korea and lower revenue for commodity exporters such as Malaysia.

In major advanced economies, the gradual nature of the recovery means that there continues to be spare capacity, and monetary policy settings remain very stimulatory. A concern is that recent risk aversion and volatility in financial markets could dampen confidence and act as a headwind to economic growth.

Annual GDP growth in Australia is below its historical average, at 2 percent for the June 2015 quarter. The move away from growth driven by investment in resource extraction continues to be gradual, with household sector demand growth below average despite low interest rates and high house prices. Investment in the mining sector has declined substantially, while investment in other business sectors has been weak. Growth in commodity export volumes has provided some offset to this weakness, although export prices are significantly lower.

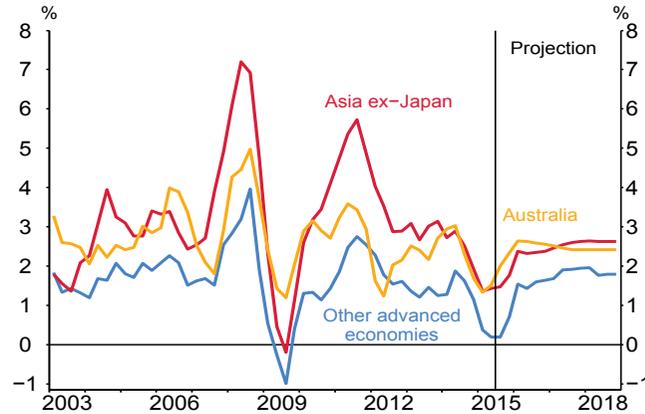
Australian labour market conditions have generally improved over 2015, but spare capacity in the economy remains. The Reserve Bank of Australia has kept its cash rate stable at a record low of 2 percent, following a 25 basis point reduction in May 2015. Financial market pricing indicates a market expectation that there will be a further 25 basis point reduction in the cash rate by the end of 2015.

The United States economy is growing at a moderate pace, having rebounded from the weather-induced weakness at the start of 2015. Consumption is underpinning growth, supported by an increase in real disposable incomes and net wealth. Conditions in the housing market are strengthening, and residential investment is growing solidly. In contrast, growth in industrial output and business fixed investment is more subdued, in part dampened by a stronger US dollar and weaker activity in the energy sector. These factors have contributed to a slightly weaker outlook for the United States economy than expected a year ago.

Conditions in the United States labour market continue to improve. Employment growth is robust and the unemployment rate has edged lower this year, to 5.3 percent in July. Despite this, both inflation and wage increases remain modest, pointing to some remaining slack in the economy. Reflecting continued improvement in the economy and labour market, financial market pricing suggests that the Federal Reserve will begin increasing interest rates from a very low level over the coming six months.

Despite recent events surrounding Greek debt negotiations, the euro area as a whole continues its gradual recovery. The European Central Bank's extremely accommodative monetary policy has contributed to record low interest rates for households, and this is supporting stronger consumption growth. In addition, the weaker euro is helping to support net exports. The labour market is improving, but the euro

Figure 3.3
Inflation
(annual)



Source: Haver Analytics, RBNZ estimates.

Note: Asia ex-Japan includes China, Hong Kong, India, Indonesia, Malaysia, Singapore, South Korea, Taiwan, Thailand, the Philippines, and Vietnam. Other advanced economies includes Canada, the euro area, Japan, the United Kingdom, and the United States.

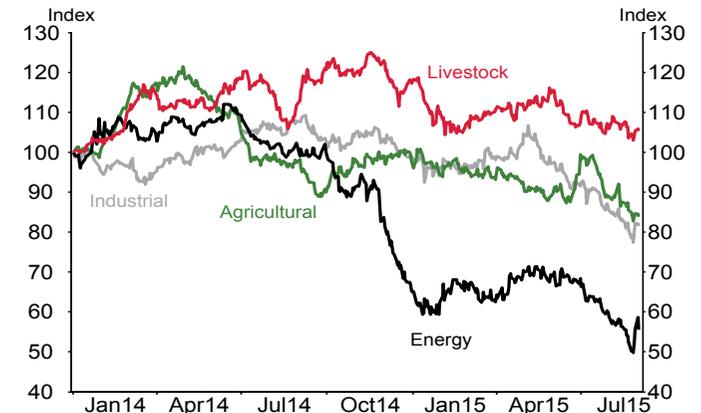
area unemployment rate remains elevated around 11 percent. Overall, euro area growth is forecast to pick up to 1.7 percent by the end of 2015, and to remain around this level for several years. While this is an improvement in growth compared with recent years, significant slack remains in the euro area and is expected to be absorbed only gradually.

Inflation in New Zealand's trading partners fell substantially over the second half of 2014 (figure 3.3). The decline in the price of oil in late 2014, and further declines in oil and other commodity prices since July, will dampen annual inflation rates until 2016. Over and above this, core inflation is expected to remain modest over the next three years in most economies. Low inflation reflects the gradual expected absorption of spare capacity. As a consequence, monetary policy settings across many regions are likely to remain accommodative for an extended period.

Commodity price developments

A broad range of commodity prices have fallen since the June *Statement*, after showing signs of stabilising earlier in the year (figure 3.4). This will lower the incomes of commodity exporting countries, including New Zealand, although most countries will receive some offset through cheaper oil imports.

Figure 3.4
Global commodity prices



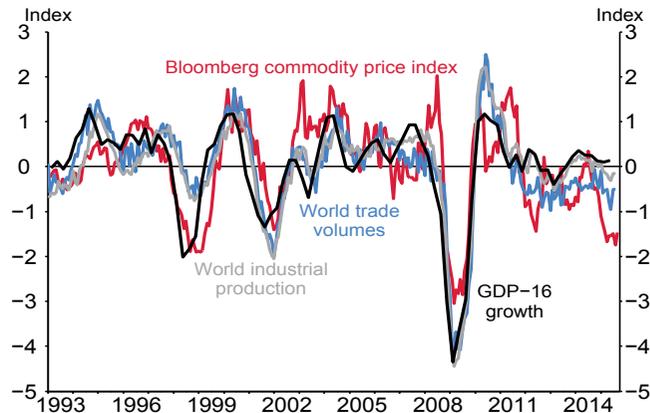
Source: Bloomberg, RBNZ estimates.

Note: SDRs, 1 January 2014 = 100.

Concerns about global growth and prospects for future demand have contributed to the fall in commodity prices. The outlook for Chinese growth and demand is especially important, given that China accounts for about 18 percent of global non-oil commodity imports. The second largest consumer is the United States, at 7 percent.¹ Increasing concern and uncertainty about Chinese economic growth, and related volatility in

¹ HSBC Global Research *Commodities' wake*, 3 August 2015.

**Figure 3.5
Growth and
commodity prices**



Source: Haver Analytics, Bloomberg, RBNZ estimates.

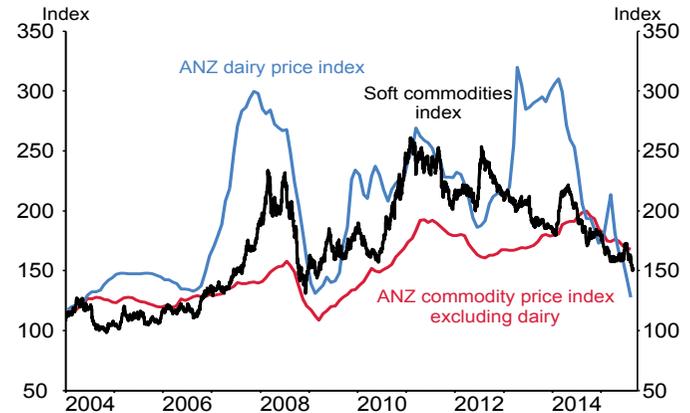
Note: Standardised, deviation from average.

Chinese financial markets, have contributed to the declines in commodity prices since the June *Statement*.

At the same time, abundant supply of many commodities remains an important factor underpinning low prices. In part this reflects the global supply response to the higher commodity prices over recent years. The importance of supply is highlighted by the significant divergence between indicators of global growth and commodity prices that has opened up over the past year (figure 3.5).

Commodity supply has fallen less quickly than expected in response to price declines, and this is most notable in global oil markets. The price of Brent Crude oil has fallen more than 20 percent since the beginning of July, as supply growth outpaces expectations. Overall, the International Energy Agency forecasts that oil production will continue to outpace oil demand through 2016.

**Figure 3.6
Commodity prices**



Source: ANZ Bank, Bloomberg, RBNZ estimates.

Note: July 2003 = 100. The soft commodities index is a weighted average of food commodity prices constructed from daily Bloomberg data, using weights based on the International Monetary Fund's primary commodity price index. It includes: wheat, corn, barley, soybeans, soybean meal, soybean oil, palm oil, lean hogs, poultry, sugar, coffee, and cocoa. The indices are in SDR terms.

Consistent with this trend decline in commodity prices, prices for New Zealand's commodity exports have fallen in 2015. Dairy prices have fallen about 15 percent since the beginning of the year, and are 55 percent below their February 2014 level. The prices of New Zealand's other export commodities, including meat and forestry products, have been much more resilient (figure 3.6). Prices for food-based commodities in general have fallen by less than dairy prices.

Despite the 27 percent rise in dairy prices on the GlobalDairyTrade platform since the beginning of August, dairy prices remain near six-year lows. Growth in global milk production ramped up significantly in 2014, contributing to a build-up in inventories. While many farmers, including in New Zealand, are operating well below break-even price levels, the easing in global production growth has been more gradual

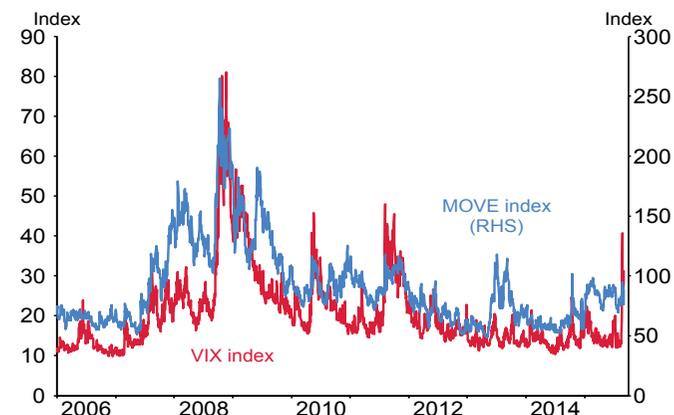
than expected. Supply adjustment is being delayed partly by subsidies supporting farmers in several countries. The removal of European quotas on milk production in 2015 also adds to uncertainty about the global supply outlook. On the demand side, there is significant uncertainty about the rate of reduction in Chinese dairy inventories that built up in 2013.

Global financial conditions

Global financial market volatility has increased markedly since the June *Statement*, but remains well below the heights seen during the global financial crisis (figure 3.7). Equity market volatility has risen the most, with increases in bond and exchange rate volatility more modest. Capital markets have remained reasonably well-functioning thus far. While the Greek debt negotiations contributed to the rise in volatility earlier in the quarter, the recent rise mainly stems from concerns and uncertainty about the strength of the Chinese economy. Investors have also become more concerned about growth prospects for other emerging markets.

A key trigger for concern about some emerging market economies has been the rapid fall in the prices of commodities they export. There have also been concerns that the appreciating US dollar is increasing the local currency value of US dollar-denominated debt. A consequence has been significant capital outflows and exchange rate depreciation in a range of countries. Brazil, Russia and Malaysia in particular have been affected. Capital outflows from China and some of New Zealand's other Asian trading partners have also increased, but outflows appear to have been more orderly to date. Most countries in Asia have built up substantial foreign exchange reserves in recent years.

Figure 3.7
Financial
market
volatility



Source: Bloomberg.

Note: The VIX index shows the market's expectation of 30-day volatility in the S&P500 index, while the MOVE (Merrill Lynch Option Volatility Estimate) index shows implied one-month volatility for US Treasury bonds.

Chinese equity prices fell significantly in late June and early July, and again in August. In June and July, the Shanghai Composite index fell more than 30 percent from its peak over the course of 19 days. This fall followed an increase of around 150 percent over the previous 18 months (figure 3.8). There was no single trigger for the fall. Rather, it was attributed to a combination of weaker economic data, recognition that equity prices were overvalued, and policy measures by the Chinese authorities to contain leveraged investment. During this period, the Chinese authorities lowered interest rates, facilitated the purchase of shares by state entities, and suspended the trading of some company shares.

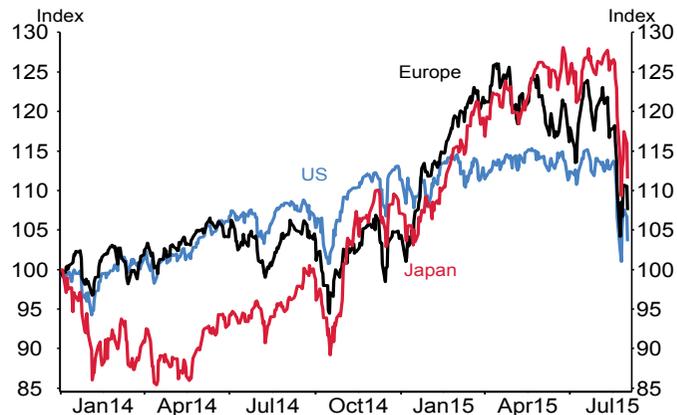
The equity price falls in late August were more substantial than those in June and July. These were triggered by continuing concerns about Chinese growth prospects. The Shanghai Composite index fell almost 27 percent over seven days, to late 2014 levels.

Figure 3.8
Shanghai
Composite
index



Source: Reuters.

Figure 3.9
Equity indices



Source: Bloomberg.

Note: Indices shown are US S&P 500, Japan Nikkei 225, and Europe Stoxx 600. 1 January 2014 = 100.

Following the fall in Chinese indices, the US S&P 500 index fell more than 10 percent in four days, before rebounding slightly. Similar moves were seen in European equities (figure 3.9).

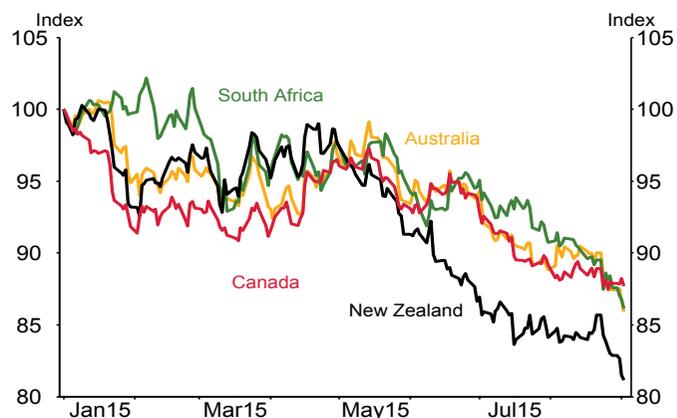
Some market participants see the lower prices as closer to fundamental values, given the large run-up in equity prices over the past several years. The fall also brings prices more in line with a widening in corporate credit spreads over the past few months.

Increased financial market volatility has raised the prospect that monetary policy could remain stimulatory for longer. In particular, the period of volatility has caused financial market participants to reduce their expectation of a September policy rate increase by the Federal Reserve. Nevertheless, the Federal Reserve is expected to begin tightening policy some time over the next six months, driving further divergence between its interest rates and those in the euro area and Japan. The Bank of Japan and European Central Bank are still undertaking quantitative easing programmes to stimulate growth and inflation, and market commentary is suggesting that these programmes might be extended.

The PBoC surprised investors by devaluing the yuan against the US dollar in early August. The move was part of reforms to open China's foreign exchange market, by allowing market forces to help the USD/CNY find its equilibrium level. Despite the recent devaluation, on a trade-weighted basis the Chinese exchange rate remains elevated compared to recent years. The move resulted in other Asian economies' currencies depreciating as well, reducing the extent of the competitiveness gain for China.

Expectations that the Federal Reserve may now raise interest rates later than previously expected has caused a slight weakening in the US dollar

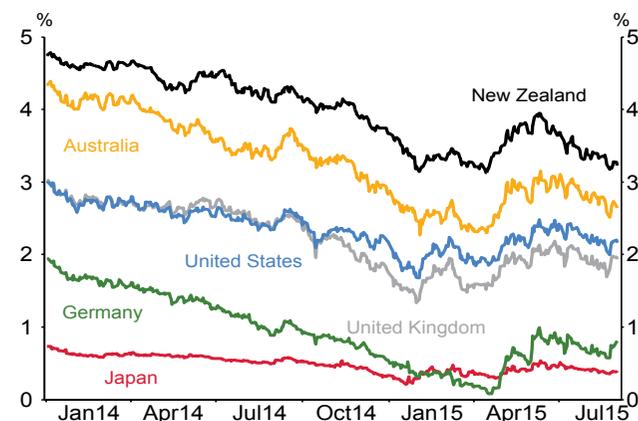
**Figure 3.10
Commodity
currencies**



Source: Bloomberg.

Note: Exchange rate with the US dollar. A fall is a depreciation. 1 January 2015 = 100.

**Figure 3.11
10-year
government
bond yields**



Source: Reuters.

against other major currencies since the June *Statement*. Nonetheless, the US dollar has continued to strengthen against emerging market currencies.

Reflecting falls in commodity prices, several commodity-linked currencies have depreciated. Among these are the Canadian dollar, South African rand, and Australian dollar (figure 3.10). The New Zealand dollar has also depreciated since the June *Statement*, as discussed further in chapter 4.

After increasing in late April, global 10-year bond yields have gradually started to fall again (figure 3.11). Among the reasons are lower risk premia and expectations that monetary policy will remain more stimulatory for longer. 10-year government bond yields have returned to near their 2015 lows in New Zealand, Australia, and the United States. However, yields in Germany remain higher than 2015 lows as growth prospects improve in the euro area, and reflecting a view that German bond yields fell below fundamental levels earlier in the year.

Chapter 4

Current domestic conditions



Economic growth in New Zealand has slowed since the end of 2014. The weaker international economic environment is weighing on domestic demand, most importantly through lower export prices. Monetary conditions have eased since the beginning of the year, as mortgage rates have declined and the New Zealand dollar TWI has fallen sharply. Growth in the economy's productive capacity has remained strong, reflecting strong labour force growth. As a result of weaker demand and strong growth in productive capacity, pressure on productive resources is estimated to have declined over the past year.

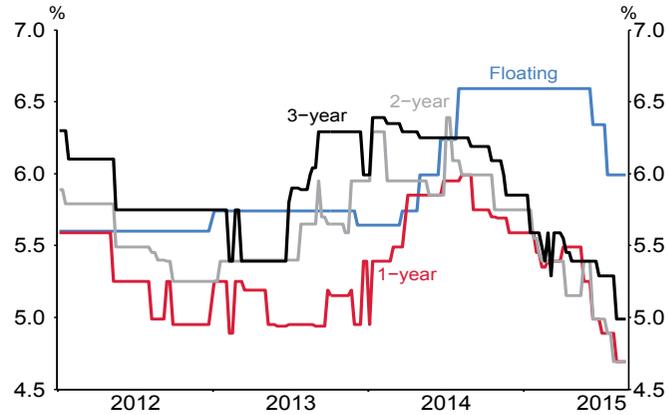
Domestic financial market developments

Monetary conditions have continued to ease since the beginning of 2015, and have eased further since the June *Statement*. The OCR was lowered by 25 basis points in June and July, and financial markets now anticipate more easing than they did at the time of the June *Statement*. More accommodative domestic monetary policy and lower global interest rates have contributed to a substantial decline in New Zealand's wholesale and mortgage interest rates this year. The New Zealand dollar TWI has fallen significantly, further easing monetary conditions.

Mortgage interest rate declines have been most pronounced for the one- and two-year fixed terms (figure 4.1), where competition between banks is strong. Since the beginning of the year, two-year fixed mortgage rates have declined by more than 1 percentage point, with 0.7 percentage points of this fall occurring since the June *Statement*.

Reflecting the relatively low fixed mortgage rates, the proportion of mortgages on floating rates fell to 26 percent in July, down from a peak of more than 60 percent in April 2012 (figure 4.2). Over the past year, the

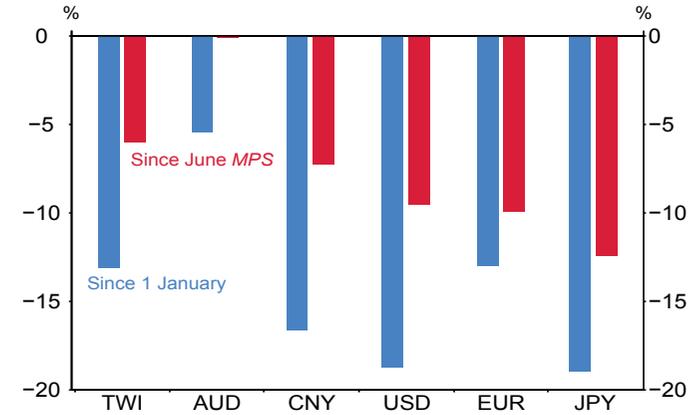
Figure 4.1
Mortgage interest rates



Source: interest.co.nz, RBNZ estimates.

Note: Each rate shown is the lowest carded rate on offer from four banks: ANZ, ASB, BNZ, and Westpac.

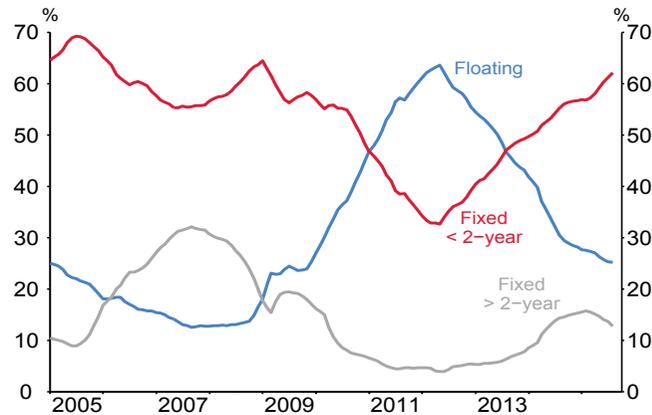
Figure 4.3
Bilateral NZD movements



Source: Reuters, RBNZ estimates.

Note: % change to date.

Figure 4.2
Share of mortgages by duration



Source: RBNZ.

two-year mortgage rate has been the most popular, as this has been the lowest available mortgage interest rate.

The New Zealand dollar TWI has fallen further since the June *Statement*, extending the decline that began in April this year. An important factor weighing on the New Zealand dollar is the continued deterioration in New Zealand's terms of trade, which dampens New Zealand's relative growth prospects and so expected interest rate differentials.

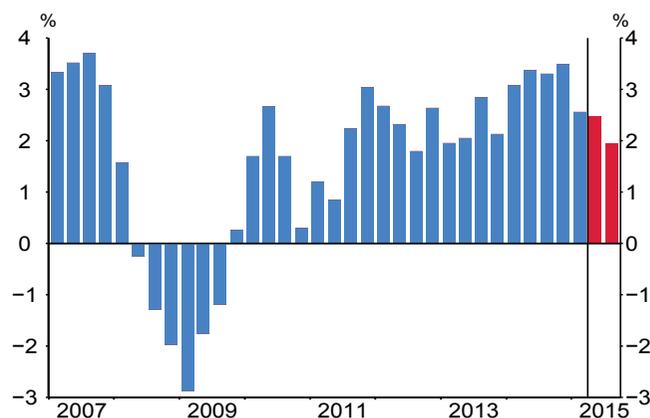
The New Zealand dollar TWI is currently 13 percent lower than at the beginning of the year, and the decline has been broad-based across New Zealand's key trading partner currencies (figure 4.3). The NZD-USD exchange rate has fallen to around 0.63 – its lowest rate since mid-2009 – as moderate economic growth in the United States and the chance of monetary policy tightening later this year continue to underpin a strong US dollar.

Since the June *Statement*, bilateral exchange rate movements have been more mixed, in part due to increased uncertainty and risk in global financial markets related to events in China. The New Zealand dollar has depreciated most against typical ‘safe-haven’ currencies, such as the US dollar, euro and Japanese yen. In contrast, the New Zealand dollar is broadly unchanged against other commodity-linked currencies, such as the Australian dollar and the Canadian dollar.

Output growth

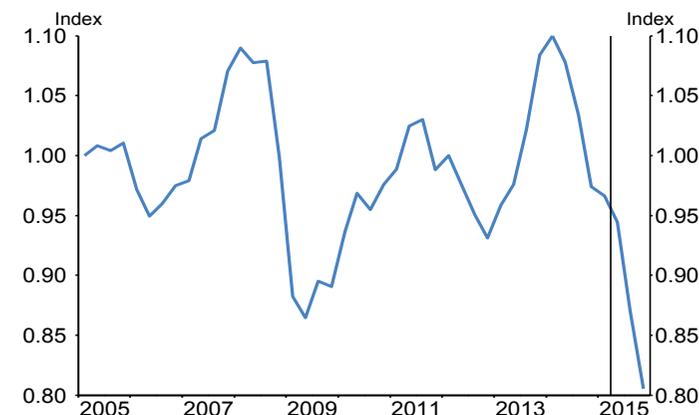
The economy expanded by 2.6 percent in the year to March 2015, which was a slower pace of growth than over 2014 (figure 4.4). Growth is estimated to have slowed slightly further over the middle of 2015.

Figure 4.4
GDP growth
(annual)



Source: Statistics New Zealand, RBNZ estimates.

Figure 4.5
Real export prices
(world terms)



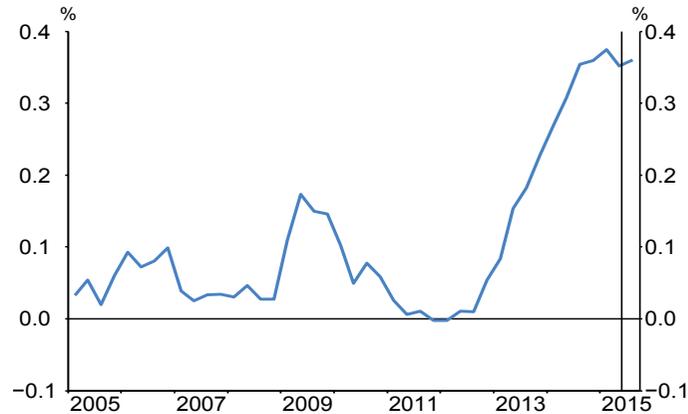
Source: Statistics New Zealand, RBNZ estimates.

In addition to supportive monetary policy, drivers of strong GDP growth over 2014 were the high average level of export prices, increasing net immigration, and increasing construction activity. The slower growth over 2015 reflects a moderation in the impulse to growth from each of these drivers, with easier monetary conditions providing some buffer.

As discussed in chapter 3, prices of New Zealand’s export commodities have declined significantly since the beginning of the year, due mainly to falls in dairy prices. These declines in commodity prices are consistent with a fall in New Zealand’s overall export price basket of around 25 percent in real terms since early 2014 – an extremely large adjustment in historical terms (figure 4.5).

Net immigration remains strong, but appears to have plateaued over recent quarters (figure 4.6). Net permanent and long-term immigration of working-age people in the year to July 2015 was 53,000, or 1.5 percent of the working age population. Net immigration from Australia remains historically elevated, with New Zealand receiving a net inflow of migrants

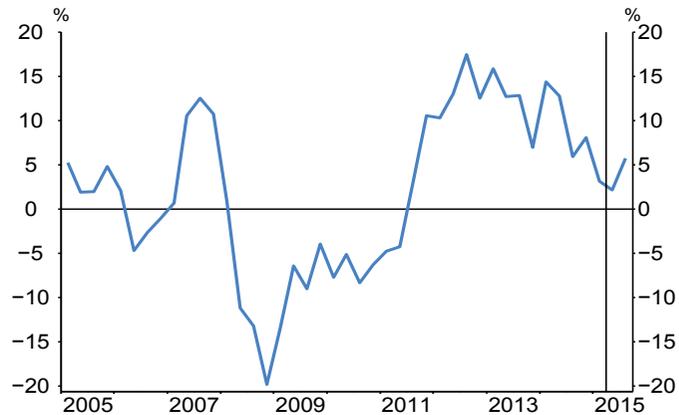
Figure 4.6
Net
immigration



Source: Statistics New Zealand, RBNZ estimates.

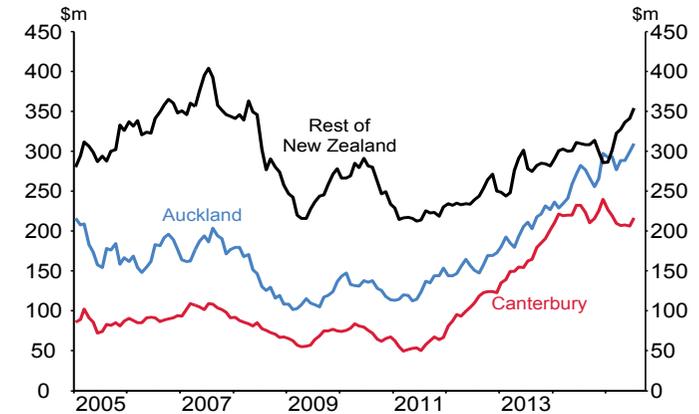
Note: Share of working-age population, s.a. The figures are for net permanent and long-term working-age migration flows.

Figure 4.7
Construction
growth
(annual)



Source: Statistics New Zealand, RBNZ estimates.

Figure 4.8
Value of
residential
consents



Source: Statistics New Zealand, RBNZ estimates.

Note: 3-month moving average, s.a.

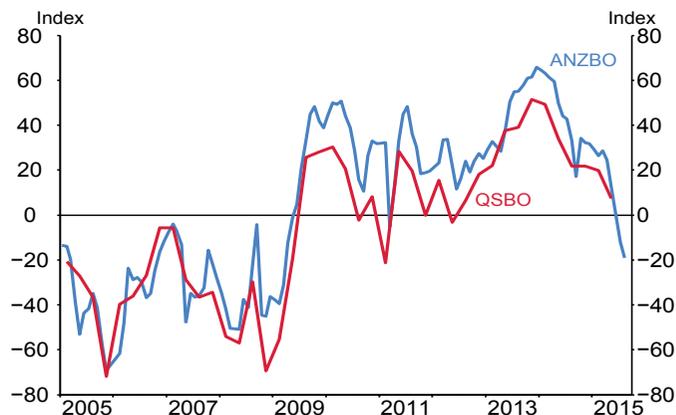
from Australia in recent months. In addition, the number of permanent arrivals remains elevated across a range of visa categories.

Construction expenditure is estimated to have remained strong through the middle of 2015, but to have grown at a slower pace than in recent years (figure 4.7).

Growth in residential investment has slowed over the past 12 months. Slower growth in residential investment is mainly due to the residential rebuild in Canterbury which is estimated to have peaked in early 2015, about a year earlier than previously expected. Residential consent issuance in Canterbury has slowed, but strong consent issuance elsewhere is consistent with continued growth in residential building activity through the middle of 2015 (figure 4.8).

Non-residential construction has remained strong, both in Canterbury and in the rest of New Zealand, but the pace of growth has slowed over the past year.

Figure 4.9
Business confidence
(s.a.)

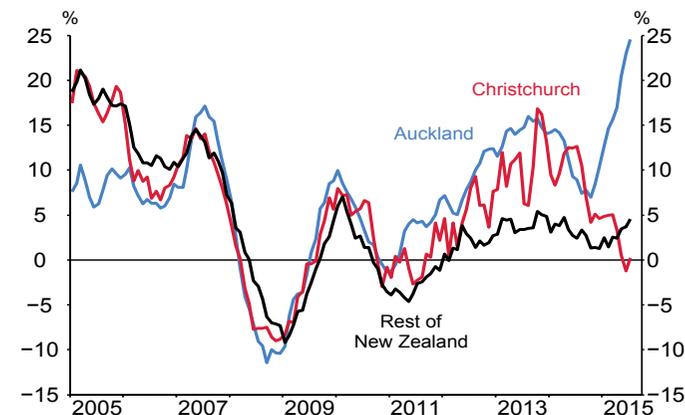


Source: ANZ Bank, New Zealand Institute of Economic Research, RBNZ estimates.

Growth in business investment is estimated to have slowed over the middle of 2015. Slower growth in business investment is consistent with lower capacity pressure, export prices, and reduced business confidence (figure 4.9). Box B describes how farmers and other businesses are responding to lower dairy prices, based on recent discussions with contacts in the agricultural sector.

While other drivers of domestic demand have slowed, the housing market – which tends to correlate with consumption growth – has continued to strengthen. High population growth and low mortgage interest rates are contributing to strong housing demand. At present, house price inflation is much higher in Auckland than in the rest of the country, reflecting stronger population pressures and constrained housing supply (figure 4.10). House price inflation is beginning to increase in some other areas, such as Hamilton and Tauranga. Policy measures announced in *Budget 2015* and restrictions on high loan-to-value ratio lending to investors in Auckland are expected to help dampen demand for existing houses.

Figure 4.10
House price inflation



Source: REINZ, RBNZ estimates.

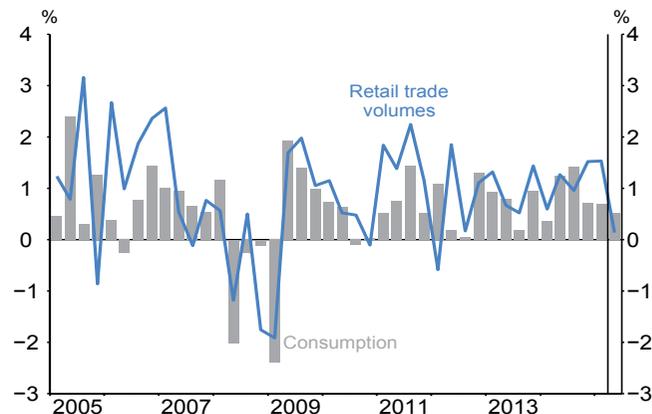
Note: Annual, 3-month moving average.

Lower export prices, and hence lower current and expected national incomes, have weighed on consumer confidence and spending. However, strong growth in real labour incomes and house prices over the past year is supporting moderate growth in household consumption. Low import prices, particularly for commodities such as oil, are boosting households' purchasing power.

While household consumption growth has been moderate, growth in retail trade volumes has been stronger in recent quarters (figure 4.11). In part, this reflects the boost to retail sales from strong growth in spending by overseas visitors.

Import volumes have been high over the past year, reflecting the dampening impact of the elevated exchange rate on the price of imports. However, import volumes are estimated to have declined over the middle of 2015, as lower growth in domestic demand has reduced the demand for imports, and the lower exchange rate has increased their relative price.

Figure 4.11
Spending growth
(quarterly, real, s.a.)



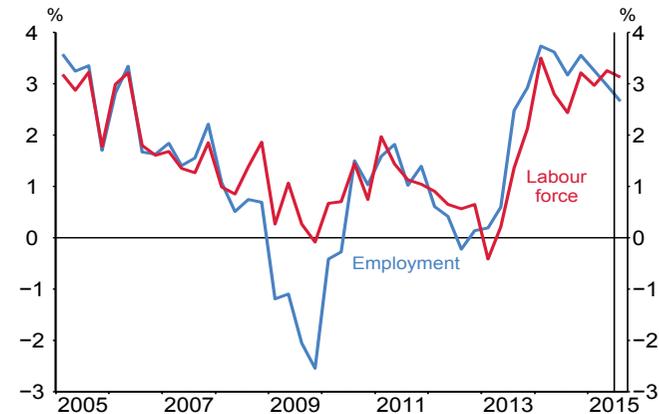
Source: Statistics New Zealand, RBNZ estimates.

The lower exchange rate is also acting as a partial buffer for the export sector from declining prices. With the exception of dairy, and, to a degree, logs, many of New Zealand's export prices remain relatively high. Further, the lower exchange rate is supporting demand for New Zealand's service export industries, such as tourism and education.

Capacity pressure

Annual employment growth eased to around 3 percent over the first half of 2015, in line with slower growth in economic activity, but remains historically high. Strong growth in the labour force has added significantly to the economy's supply capacity over the past two years. At present, the size of the labour force is growing at slightly over 3 percent per year,

Figure 4.12
Employment and labour supply growth
(annual)



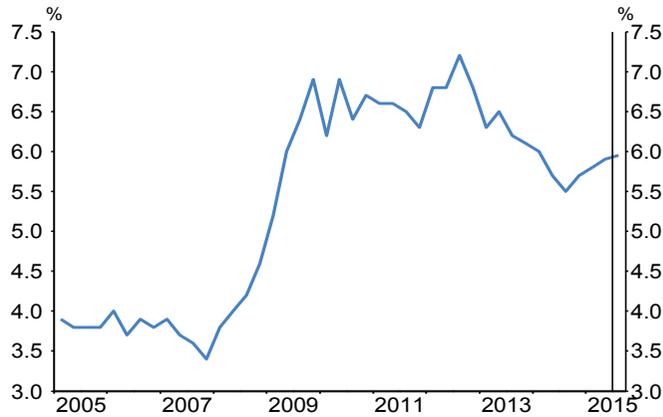
Source: Statistics New Zealand, RBNZ estimates.

reflecting both high levels of net immigration and higher participation in the labour force (figure 4.12).

The slight easing in employment growth and continued strength in labour supply have resulted in labour market conditions loosening slightly over 2015. The unemployment rate has increased to around 6 percent, from a low of 5.5 percent in the September 2014 quarter (figure 4.13). Nominal wage growth has remained relatively stable over the past year. Continued low CPI inflation means that wage growth remains strong in real terms.

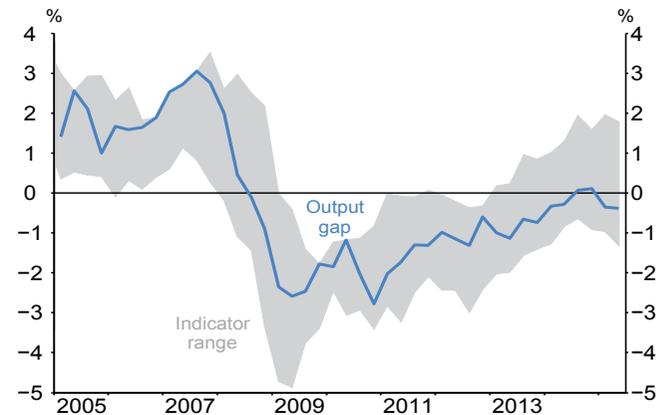
Slower GDP growth over the first half of 2015 and the increased supply capacity have contributed to decreased pressure on productive resources since the end of 2014. The output gap is currently estimated to be slightly below zero. This is within the range suggested by a suite of indicators, although estimates of the output gap are always subject to considerable uncertainty (figure 4.14).

Figure 4.13
Unemployment rate
(percent of labour force, s.a.)



Source: Statistics New Zealand, RBNZ estimates.

Figure 4.14
Output gap
(percent of potential output)



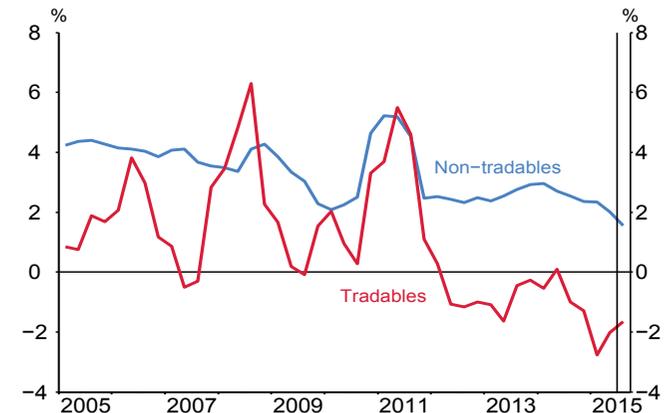
Source: RBNZ estimates.

Pricing and inflation

Annual CPI inflation increased to 0.3 percent in the June 2015 quarter, from 0.1 percent in the previous quarter. In the June quarter, annual tradables inflation was -2 percent, and annual non-tradables inflation was 2 percent (figure 4.15).

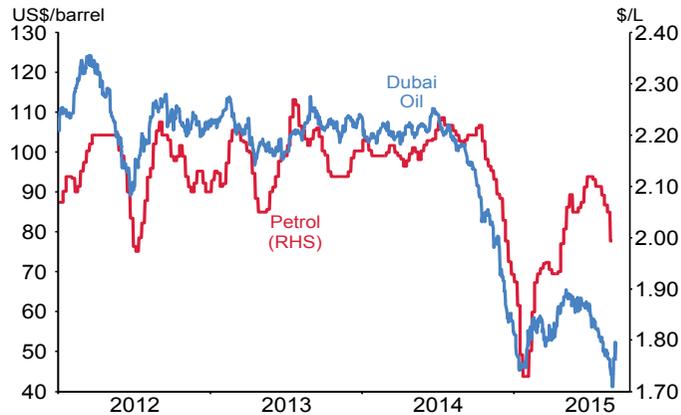
Headline inflation has been affected by continued volatility in international oil prices. Domestic petrol prices declined sharply from November 2014 to January 2015, before increasing through the middle of the year as oil prices recovered, the exchange rate depreciated, and refiner margins increased (figure 4.16). However, petrol prices have declined since June, as oil prices have fallen back to around their lows earlier in the year. Other tradables prices have generally remained low, mostly reflecting the elevated exchange rate during 2014 and the beginning of 2015.

Figure 4.15
Inflation
(annual)



Source: Statistics New Zealand, RBNZ estimates.

Figure 4.16
Oil and petrol prices

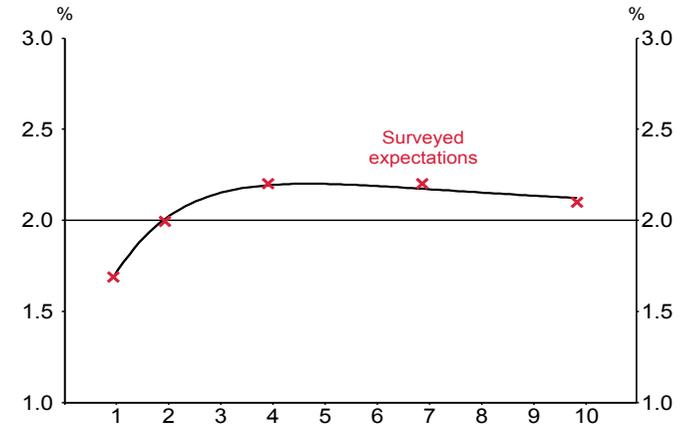


Source: Reuters, Ministry of Business, Innovation and Employment.

Domestic inflationary pressures remain subdued, reflecting weaker demand and capacity pressure. Non-tradables inflation is expected to decline further in the near term to historically low levels, although this partly reflects temporary factors, such as the decrease in ACC motor vehicle levies in July. A range of measures of core or underlying inflation are also at historically low levels.

Survey measures of medium-term inflation expectations have stabilised or increased slightly following declines during 2014 and the beginning of 2015. These measures are at a level that is consistent with CPI inflation returning to around 2 percent in the medium term (figure 4.17). The Reserve Bank's estimate of long-term inflation expectations extracted from a wide range of surveys has declined since the introduction of the September 2012 Policy Targets Agreement,¹ which introduced a focus on the midpoint of the 1 to 3 percent inflation target range (figure 4.18). This decline is consistent with long-term inflation expectations becoming more anchored near 2 percent.

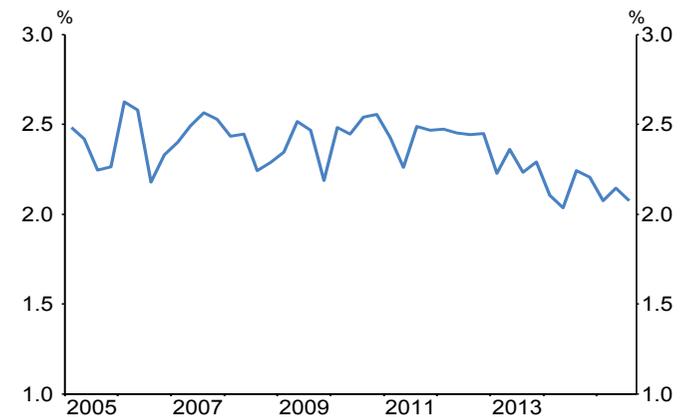
Figure 4.17
Inflation expectations
(annual, by number of years ahead)



Source: ANZ Bank, Aon Consulting, Consensus Economics, RBNZ estimates.

Note: The 1-year ahead expectation data point is a simple average of the RBNZ 1-year, Aon 1-year, and ANZ 1-year series. The 2-year ahead expectation data point is the RBNZ 2-year series. The 4-year ahead expectation data point is the Aon 4-year series. The 7-year ahead expectation data point is the Aon 7-year series. The 10-year ahead expectation data point is the Consensus 10-year series. The black line shows a curve fitted through the expectations series using a Nelson-Siegel model.

Figure 4.18
Long-term inflation expectations
(annual)



Source: ANZ Bank, Aon Consulting, Consensus Economics, RBNZ estimate.

¹ See Kendall, R and T Ng (2013) 'The 2012 Policy Targets Agreement: an evolution in flexible inflation targeting in New Zealand', Reserve Bank of New Zealand *Bulletin* Vol. 76, No. 4, December 2013 for more discussion of the 2012 Policy Targets Agreement.

Box B

Recent discussions with the agriculture sector

The Bank regularly meets organisations across the country to improve our industry knowledge and obtain timely information on economic conditions. Leading up to the September *Statement*, Bank representatives talked to more than 20 organisations connected to the agriculture sector, and another 30 firms from other industries.

The aim of our discussions with the agriculture sector was to better understand how low dairy prices will affect farmers, rural communities, and wider activity. Since February 2014, dairy prices have fallen 55 percent, weighing on farmers' current and prospective incomes.

The New Zealand agriculture sector accounts for 5 percent of GDP, with primary food manufacturing accounting for an additional 4 percent of GDP. Economic conditions in the agriculture sector can have substantial flow-on effects to the wider economy through, for example, the transport and business service sectors, as well as economy-wide effects on confidence, incomes, consumption and investment.

Contacts in the agriculture sector have explicit strategies to manage dairy price volatility and the decrease in cash flow. The longer dairy prices remain low, the larger the required response will become. Farmers with higher break-even prices face more pressure to make changes, and tend to be those with higher working expenses, drawings, interest and rent costs. For example, farmers with more intensive farming systems have higher feed and capital costs.

Contacts note that to manage reduced cash flow, farmers have been increasing overdraft use, and are using deferred terms and interest-free

loans where possible. Some farmers have sold Fonterra shares to free up cash. Many farmers are likely to take up the Fonterra Co-operative loan. The ability of farmers to take on new debt depends on banks' willingness to lend, and an individual farmer's financial situation.

Contacts also note that many farmers are having to reduce their costs. While the ability to cut costs differs across farmers, all will be considering the effects of changes on future milk production. Our business contacts noted a typical sequence of responses to lower cash flow is as follows.

1. Reduce drawings.
2. Delay capital expenditure until dairy prices rise: get items repaired or hire contractors to do work, and put off large investments.
3. Opt for cheaper feed, e.g. pasture or supplementary feeds such as palm kernel, instead of more expensive mixed-compound feeds.
4. For farm owners, reduce labour costs by: returning to on-farm work; not increasing wages; and starting new workers on lower wages.
5. Increase cow culling, particularly of underperforming cows.
6. Increase technical testing to determine the most cost effective use of essential products such as fertiliser.
7. Reduce spending on artificial insemination, and milk once a day.

Contacts note that confidence in different areas of agriculture production tends to move in sync with confidence in the dairy industry. Sheep and beef farmers supply feed and grazing land to dairy farmers, and many have invested in dairy farms. Increased cow culling by dairy farmers reduces prices received for beef. Reduced demand for domestic feed from dairy farmers is also affecting the arable industry. Contacts noted that some offset may come from the depreciation in the exchange rate, supporting agricultural exporters' incomes. It was also noted that rural suppliers may reduce prices in response to weaker demand from the dairy industry.

Chapter 5

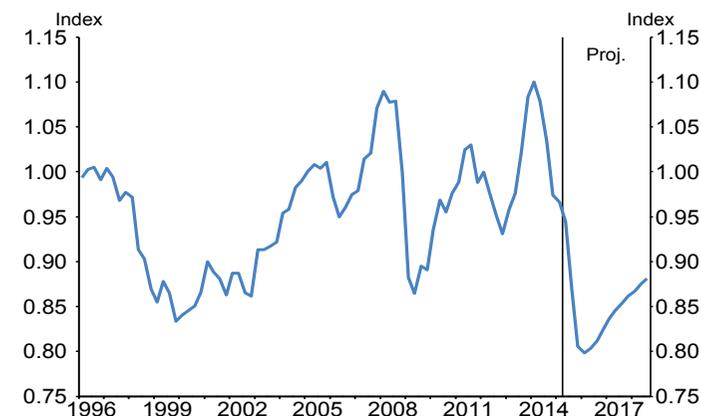
The macroeconomic outlook



Global financial market volatility and weaker trading partner growth are weighing on the outlook for the New Zealand economy. The outlook for domestic demand and inflationary pressures is weaker as a result. Further easing in monetary conditions, via a lower New Zealand dollar exchange rate and lower interest rates, is consistent with domestic demand recovering and inflation settling around 2 percent over the medium term.

The weaker global economic outlook affects New Zealand through a number of channels, including through lower export prices and a lower exchange rate. As noted in chapter 4, export prices have fallen sharply since the start of 2014. Looking ahead, export prices are expected to pick up only gradually over the latter half of the projection (figure 5.1). Underlying this slow recovery is continued growth in global dairy production, together with the softer demand outlook (see chapter 3).

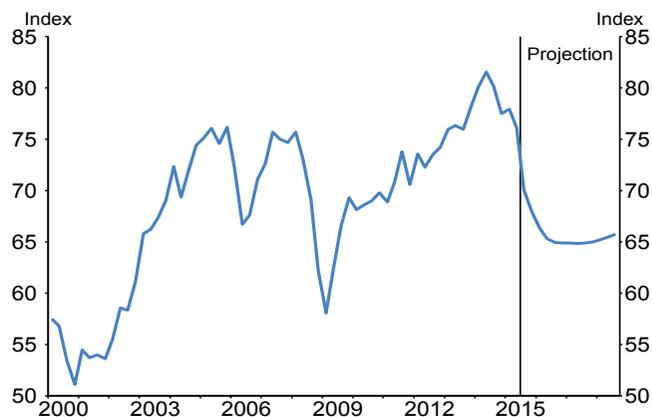
Figure 5.1
Real export prices



Source: Statistics New Zealand, RBNZ estimates.

Note: World terms, s.a.

**Figure 5.2
New Zealand
dollar TWI**



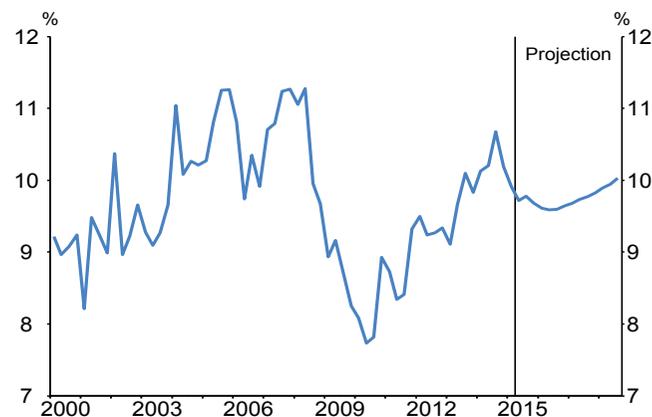
Source: RBNZ estimates.

The New Zealand dollar TWI has declined 13 percent since the start of 2015. Global uncertainty, low export prices and a lower outlook for domestic interest rates mean that the New Zealand dollar TWI is assumed to depreciate further – to 65 – and remain around that level for the remainder of the projection (figure 5.2).

Lower projected export receipts are a key reason for the softer outlook for domestic demand. Soft rural spending and cuts to on-farm investment contribute to business investment falling as a share of potential output (figure 5.3). Weaker demand throughout the rest of the economy, as well as increased import costs from the lower exchange rate, are also weighing on the investment outlook.

Although rural consumption is expected to be subdued, households in the wider economy are generally expected to maintain their level of spending, as they have in previous export-price cycles. Low interest rates, the strong net inflow of migrants and related strength in the housing market, and low world oil prices are expected to support

**Figure 5.3
Core business
investment**



Source: Statistics New Zealand, RBNZ estimates.

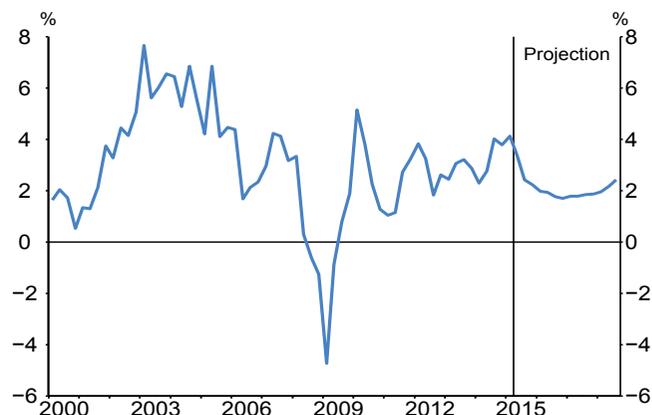
Note: s.a., percentage of potential output. Core business investment excludes the trending components of total business investment, i.e. data processing equipment (computers) and intangible assets.

consumption. Overall, annual consumption growth is forecast to slow to around 2 percent, and remain around this rate throughout the projection (figure 5.4). One of the risks to this projection is that households pull back their consumption more, which could happen if they expect export prices to remain low for a longer period of time.

The lower exchange rate improves the outlook for net exports, partly offsetting the fall in domestic demand. The lower exchange rate will help offset the impact of lower international dairy prices by supporting New Zealand dollar export receipts. The tourism sector is also expected to benefit from increased tourist spending because of the lower exchange rate.

On the import side, the lower exchange rate causes some substitution away from imports to domestic production. Together with the weaker outlook for business investment – which tends to be import-intensive – the lower exchange rate means that import volumes are expected to fall

Figure 5.4
Consumption
growth
(annual)

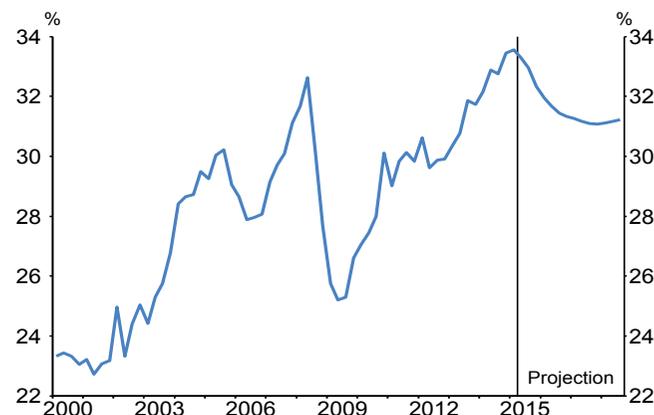


Source: Statistics New Zealand, RBNZ estimates.

as a share of output (figure 5.5). The current account deficit grows to around 6 percent of nominal GDP, as household consumption continues to grow despite the fall in income driven by the lower terms of trade.

The Canterbury rebuild is expected to continue supporting domestic activity, but by less than previously assumed. The total cost of rebuild-related construction in Canterbury has been updated since the June *Statement* based on information from a range of sources, including the Canterbury Earthquake Recovery Authority (CERA). These updated projections incorporate almost \$40 billion (2015 dollars) of construction spending in total – implying that about \$5 billion (2015 dollars) less work is still to come than assumed in the June *Statement*. Residential construction in Canterbury is assumed to have plateaued in early 2015, a year earlier and at a lower level than previously expected. Less commercial construction in Canterbury is also expected than previously assumed over the projection, although this is partly offset by a greater amount of infrastructure construction.

Figure 5.5
Import
volumes



Source: Statistics New Zealand, RBNZ estimates.

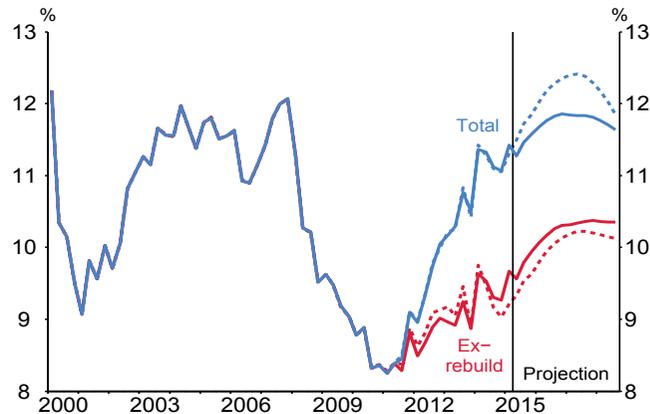
Note: s.a., percentage of potential output.

Nationwide construction spending is projected to remain historically elevated. However, due to less rebuild-related construction, nationwide construction spending is expected to peak around 1 percent of potential output lower than in the June *Statement* (figure 5.6). Population growth – especially through net immigration – continues to increase demand for housing and contribute to a housing shortage, most notably in Auckland.

Construction spending outside Canterbury is expected to continue to increase as a share of potential output, driven by growing residential construction in Auckland. House price inflation is forecast to slow as more houses become available and as net immigration declines.

The high level of net immigration and high labour force participation are increasing the potential output of the New Zealand economy, supporting near-term output growth. As a result, annual GDP growth is expected to remain around 2 percent in the near term despite the weaker outlook for demand (figure 5.7). Potential output growth is forecast to slow slightly over the projection as net immigration declines.

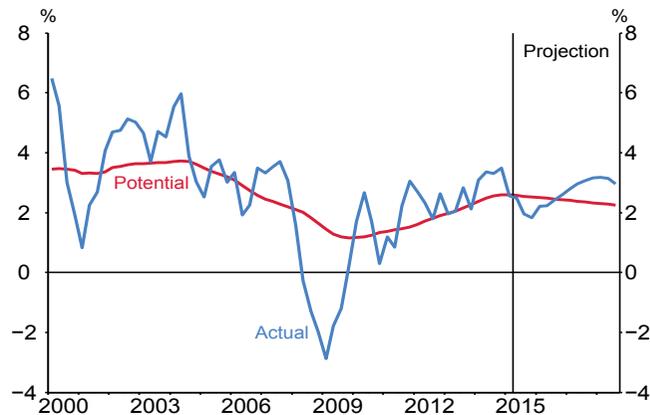
Figure 5.6
Construction spending



Source: Statistics New Zealand, RBNZ estimates.

Note: s.a., percentage of potential output. Solid lines indicate the September MPS projections, dashed lines indicate the June MPS projections.

Figure 5.7
GDP growth (annual)

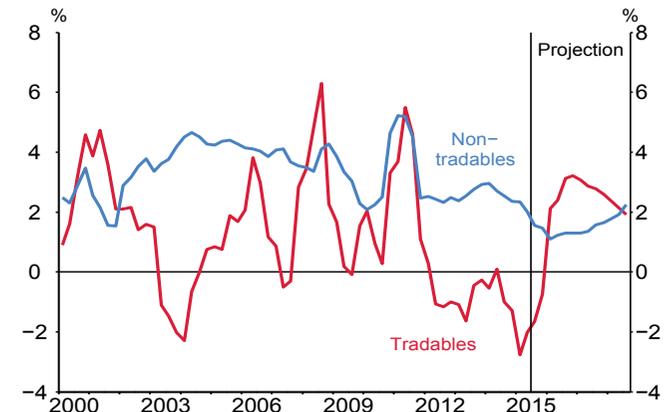


Source: Statistics New Zealand, RBNZ estimates.

The outlook for domestic inflationary pressures is softer due to the weaker growth outlook, together with strong potential output growth. As discussed in chapter 4, capacity pressures are estimated to have decreased over the first half of 2015. The output gap is projected to remain negative over the next year and the unemployment rate to remain around 6 percent. Reflecting spare capacity in the labour market and low CPI inflation, nominal wage increases are forecast to remain modest.

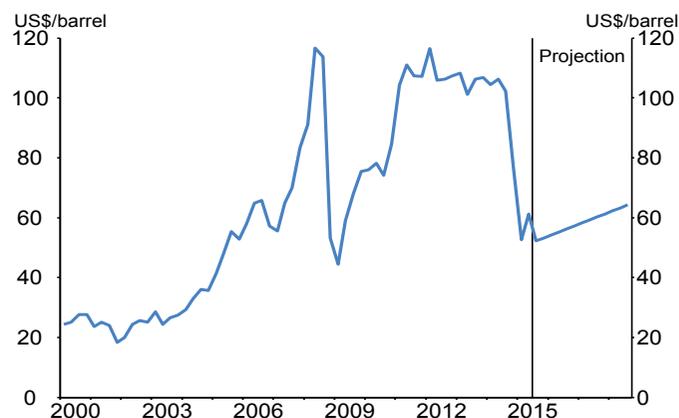
Annual non-tradables inflation is forecast to fall below 1.5 percent in late 2015, although part of this decline is due to one-off factors such as ACC motor vehicle levy reductions. Additional stimulus from lower interest rates and the lower exchange rate are expected to support a recovery in domestic demand growth from 2016, causing an increase in capacity pressures over the medium term. Non-tradables inflation is forecast to rise to around 2 percent in 2018 (figure 5.8). Even with this recovery, non-tradables inflation remains below its historical average at the end of the projection.

Figure 5.8
CPI inflation components (annual)



Source: Statistics New Zealand, RBNZ estimates.

**Figure 5.9
Dubai oil price**



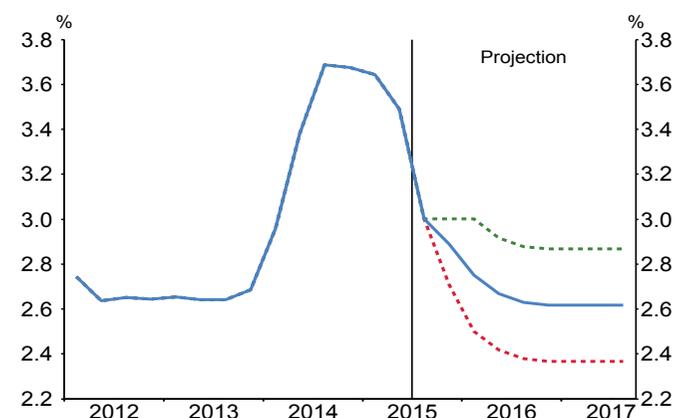
Source: Reuters, RBNZ estimates.

The Dubai oil price is projected to gradually increase from around USD 50 per barrel currently to slightly above USD 60 by mid-2018 (figure 5.9). Non-oil import prices are also projected to remain low, due to weaker global demand.

Tradables inflation is forecast to rise above 2 percent in early 2016, due to the depreciation in the exchange rate and earlier petrol price declines dropping out of the annual rate (figure 5.8). Tradables inflation peaks at around 3 percent at the end of 2016 and then gradually declines towards 2 percent over the remainder of the projection. Box C discusses the contribution of fuel and the exchange rate to the sharp pick-up in tradables inflation in 2016.

The weaker outlook for domestic inflationary pressures means further monetary policy stimulus is required to support domestic demand. Figure 5.10 shows the central path for the 90-day interest rate, and paths that are 25 basis points above and below the central path. The related

**Figure 5.10
90-day interest rate**



Source: RBNZ estimates.

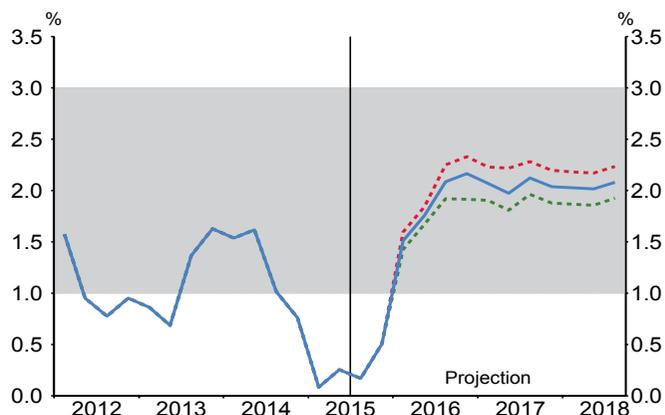
inflation and output gap forecasts are shown in figures 5.11 and 5.12, assuming inflationary pressures are otherwise unchanged.

In all of the scenarios, the rise in tradables inflation in the near term drives CPI inflation into the 1 to 3 percent target range in the first quarter of 2016 (figure 5.11). The outlooks for CPI inflation diverge from the middle of 2016. The lower interest rate path causes inflation to rise to 2.3 percent, whereas the higher interest rate path results in CPI inflation settling slightly below 2 percent.

The speed and strength of the recovery in output also depends on the policy response. In the lower interest rate scenario, GDP growth recovers to around 2.5 percent by the end of 2016, whereas in the higher interest rate scenario GDP growth remains close to 2 percent (figure 5.12).

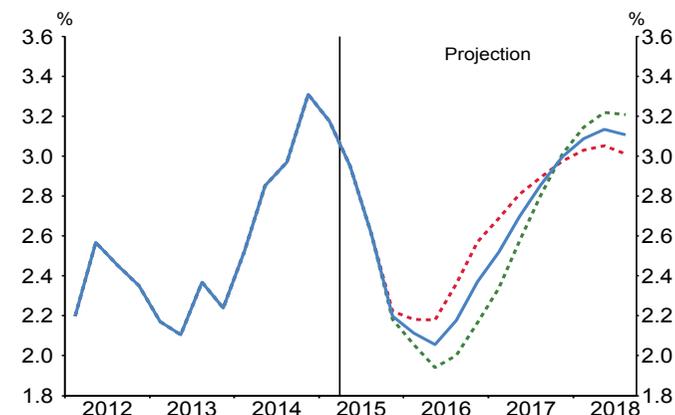
The lower interest rate path generates a faster recovery in GDP growth and results in inflation settling slightly above 2 percent over the medium

Figure 5.11
CPI inflation
(annual)



Source: Statistics New Zealand, RBNZ estimates.

Figure 5.12
GDP growth
(annual average)



Source: Statistics New Zealand, RBNZ estimates.

term. The higher interest rate path results in a slower recovery in GDP growth, and inflation remains close to 2 percent over the medium term.

As well as forming a central projection, accounting for the inherent uncertainty around key assumptions is necessary when setting monetary policy. Cyclical movements around medium-term trends are useful for forecasting inflation but are difficult to estimate precisely at any given time, because the trends are unobservable. The output gap, which is useful for forecasting non-tradables inflation, relies on an estimate of potential output that is unobservable and prone to being revised. These projections rely on a range of other trends, many of which are also uncertain – especially around turning points. The current decline in dairy prices has lasted 27 months, longer than the average decline over history (17 months). Whether this dairy price decline is a cyclical change, as assumed in the projections, or a more permanent change is uncertain.

The uncertainty regarding key assumptions, such as the level of potential output and the long-term trend for export prices, is a key consideration

in monetary policy decisions, but is hard to account for in a central projection. Reflecting this uncertainty, the Bank watches developments – both in the data themselves and in forecast errors – for signs of changes in trends. These assumptions are regularly reviewed and updated as the Bank draws on new information about the state of the economy.

Box C

What drives the pick-up in tradables inflation?

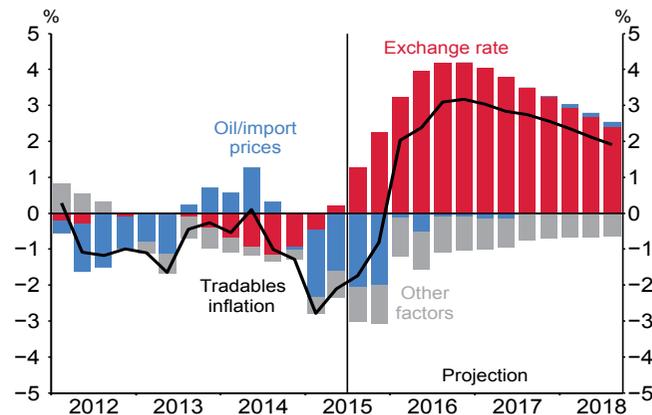
Tradables inflation is projected to increase sharply over the first part of the projection, from an annual rate of -2 percent in the June quarter this year to 2.4 percent a year later. This projected increase adds 1.9 percentage points to annual CPI inflation.

Much of the pick-up in tradables inflation reflects past and expected movements in two variables: the exchange rate and the world price of oil.

exchange rate to tradables prices will add around 3.5 percentage points to tradables inflation over the next year, represented by the red in figure C.1. The Bank estimates that much of the fall in the exchange rate is due to lower export prices.

Global oil prices directly affect the price consumers pay for petrol at the pump, as well as the cost of fuel-intensive imports and transport. In the first quarter of 2015, national average petrol prices dropped sharply to \$1.87 per litre. This directly subtracted 1.3 percentage points from tradables inflation in the quarter, which will weigh on the annual rate of inflation until the end of 2015. From the start of 2016, this fall in petrol prices drops out of the annual inflation rate and tradables inflation will mechanically increase.

Figure C.1
Drivers of tradables inflation
(annual)



Source: Statistics New Zealand, RBNZ estimates.

Note: The underlying drivers are estimated using the Reserve Bank's structural forecasting model, NZSIM.

The New Zealand dollar TWI is projected to fall to 65 by mid-2016, from an average of 76 during the June 2015 quarter and a peak of 80 in April. This increases tradables inflation by raising the New Zealand dollar price of imports. Based on past experience, the normal pass-through from the

Box D

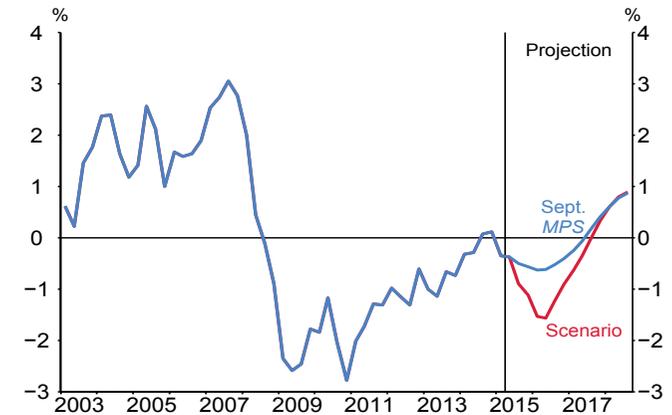
Global economic conditions and the outlook for monetary policy

The outlook for domestic GDP growth and inflationary pressures has softened over the past few months. To a large extent, this has reflected a weaker outlook for economic growth in some of New Zealand's key trading partners. Although financial market volatility has increased in recent weeks, at this stage a sharp deterioration in global economic conditions appears unlikely. However, if global economic conditions weaken further, there could be material implications for domestic economic activity and monetary policy.

Weaker global economic conditions would reduce demand for New Zealand's exports, resulting in a more prolonged period of low export commodity prices and lower export volumes. Business and consumer confidence would decline further. In addition, global financial markets may become disrupted as risk aversion increases. One alternative scenario to the central projection is that global economic conditions deteriorate further and, as a result, domestic GDP growth slows sharply and capacity pressures in New Zealand decline (figure D.1).

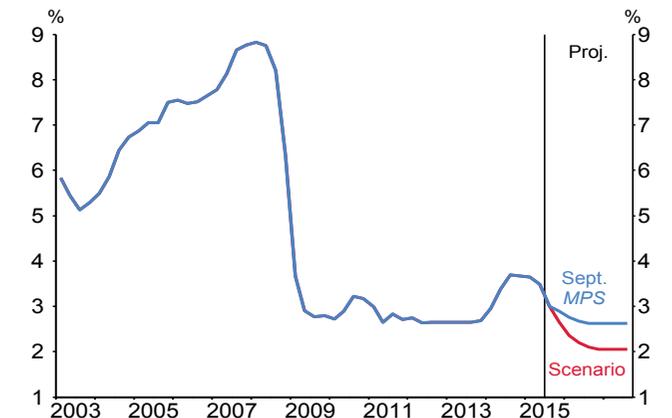
Compared to the central projection, the weaker outlook for domestic capacity pressure would result in a softer outlook for domestic inflation. As such, further monetary policy stimulus would be necessary (figure D.2). In this scenario, the 90-day interest rate declines to around 2 percent over the next year. As global economic conditions stabilise, and as more-stimulatory interest rates and an accompanying depreciation in the exchange rate begin to support domestic demand, GDP growth rebounds sharply.

Figure D.1
Output gap
(percent of potential output)



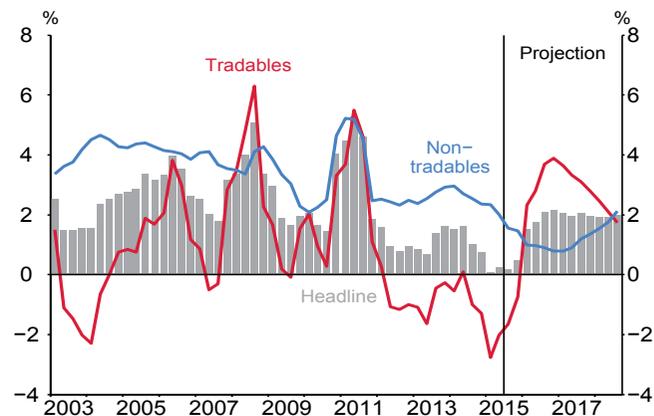
Source: RBNZ estimates.

Figure D.2
90-day
interest rate



Source: RBNZ estimates.

Figure D.3
Inflation
(annual)



Source: Statistics New Zealand, RBNZ estimates.

In this scenario, non-tradables inflation declines sharply over the next year in response to weaker capacity pressures (figure D.3). This is offset by higher tradables inflation in the near term, as the exchange rate depreciates further. By the end of the projection, easier monetary conditions drive an increase in the output gap, boosting non-tradables inflation. As a result, CPI inflation would settle around 2 percent.

Appendices

Appendix A¹

Summary tables



Table A

Projections of GDP growth, CPI inflation, and monetary conditions

(CPI and GDP are percent changes, GDP seasonally adjusted)

		GDP Quarterly	CPI Quarterly	CPI Annual	TWI	90-day bank bill rate
2013	Mar	0.1	0.4	0.9	75.9	2.7
	Jun	0.4	0.2	0.7	76.3	2.6
	Sep	1.1	0.9	1.4	75.9	2.6
	Dec	0.5	0.1	1.6	78.2	2.7
2014	Mar	1.1	0.3	1.5	80.1	3.0
	Jun	0.7	0.3	1.6	81.5	3.4
	Sep	1.0	0.3	1.0	80.1	3.7
	Dec	0.7	-0.2	0.8	77.5	3.7
2015	Mar	0.2	-0.3	0.1	77.9	3.6
	Jun	0.6	0.4	0.3	76.1	3.5
	Sep	0.5	0.3	0.2	70.0	3.0
	Dec	0.6	0.2	0.5	67.9	2.9
2016	Mar	0.5	0.7	1.5	66.3	2.8
	Jun	0.6	0.7	1.8	65.3	2.7
	Sep	0.7	0.6	2.1	64.9	2.6
	Dec	0.7	0.2	2.2	64.9	2.6
2017	Mar	0.7	0.6	2.1	64.9	2.6
	Jun	0.8	0.6	2.0	64.8	2.6
	Sep	0.8	0.7	2.1	64.9	2.6

¹ Notes for these tables are published with the background data at http://www.rbnz.govt.nz/monetary_policy/monetary_policy_statement/2015/mpssep15-data.xlsx

Table B

Measures of inflation, inflationary pressures, and asset prices

	2013		2014				2015	
	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep
Inflation (annual rates)								
CPI	1.6	1.5	1.6	1.0	0.8	0.1	0.3	
CPI non-tradables	2.9	3.0	2.7	2.5	2.4	2.3	2.0	
CPI tradables	-0.3	-0.6	0.1	-1.0	-1.3	-2.8	-2.0	
Sectoral factor model estimate of core inflation	1.4	1.4	1.4	1.4	1.3	1.3	1.3	
CPI trimmed mean	1.6	1.5	1.7	1.0	0.7	0.2	0.3	
CPI weighted median	2.0	1.7	2.2	1.7	1.5	1.6	1.2	
GDP deflator	7.7	5.5	4.5	1.2	-2.1	-0.8		
Inflation expectations								
RBNZ survey of expectations - inflation two years ahead	2.3	2.3	2.4	2.2	2.1	1.8	1.9	1.9
ANZ Bank Business Outlook - inflation one year ahead (quarterly average to date)	2.4	2.6	2.6	2.5	2.3	1.7	1.7	1.7
AON Hewitt Economist Survey - inflation four years ahead	2.3	2.2	2.3	2.2	2.2	2.1	2.1	2.2
AON Hewitt Economist Survey - inflation seven years ahead	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Pricing and costs (net balances)								
ANZ Bank Business Outlook - Pricing intentions, next three months (quarterly average to date)	26.0	31.6	27.5	22.8	21.5	25.9	23.1	19.2
QSBO Average selling prices, next three months	23.3	37.2	33.3	29.5	11.0	6.3	6.8	
QSBO Average costs, past three months	21.2	19.0	19.9	21.7	23.8	18.0	16.9	
Asset prices (annual percentage changes)								
Quarterly house price index (CoreLogic)	9.2	8.0	6.9	4.8	6.3	8.3		
REINZ Farm Price Index (quarterly average to date)	5.7	9.0	15.3	3.7	1.2	2.0	2.1	5.7
NZX 50 (quarterly average to date)	20.6	16.5	14.6	12.7	12.7	16.6	12.7	11.1

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

March year	Actuals								Projections		
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Final consumption expenditure											
Private	3.7	-1.6	1.7	2.1	2.7	2.5	2.8	3.7	2.5	1.8	1.9
Public authority	4.7	4.0	-0.5	2.0	1.5	-0.6	2.7	3.0	0.6	0.3	2.5
Total	4.0	-0.2	1.1	2.0	2.4	1.7	2.8	3.5	2.0	1.4	2.0
Gross fixed capital formation											
Residential	1.8	-21.2	-9.0	1.6	-0.2	17.7	16.6	12.3	8.5	5.6	1.4
Other	10.0	-2.6	-9.3	3.8	7.1	4.4	8.6	4.8	-0.8	2.2	5.5
Total	7.7	-7.5	-9.2	3.3	5.5	7.1	10.4	6.6	1.6	3.1	4.4
Final domestic expenditure	4.8	-2.0	-1.2	2.3	3.1	2.9	4.5	4.2	1.9	1.8	2.6
Stockbuilding ¹	0.8	-0.3	-0.7	0.7	0.3	-0.4	0.2	0.2	-0.1	0.0	-0.0
Gross national expenditure	5.6	-2.3	-1.6	3.0	3.5	2.4	4.8	4.5	1.8	1.8	2.6
Exports of goods and services	3.9	-2.8	4.1	2.8	2.3	3.1	0.2	3.9	3.0	0.5	2.9
Imports of goods and services	10.9	-3.6	-9.2	11.4	6.7	1.3	8.0	7.5	0.9	-1.3	1.3
Expenditure on GDP	3.6	-2.1	2.3	0.7	2.2	2.9	2.4	3.3	2.4	2.5	3.1
GDP (production)	3.0	-1.6	-0.3	1.5	2.2	2.2	2.5	3.2	2.1	2.5	3.1
GDP (production, March qtr to March qtr)	1.6	-2.9	1.7	1.2	2.7	1.9	3.1	2.6	2.2	2.8	3.2

¹ Percentage point contribution to the growth rate of GDP.

Table D

Summary of economic projections

(annual percent change, unless specified otherwise)

March year	Actuals								Projections		
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Price measures											
CPI	3.4	3.0	2.0	4.5	1.6	0.9	1.5	0.1	1.5	2.1	2.0
Labour costs	3.5	3.1	1.3	2.0	2.1	1.8	1.7	1.8	1.9	1.8	2.1
Export prices (in New Zealand dollars)	11.3	7.2	-7.7	7.8	-2.8	-5.0	11.3	-8.8	-0.9	9.5	5.6
Import prices (in New Zealand dollars)	0.1	17.4	-11.1	3.4	-1.8	-4.1	-3.3	-3.6	17.4	3.8	1.5
Monetary conditions											
90-day rate (year average)	8.6	6.7	2.8	3.1	2.7	2.6	2.7	3.6	3.0	2.6	
TWI (year average)	75.2	65.6	66.6	69.0	72.2	74.0	77.6	79.3	70.1	65.0	65.0
Output											
GDP (production, annual average % change)	3.0	-1.6	-0.3	1.5	2.2	2.2	2.5	3.2	2.1	2.5	3.1
Potential output (annual average % change)	2.2	1.7	1.2	1.3	1.5	1.8	2.2	2.6	2.5	2.4	2.3
Output gap (% of potential GDP, year average)	2.6	-0.7	-2.2	-2.0	-1.3	-1.0	-0.7	-0.1	-0.5	-0.4	0.3
Labour market											
Total employment (seasonally adjusted)	1.1	-1.2	-0.4	1.6	0.6	0.2	3.7	3.2	1.4	1.5	1.9
Unemployment rate (March qtr, seasonally adjusted)	3.8	5.2	6.2	6.6	6.8	6.3	6.0	5.8	6.1	5.9	5.4
Trend labour productivity	1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.6	0.6	0.7	0.8
Key balances											
Government operating balance (% of GDP, year to June)	3.0	-2.1	-3.3	-9.1	-4.4	-2.1	-1.3	-0.3	-0.8	-0.4	0.0
Current account balance (% of GDP)	-6.7	-7.1	-1.5	-2.8	-3.2	-3.7	-2.6	-3.7	-6.1	-6.9	-5.0
Terms of trade (SNA measure, annual average % change)	8.5	-1.9	-4.5	7.9	1.6	-4.3	11.7	-0.1	-10.6	-3.5	5.1
Household saving rate (% of disposable income)	-1.5	-1.3	0.9	2.7	1.5	2.3	2.1	3.2	1.7	1.6	2.8
World economy											
Trading partner GDP (annual average % change)	4.2	0.3	1.2	4.5	3.5	3.2	3.5	3.6	3.6	3.9	3.8
Trading partner CPI (TWI weighted, annual % change)	4.2	1.6	2.2	3.2	2.7	2.3	2.3	1.0	2.1	2.2	2.4

Appendix B

Outreach

Companies and organisations contacted by Reserve Bank staff during the projection round

Agribusiness Personnel Ltd
Agrifirst
Auckland Council
Baker and Associates (Wairarapa) Ltd
Canterbury Development Corporation
CNS Treasury Ltd
CooperAitken Ltd
Croys Ltd
Corelogic NZ Ltd
CRS Software Ltd
Dairy NZ
Disprose Miller Ltd
Farm Forward
Farmlands Co-operative
Farmwise
Federated Farmers Christchurch
Federated Farmers Waikato
Fonterra Co-operative Group Ltd
Ganellen Construction Ltd
Grow Mid Canterbury
Humphries Construction
HW Richardson Group Ltd
IAG NZ Ltd

Infometrics
Johnston O'Shea
Registered Master Builders Association of New Zealand Inc
Meat Industry Association of New Zealand
Mike Greer Homes NZ Ltd
Naylor Love Construction Ltd
Ngai Tahu Property Ltd
NZ Institute of Architects
New Zealand Institute of Economic Research
Palmerston North City Council
Port Taranaki Ltd
Ravensdown Fertiliser Insurance Company Ltd
Southland Building Society
Southland District Council
Spark Telecom Ltd
Tatua Co-operative Dairy Company Ltd
Taylor Preston Ltd
The George Hotel
TSB
University of Waikato
Veda Advantage (NZ) Ltd
Villa Maria Estate Ltd
Waikato Milking Systems U.S.A. Ltd
Westpac Banking Corporation
Yunca Group

Presentations June-August 2015

The Bank presented on monetary policy and related topics to the following sectors and regions:

Business groups (5)	Auckland, Wellington, Dunedin
Agriculture (2)	Wellington
Universities (4)	Auckland, Christchurch, Dunedin
Manufacturers and exporters	Auckland
Export development	Tauranga
Economic development	Taupo
Secondary teachers association	Auckland
International finance, investors (3)	London

The Bank also speaks to a range of sectors on financial stability and related topics. They will be reported in the November *Financial Stability Report*.

Appendix C

Upcoming Reserve Bank *Monetary Policy*

Statements and Official Cash Rate releases

The Reserve Bank reserves the right to make changes, if required, due to unexpected developments. In that unlikely event, markets and media would be given as much warning as possible. Announcements are made at 9.00am on the day concerned and posted to the website shortly after. *MPS* releases are associated with a media conference and webcast.

2015

29 October 2015	OCR
10 December 2015	OCR and <i>MPS</i>

2016

28 January 2016	OCR
10 March 2016	OCR and <i>MPS</i>
28 April 2016	OCR
9 June 2016	OCR and <i>MPS</i>
11 August 2016	OCR and <i>MPS</i>
22 September 2016	OCR
10 November 2016	OCR and <i>MPS</i>

Appendix D

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