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## Reserve Bank of New Zealand *Bulletin*

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# Business cycle review: 2008 to present day

Rebecca Williams<sup>1</sup>



Following the global financial crisis, spare capacity in the global economy has persisted much longer than in past expansions despite extremely accommodative monetary policy settings in advanced economies. New Zealand has not been immune to these developments – GDP growth here has also been more subdued than in typical expansions, in large part due to weakness and uncertainty abroad. Against this international and domestic backdrop, consumer price inflation in New Zealand has been low, and lower than the Reserve Bank of New Zealand and other forecasters initially anticipated – particularly since 2014.

This article summarises developments in the New Zealand economy since 2008 through the lens of monetary policy, and identifies five key phases. A subsequent article will present some of the key features of this cycle, and the insights for monetary policy that have emerged or been reinforced.

## 1 Introduction

The persistence of spare capacity in the global economy following the global financial crisis (GFC) – the worst economic crisis since the Great Depression – has surprised policymakers around the world. Despite extremely accommodative monetary policy settings, growth in major advanced economies has proved to be slower than in past expansions. Growth in New Zealand has also been much weaker than in past expansions (figure 1).<sup>2,3</sup>

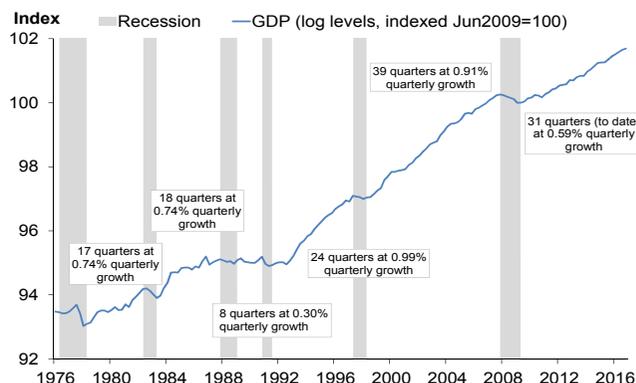
Against the backdrop of surprisingly weak global growth, Consumer Price Index (CPI) inflation in New Zealand has been lower than the Reserve Bank of New Zealand (the Bank) and other forecasters had expected, particularly since 2014. The persistently elevated exchange rate, weak global inflation and falls in commodity prices have dampened tradables

<sup>1</sup> This *Bulletin* was prepared with involvement from the New Zealand Treasury. The author would like to thank those at the Reserve Bank of New Zealand and the New Zealand Treasury who contributed to discussion and gave feedback on drafts.

<sup>2</sup> Brook, Collins and Smith (1998) review the 1991-97 business cycle and Orr and Drew (1999) discuss the Reserve Bank's role over that period. Chetwin (2012) reviews the period 1998-2011 that includes the business cycle immediately before the crisis. Chetwin and Reddell (2012) provide additional discussion of the role of monetary policy in the previous cycle.

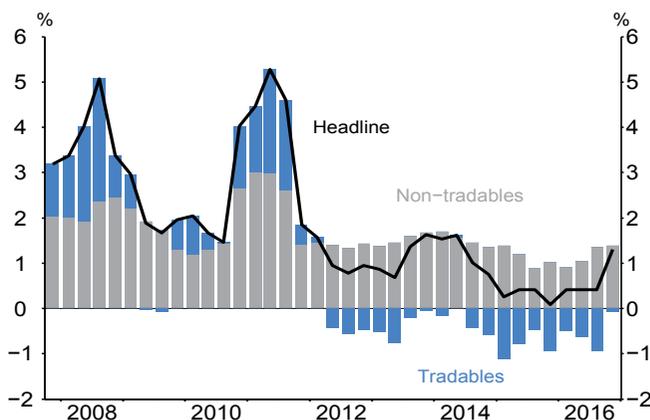
<sup>3</sup> See Hall and McDermott (2016) for a full discussion of GDP expansions in New Zealand since the Second World War. Reddell and Sleeman (2008) provide some perspectives on the key features of New Zealand recessions between the Great Depression and the late-1990s.

**Figure 1  
Real GDP over  
New Zealand  
business  
cycles**



Source: Statistics New Zealand, Hall and McDermott (2016), RBNZ estimates. Recessions are defined using the classical business cycles identified in Hall and McDermott (2016). This method also indicates that the current expansion began in the second quarter of 2009.

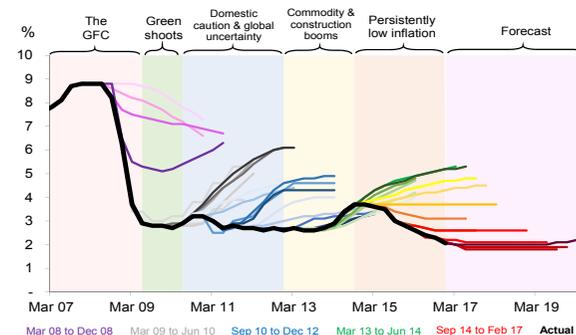
**Figure 2  
Contributions  
to annual CPI  
inflation**



Source: Statistics New Zealand.

inflation. Non-tradables inflation has also been subdued (figure 2), despite stimulatory monetary policy in New Zealand. In part, the decline in non-tradables inflation since 2014 appears to reflect the dampening effect of persistently negative tradables inflation on inflation expectations (and therefore wage- and price-setting behaviour).

**Figure 3  
Reserve  
Bank 90-day  
interest rate  
projections**



Source: RBNZ. Note that the projections from the November 2016 and February 2017 *Statements* are scaled OCR projections.

This narrative of the current business cycle has been structured from the perspective of monetary policy (figure 3). The lending rates that matter for firms' and households' mortgage and saving rates are driven by not just today's Official Cash Rate (OCR) but also by the expected future path of short-term interest rates. There are many times when the monetary policy outlook changed significantly despite there being no change in the OCR. The phases identified within this narrative are therefore defined by when the outlook for monetary policy – the forecast 90-day interest rate track published in the *Monetary Policy Statement* – has shifted direction (began being revised higher or lower).<sup>4</sup> While the current expansion is estimated to have begun in the second quarter of 2009, the GFC has been included in this review to provide some context to the economic developments that have since occurred.

<sup>4</sup> The Bank began publishing the projected OCR instead of the 90-day interest rate from the November 2016 *Monetary Policy Statement*. Publishing the OCR instead of the 90-day interest rate brought the Bank into line with the practice of other central banks and is viewed by the Bank as being a more transparent way of presenting the expected policy actions needed to achieve its inflation target.

Using this approach, the phases identified in this review are:

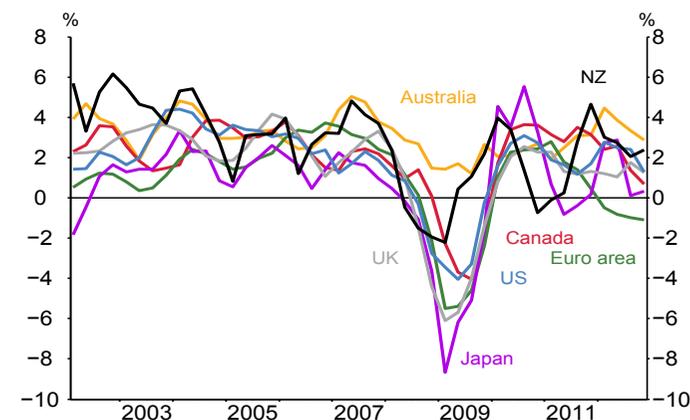
- The global financial crisis (2008-09).
- ‘Green shoots’ recovery (mid-2009 to mid-2010).
- Domestic caution and global uncertainty (mid-2010 to late-2012);
- The commodity boom and construction upswing (early 2013 to mid-2014).
- Persistently low inflation (mid-2014 to present day).

A subsequent article will utilise this review to outline the key features of the current business cycle, including ways in which the structure of the economy appears different from previous cycles. It will also present some ‘lessons’ for monetary policy that have emerged or been reemphasised during the current cycle.

## 2 The global financial crisis of 2008-09

The GFC triggered the worst economic downturn since the Great Depression. As the trust between large financial market players declined, bank funding grew more expensive and market volatility increased. Financial market uncertainty had contractionary effects on economic activity, and many advanced economies around the world entered recession (figure 4).

**Figure 4**  
Annual  
expenditure  
GDP growth  
in selected  
countries



Source: Haver Analytics, Statistics New Zealand.

The apparent origins of the crisis and how it unfolded have already been presented in numerous Bank publications and speeches (see, for example, Bollard and Ng (2012), Davies (2009), Bollard (2007) and Chetwin (2012)). This business cycle review will focus on New Zealand’s policy responses to the crisis: monetary, fiscal and otherwise.

### 2.1 *Monetary policy responds, despite high headline inflation*

The strength in demand and associated inflationary pressures in New Zealand before the crisis had driven nominal interest rates to a level higher than that of many other advanced economies. The Reserve Bank therefore had significant scope to reduce nominal interest rates in the face of deteriorating global conditions. Despite annual headline CPI inflation being driven well above the target band by higher oil prices over 2008, the flexibility and forward-looking nature of monetary policy in New Zealand meant that the Bank was able to reduce the OCR by 575 basis points between June 2008 and June 2009 (figure 3, page 4). This easing

in monetary policy helped to support the New Zealand economy at a time of global distress.

Despite the crisis-related increase in international bank funding spreads, domestic interest rates that households and businesses faced fell. In addition, high actual inflation and relatively high inflation expectations implied that real interest rates were very low compared to what the Bank then regarded as the neutral interest rate. By these metrics, monetary policy appeared very stimulatory. The easing of policy was also supported by the fact that the problems in the core banking system were mild compared to elsewhere in the world. Banks in New Zealand and Australia had relatively sound bank capital structures and were not exposed to mortgage-backed securities that had grown in popularity elsewhere prior to the crisis.

Although the OCR started being reduced in July 2008 in response to the deteriorating global outlook, domestic conditions were starting to weaken before the crisis. The New Zealand housing market had already begun to turn – due at least in part to high mortgage interest rates – and drought had affected growth through the 2007/08 summer.

## 2.2 *Fiscal policy provides additional support in the crisis period*

Fiscal policy also played a significant role in supporting the New Zealand economy during the crisis period, although understanding its role requires some context. In the early 2000s, the Government's fiscal strategy was to increase operating surpluses to a level sufficient to reduce the debt-to-GDP ratio and accumulate assets in the New Zealand Superannuation Fund. Initially, this strategy was achieved by managing growth in public expenditure. However, by the mid-2000s tax revenues

were consistently higher than forecast, reflecting stronger-than-expected economic growth, and the surplus increased quickly.<sup>5</sup>

Much of the stronger-than-expected tax revenues were used to strengthen the fiscal balance sheet, with the debt-to-GDP ratio declining faster than expected. At the time, much of the surplus was believed to be structural – representing stronger sustained growth in New Zealand's productive capacity – and there was growing pressure to reduce the level of surpluses. The Government increased new spending in *Budgets* 2004 to 2008. The Government also reduced the corporate tax rate in 2007 and announced a significant package of personal tax rate reductions in *Budget 2008*. These tax reductions were introduced as the economy began slowing but before it was known that the economy was in recession, and before the onset of the GFC. At the time, the Treasury was still expecting the operating balance to remain in surplus through the forecast period, albeit at a lower level.

With the benefit of hindsight, the degree to which the surpluses were structural was overestimated.<sup>6</sup> The tax reductions announced in 2008 were timely from the perspective of stabilising the economy after the GFC. However, the permanent nature of the tax reductions added to the subsequent structural deficits. Nevertheless, the strengthening of the balance sheet through the mid-2000s meant that there was a large fiscal buffer that would help manage the shocks that were to come.

In late 2008 the newly elected Government announced a fiscally-neutral package to implement its pre-election commitments. In particular, an additional round of personal tax reductions, which took effect on 1 April 2009, was broadly offset by a reduction in KiwiSaver subsidies and the

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5 See Mears, Blick, Hampton and Janssen (2010).

6 See Bose, Philip and Sullivan (2016).

removal of R&D tax credits. The Government also brought forward some infrastructure spending on school property, roads and housing projects, and increased the planned level of capital spending to be announced over the next few *Budgets*.

While the December 2008 announcements had focused on supporting the economy through the downturn, *Budget 2009* announced several measures to consolidate the fiscal position. These measures, designed to take effect once the economy started to recover, included: (1) postponement of the second and third tranches of personal tax reductions (2) a reduction in forecast new operating allowances for all future *Budgets*, and (3) suspension of contributions to the New Zealand Superannuation Fund until sufficient surpluses had been achieved.

### 2.3 Other policy responses

The aftermath of the GFC also saw the introduction of additional instruments – particularly in the area of prudential regulation – to the policy-maker’s toolkit in New Zealand. The crisis had placed a great deal of pressure on international funding markets. During the crisis, the maturity mismatch of New Zealand banks – borrowing at short-dated maturities on the global market to fund lending domestically at longer maturities – was considered a key risk to financial stability, particularly as liquidity at shorter durations dried up.

To reduce the financial stability risk from this maturity mismatch, the Bank introduced a new Liquidity Policy in 2010. This policy set requirements on banks as to the proportion of total funding that must be undertaken as core funding (such as longer-dated funding and domestic retail deposits). It also required banks to meet certain mismatch ratios that entail holding of sufficient liquid assets to meet a funding outflow over a defined period of time (see Hoskin, Nield and Richardson, 2009). The minimum

core funding ratio was initially set at 65 percent but was subsequently raised to 70 and then 75 percent in July 2012. Market and rating agency pressure for banks to strengthen their funding base worked alongside these requirements. Banks also developed new forms of funding – particularly covered bonds – that would allow better access to markets in times of financial market volatility.

While the New Zealand banks and their predominantly Australian parents remained sound throughout the crisis, the Government introduced a temporary deposit guarantee scheme for banks and eligible non-bank deposit takers (including banking societies, credit unions and finance companies) to assure the New Zealand public that this was the case. This scheme was introduced in 2008 and removed in 2011. During this time, about \$2 billion of taxpayer money was paid out to depositors of failed finance companies.<sup>7</sup>

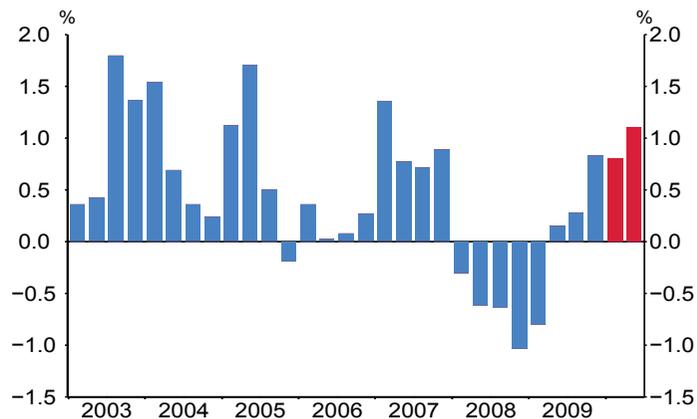
## 3 Green shoots recovery: mid-2009 to mid-2010

Throughout the recession, the Bank consistently signalled easy monetary conditions in the near term but a normalisation of the 90-day rate beyond 18 months. The extent of monetary stimulus – with the OCR having been lowered by 575 basis points between June 2008 and June 2009, and long-term interest rates having fallen – was believed to be sufficient to stimulate demand and thereby inflation. It was expected that interest

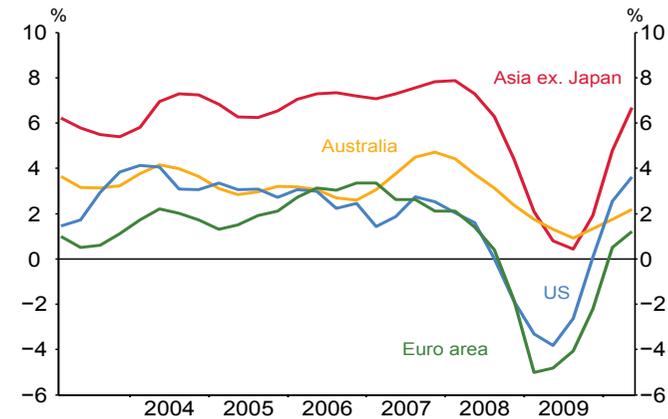
<sup>7</sup> Barker and Javier (2010) discuss finance company failures, and the new regulatory regime for non-bank deposits takers that was introduced at the end of 2010. Fiennes and O’Connor-Close (2012) discuss prudential supervision developments in the first few years after the global financial crisis.

**Figure 5**  
Selected charts from the June 2010 *Monetary Policy Statement*

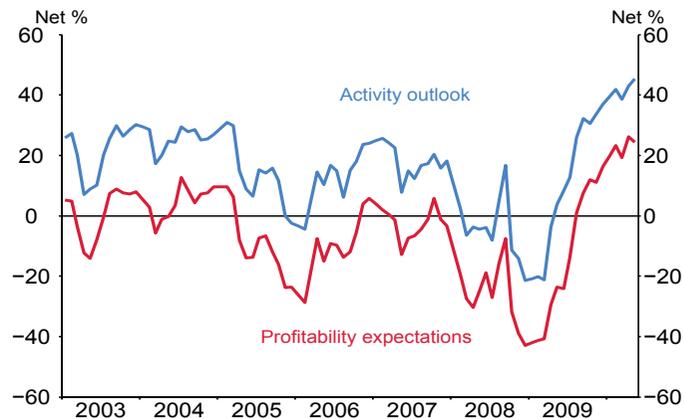
**Figure 5a**  
GDP growth  
(quarterly,  
forecasts  
in red)



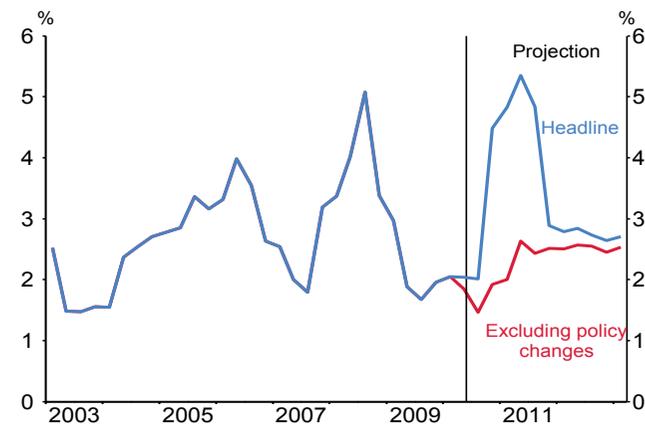
**Figure 5b**  
Trading  
partner  
growth  
(annual)



**Figure 5c**  
ANZBO survey  
indicators



**Figure 5d**  
CPI inflation  
(annual)



Source: RBNZ. Original sources included in the relevant *Statement*. Policy changes that are excluded in figure 5d include the increase in GST from 12.5 to 15 percent and effect of the Emissions Trading Scheme.

rates would eventually need to be set much closer to their historical levels.

By the end of 2009, a tentative domestic recovery appeared to be under way supported by both monetary and fiscal policy. The Bank removed its near-term easing bias from the December 2009 *Monetary Policy Statement*. While growth in most advanced economies remained tepid, the outlook was improving (mainly on the basis of near-term monetary and/or fiscal policy stimulus) and stronger growth in Asia-Pacific economies supported demand for New Zealand's export commodities.

Indicators of the domestic outlook looked healthy, and pointed to a recovery similar to those of past recessions (figure 5). House price inflation began to increase, reflecting low mortgage interest rates, tightness in supply from very low residential construction during the GFC and an increase in net immigration. Nonetheless, there was uncertainty regarding the sustainability of the domestic recovery. The New Zealand dollar Trade Weighted Index (TWI) had appreciated since the start of 2009 and households appeared to remain cautious. A key judgement the Bank had to make was whether households would resume the consumption behaviour associated with increasing house prices prior to the recession, or respond more prudently to economic conditions.

Annual CPI inflation had averaged 2 percent since the GFC, but inflationary pressure was expected to increase over the medium term as spare capacity was absorbed and the New Zealand dollar depreciated from an elevated level. Headline inflation was expected to spike higher, reflecting announced changes in taxation (particularly the increase in the Goods and Services Tax rate (GST) in October 2010), but the Bank believed that these spikes would have little effect on medium-term inflation. On the basis of strengthening medium-term inflationary pressure, the outlook for the 90-day interest rate was gradually increased

during the end of 2009 and beginning of 2010, and the OCR itself was increased by 50 basis points during June and July 2010.

On the fiscal side, *Budget 2010* announced a modest increase in net spending along with a broadly fiscally-neutral tax package, which was based on a reduction in personal income tax rates and increased indirect tax rates. This package was intended to increase labour supply and rebalance the economy from private consumption towards investment and exports.

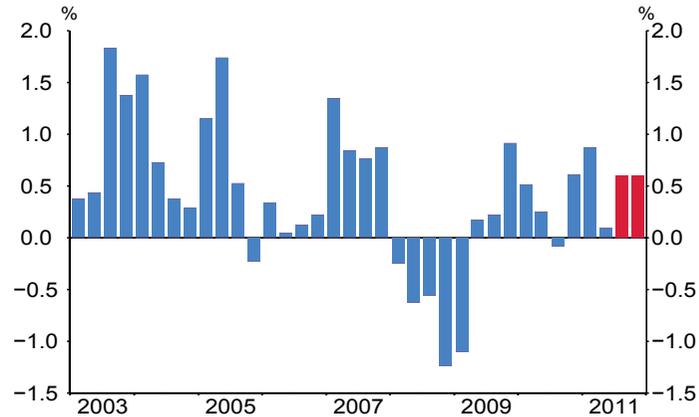
## 4 Domestic caution and global uncertainty: mid-2010 to late 2012

After strengthening through 2009 and into 2010, the domestic economic outlook weakened during the second half of 2010. The global recovery was proving more protracted than had been expected. Growth in the United States was being restrained by a slow labour market recovery and the need for on-going repair of household balance sheets, which eventually necessitated several rounds of quantitative easing. Concerns were emerging around sovereign debt levels in peripheral euro area economies, and fiscal austerity was expected to weigh heavily on growth in the region. The outlooks for New Zealand's trading partners in Asia and the Pacific were more positive, but had also moderated over the latter half of 2010.<sup>8</sup>

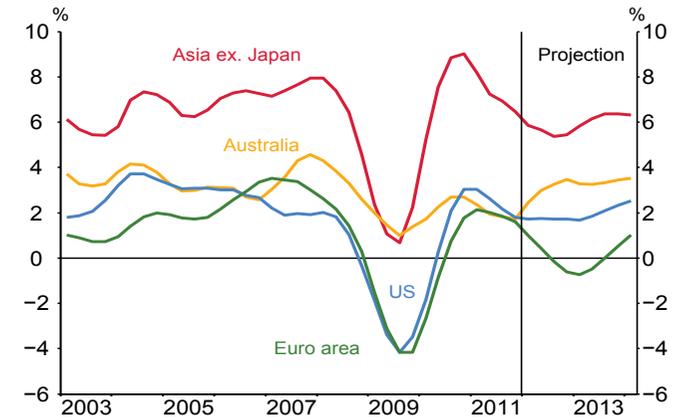
<sup>8</sup> See Bowman and Conway (2013a, 2013b) on the impact of China's growth on New Zealand. Osborn and Vehbi (2013) suggest a one percent increase in growth for China carries spill-over impacts for New Zealand's GDP of between 0.2 and 0.4 percent.

**Figure 6**  
Selected charts from the June 2011 *Monetary Policy Statement*

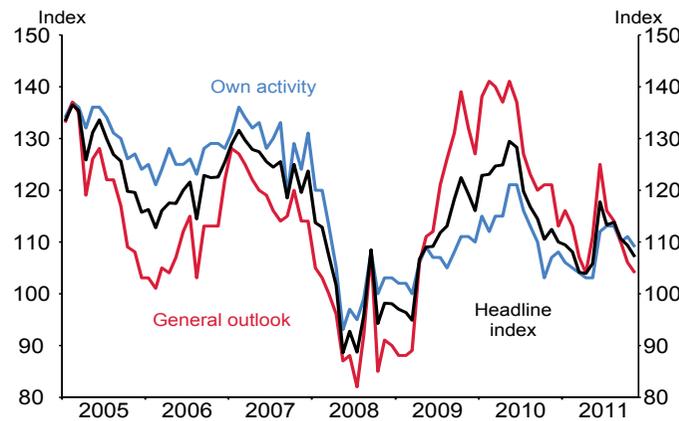
**Figure 6a**  
**GDP growth**  
(quarterly,  
forecasts in red)



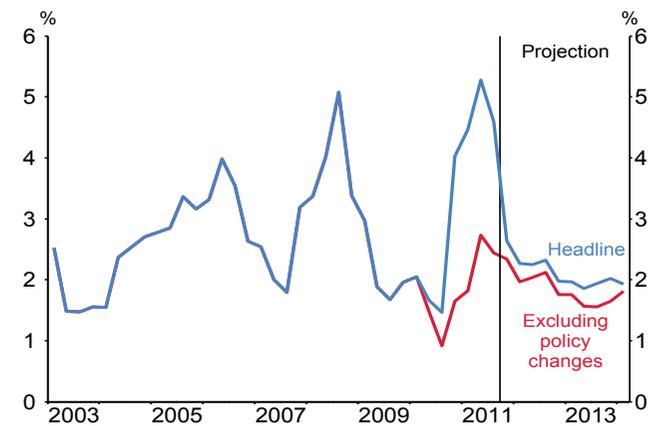
**Figure 6b**  
**Trading partner growth**  
(annual)



**Figure 6c**  
**ANZ-Roy Morgan Consumer Confidence**



**Figure 6d**  
**CPI inflation**  
(annual)



Source: RBNZ. Original sources included in the relevant *Statement*. Policy changes that are excluded in figure 6d include the increase in GST from 12.5 to 15 percent and effect of the Emissions Trading Scheme.

Domestically, growth was being restrained by weak household and business spending. It became increasingly evident that interest rates were not providing the same degree of support as expected, which led to the Bank retrospectively lowering its assumption for the neutral interest rate at the end of 2010.<sup>9</sup> Although the neutral interest rate assumption was not technically changed until the end of 2010, the consequences of the lower rate had been captured in other areas of the Bank's forecast for some time.

Growth had been weaker than expected, and the initial recovery in the housing market slowed after changes to the tax treatment of depreciation on buildings, increases in mortgage rates and a decline in net immigration. Indicators that had earlier pointed to a typical recovery now implied weaker GDP growth and inflation (figure 6). While interest rates were still expected to increase in an absolute sense, the speed at which rates were assumed to increase was progressively reduced over the second half of 2010 as the inflation outlook softened.

Against this weakening backdrop, Canterbury experienced a 7.1 magnitude earthquake on 4 September 2010, and a second large earthquake on 22 February 2011. In response to the February 2011 earthquake, the Bank lowered the OCR by 50 basis points in what was initially expected to be a temporary cut to offset the negative effects of the earthquakes on domestic consumer and business confidence. Box A discusses the Canterbury earthquakes and the subsequent rebuild in more detail.

Although the OCR was reduced following the February 2011 earthquake, as mentioned, the outlook for policy had already been moving lower

since mid-2010. The global outlook then deteriorated significantly over the second half of 2011, as concerns around the high levels of sovereign debt in peripheral euro area countries and the risk of contagion intensified, and growth in the United States was weaker than expected. Global financial market sentiment worsened, and international funding markets tightened. While domestic demand across Asia-Pacific appeared resilient, lower demand from Western economies flowed through to weaker exports in the region.

The deterioration in global sentiment over 2011 and 2012 had negative effects on business and consumer confidence in New Zealand. While the OCR cut in March 2011 had initially been regarded as a temporary measure, the weaker world outlook and associated market volatility eventually led the Bank to believe that this reduction should be maintained. The Bank was concerned about the potential for tumultuous market conditions over this period to increase bank funding costs, and place upwards pressure on domestic mortgage rates. However, in hindsight weak demand for credit and strong retail deposit growth largely isolated New Zealand banks from international funding cost pressures at this time.

As monetary policy outlooks were eased around the world, the New Zealand dollar TWI, while remaining volatile, experienced an overall appreciation over this period. The higher New Zealand dollar had a dampening effect on the tradables sector, and directly lowered tradables inflation.

After a temporary surge due to the increase in the goods and services tax (GST) in October 2010, headline CPI inflation began to surprise the Bank and other forecasters to the downside from the end of 2011. Most of the surprise was on the tradables side, and largely reflected the higher-than-expected exchange rate. Pricing intentions and inflation expectations

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<sup>9</sup> See Richardson and Williams (2015) for a general discussion of the importance of the neutral real rate to monetary policy in New Zealand.

## Box A

### The Canterbury earthquakes and rebuild

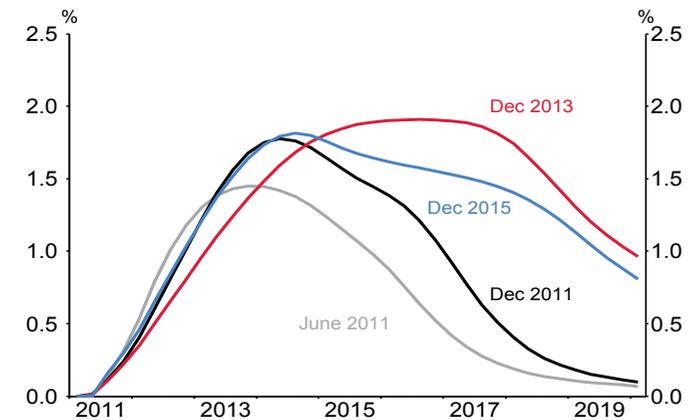
In September 2010 and February 2011 two large earthquakes hit Canterbury. The first earthquake caused significant damage to buildings; the second earthquake resulted in even more extensive damage and 185 people lost their lives.<sup>1</sup> Canterbury and its people have been plagued by large aftershocks for years after these initial events. The Canterbury earthquakes and subsequent reconstruction have played a significant role in the evolution of the New Zealand economy during the current business cycle.

The New Zealand dollar depreciated immediately following the February 2011 earthquake, as financial markets priced in what would ultimately be a 50 basis point reduction in the OCR on 10th March 2011. From the perspective of managing the economic cycle in the face of this event, both the Bank and Treasury focused on understanding the scale and nature of the subsequent rebuild. The estimated cost of the rebuild was successively revised higher (figure A1), and eventually represented about 20 percent of New Zealand's annual GDP – one of the world's larger natural disasters by that metric.<sup>2</sup> The expected time to rebuild was prolonged as subsequent aftershocks and the complexity of insurance claims delayed pay-outs and impeded progress.

1 This Box draws on material presented in Noy, Parker and Wood (2016). Parker and Steenkamp (2012) document the economic effect of the earthquakes at length.

2 Treasury and the Reserve Bank estimate that aggregate investment stemming from the rebuild will total \$35 billion (rounded to the nearest \$5 billion and measured in 2011 prices) with 80% of this completed by 2020.

**Figure A1**  
RBNZ Rebuild estimates  
(share of potential GDP)



Source: Source: RBNZ.

The Bank was concerned about the effect of the rebuild efforts on construction cost inflation and the potential for spillover into wider inflationary pressures. The rebuild was to be labour-intensive and require a significant increase in the local labour force to rebuild and repair public infrastructure, residential and commercial properties. While the Bank was directed by the Policy Targets Agreement (PTA) to look through temporary price shifts that resulted from the earthquakes, it needed to set policy in order to offset any enduring effects on inflation expectations and nationwide wage- and price-setting behaviour.

In hindsight, although construction costs rose sharply in Canterbury, domestic labour markets and international migration policy appear to have been flexible enough to prevent a dramatic increase in national

3 This consisted of \$12.6 billion of operating expenditure and \$4.4 billion of capital expenditure. Approximately \$7.8 billion of the total relates to EQC and the Southern Response support package which involved the insurer AMI receiving capital support from the New Zealand Government to ensure the interests of all AMI policyholders were protected and all claims would continue to be met under the terms of their policies.

wages and inflationary pressure. The degree of spillover was ultimately less than the Bank had feared.

The Canterbury earthquakes and reconstruction also demonstrated the importance of fiscal buffers, having cost the Crown \$17 billion.<sup>3</sup> The extra spending was a temporary stimulus and reduction in the operating balance (OBEGAL), but a permanent addition to net debt. The high level of insurance coverage – through the Earthquake Commission (EQC) and private insurers – also supported recovery.

also began to ease over this period. In addition to low tradables inflation, past spare capacity and on-going weakness in communications prices contributed to non-tradables inflation being subdued relative to history (see Kergozou and Ranchhod, 2013).

Aggregate GDP growth was moderate over this period. Reconstruction in Canterbury and the relatively high terms of trade provided some support, but GDP growth remained weaker than in past expansions. Household and business caution had resulted in very weak residential and business investment since the GFC, and statistical revisions revealed that growth in GDP and domestic consumption in particular had also been weaker than the Bank had initially assumed. Drought conditions also affected output during the 2012/13 summer. Lower milk production due to less favourable feed conditions was offset in the short term by increased livestock slaughter.<sup>10,11</sup>

While growth had been relatively subdued, indicators suggested that spare capacity was being steadily absorbed. The Bank interpreted this as a reflection of weak investment and weak confidence lowering growth in New Zealand's potential output. However, its assessment was complicated by the mixed signals arising from different indicators of economic slack. For example, indicators such as the Quarterly Survey of Business Opinion showed that spare capacity had been absorbed, even though the unemployment rate remained high (see Craigie, Gilmore and Groshenny, 2012). Stark regional divergences in capacity indicators – with pressures steadily building in Canterbury, but remaining more modest elsewhere – complicated the assessment of nationwide capacity pressure, and therefore the likely inflation consequences. In a similar vein, different labour market data were also providing conflicting signals.

10 *Budget 2013* forecasts estimated that the drought subtracted 0.7 percentage points from GDP growth.

11 Kamber, McDonald and Price (2013) provide estimates of the impact of drought on activity.

At the end of 2012, tradables inflation was weak and expected to remain so, due to persistent strength in the New Zealand dollar in the face of policy easing abroad and weakness in the global prices of New Zealand's imports. However, non-tradables inflation was expected to increase as the Canterbury rebuild gained momentum and stimulatory interest rates supported domestic activity. The Bank was also conscious of the risk that strong construction cost inflation in Canterbury would spill over into wider inflationary pressures.

## 5 The commodity boom and construction upswing: early 2013 to mid-2014

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New Zealand's economic outlook began to improve from the start of 2013 (figure 7). Downside risks to the global outlook had receded, and global policy easing had supported an improvement in financial market conditions. The domestic recovery had been uneven – with spare capacity lingering in the labour market – but GDP growth had been stronger than expected over 2013.

By the end of 2013 and into 2014, the terms of trade were at a 40-year high. Tight global supply and strong demand from China had seen international dairy prices increase sharply, and prices for New Zealand's other export commodities had also increased. The world prices of New Zealand's imports were also low, contributing to the strength in New Zealanders' purchasing power. Net immigration had been increasing since the start of 2013, with fewer New Zealanders leaving for Australia

as mining sector investment across the Tasman declined. More people were also arriving in New Zealand; workers were coming from overseas to meet the labour demands of the Canterbury rebuild, and an increasing number of international students contributed to strong net immigration flows.

Supported by strong population growth, a slow supply response and low mortgage interest rates, house price inflation began to increase – particularly in Auckland. An easing in bank lending standards, including an increase in the proportion of borrowing at loan-to-value ratios (LVRs) greater than 80 percent, began to play more of a role in housing and credit developments during 2013. Concerned about the increased risk to financial stability posed by high-LVR lending, the Bank introduced restrictions on such lending in October 2013.

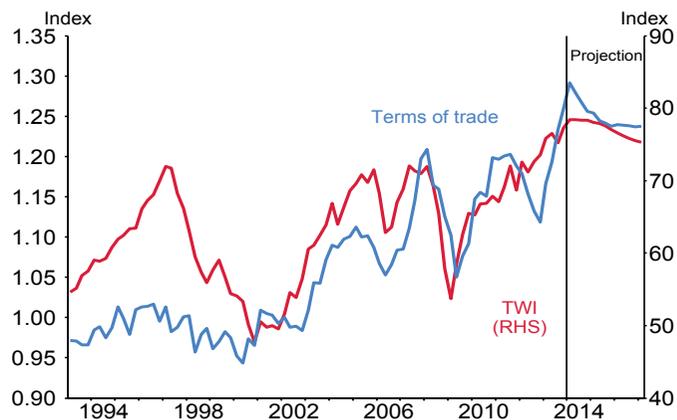
The LVR policy was introduced to address risks to financial stability, but it also had implications for inflationary pressure, and therefore monetary policy. On introduction, the LVR policy was expected to dampen annual house price inflation by about 1 to 4 percentage points over the first year of its implementation. The Bank estimated that the effect of this reduction in house price inflation on aggregate inflationary pressures was equivalent to about 30 basis points in the outlook for the 90-day interest rate (September 2013 *Monetary Policy Statement*).

After being extremely weak since the GFC, residential construction began to increase sharply – with this increase primarily accounted for by rebuild activity in Canterbury. Construction sector activity was strong, and was expected to strengthen and become increasingly widespread across the country over coming years.

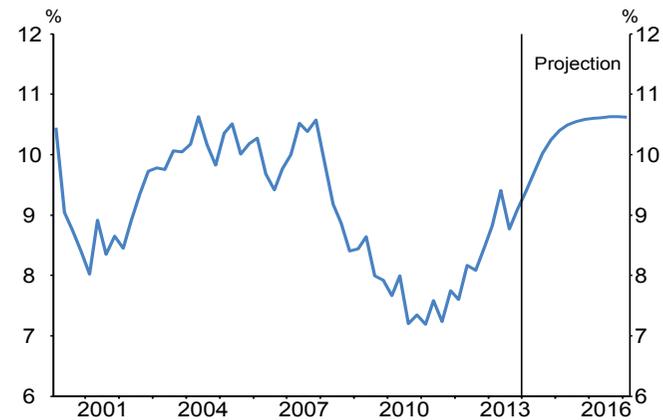
The boost to the New Zealand economy from high export commodity prices and construction activity was offset by a number of headwinds

**Figure 7**  
Selected charts from the June 2014 *Monetary Policy Statement*

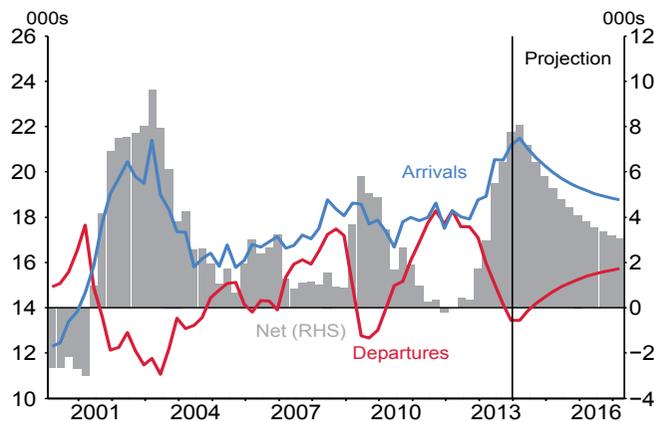
**Figure 7a**  
Terms of trade and NZD TWI



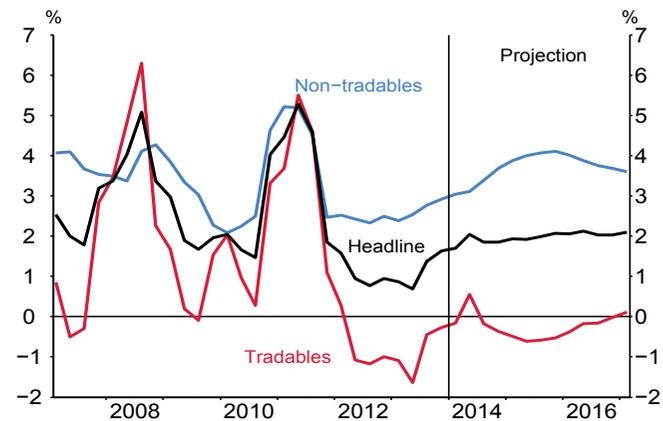
**Figure 7b**  
Construction expenditure  
(share of potential GDP)



**Figure 7c**  
Net PLT immigration  
(quarterly)

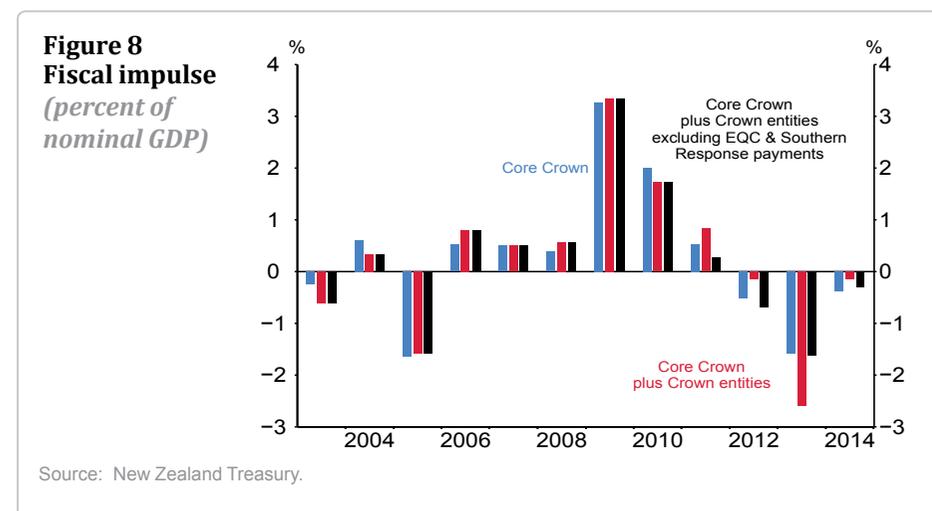


**Figure 7d**  
CPI inflation  
(annual)



Source: RBNZ. Original sources included in the relevant *Statement*. PLT in figure 7c refers to permanent and long-term migration (one year or more).

over this period. New Zealand's relatively favourable economic outlook against the backdrop of very stimulatory policy elsewhere in the world saw considerable upward pressure on New Zealand's exchange rate. The high New Zealand dollar acted to offset some of the income gains from high world export prices, and encouraged substitution away from domestically produced goods and services towards imports.



Fiscal consolidation also weighed on economic growth over this period. Having been expansionary since the GFC, fiscal policy began to have a contractionary effect on aggregate demand growth from 2012 (figure 8). During this period, the Bank estimated that fiscal consolidation would broadly offset the growth impulse provided by the rebuild in Canterbury.

Annual headline CPI inflation remained below 2 percent over 2013 and 2014, but increased somewhat from the start of 2013 (from 0.9 percent in March 2013 to 1.6 percent in December 2013). Tradables inflation was still negative but less so than it had been, reflecting a temporary depreciation in the exchange rate over 2013, and non-tradables inflation

was increasing (figure 7d, page 15). At the time, the Bank believed the increase in non-tradables inflation to be consistent with the assumed increase in capacity pressures.

As the outlook for activity and inflationary pressures increased over 2013 and into 2014, the outlook for the 90-day interest rate was successively revised higher. While the New Zealand economy was being buffeted by strong opposing forces, GDP growth was robust and higher than anticipated. By the start of 2014, growth was seen as self-sustaining and as having considerable momentum, and the Bank believed that the economy no longer required the extent of monetary stimulus provided by a 2.5 percent OCR.

Although inflation was low and expected to remain so in the near term, the Bank responded to the strong outlook for medium-term inflationary pressures. The OCR was increased by 100 basis points between March and July 2014, an increase that had been well-signalled by the upwards revisions to the 90-day rate track over 2013.

The mortgage curve remained relatively stable over this period, as the higher outlook for the policy rate appeared to be offset by improved funding conditions globally and competition between domestic banks – particularly at the shorter end of the curve. After the experience of losing some monetary policy traction at the peak of the previous economic cycle, the Bank was conscious that an increasing share of borrowers were moving from floating to fixed-term mortgages. However, borrowers were predominantly shifting to shorter-term fixed mortgage rates (where bank competition was strongest), and so while the weighted average time to re-price increased, it remained at less than 12 months.

## 6 Persistently low inflation: mid-2014 to present day

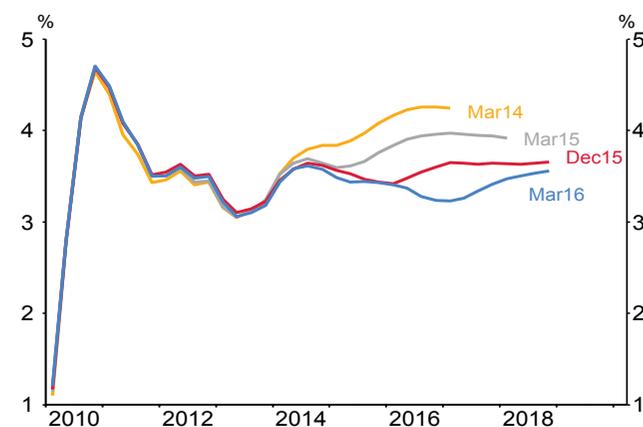
The outlook for inflation weakened from mid-2014, with global conditions playing a significant role. Unanticipated falls in commodity prices – most notably oil and dairy – contributed to this weaker inflationary outlook. Global oil prices halved between June 2014 and March 2015, and had a direct negative influence on tradables inflation in New Zealand.<sup>12</sup> Actual annual inflation remained below 1 percent from December 2014 until September 2016.

It initially appeared that much of the fall in oil prices was due to an increase in supply, but demand conditions were also playing a role. Financial market volatility increased again from the end of 2014, given increased uncertainty about the global outlook – related to China in particular – and the likely pace of monetary policy tightening in the United States. The outlook for New Zealand's trading partner growth was continually revised lower over 2014 and 2015 (figure 9), as were expectations for global policy rates.

While the New Zealand dollar TWI depreciated over 2015, it remained high and higher than would normally have been expected given the large fall in New Zealand's export prices. The New Zealand dollar began to appreciate again from the start of 2016. Although the outlook for New Zealand monetary policy eased over this time, very stimulatory policy across the globe underpinned strength in New Zealand's exchange rate.

<sup>12</sup> The peak effect of the decline in oil prices was to lower annual headline CPI inflation by 0.8 percentage points in the March 2015 quarter.

**Figure 9**  
Trading partner  
GDP growth  
projections  
(annual  
average)



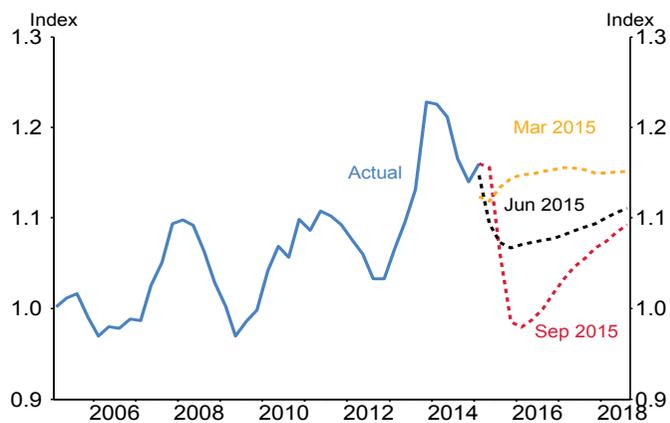
Source: March 2016 Statement. Original source included in the Statement.

The high – and higher than anticipated – New Zealand dollar continued to contribute to negative tradables inflation. Negative tradables inflation also reflected weakness in global inflation, which dampened the world prices for New Zealand's imported goods and services.

From mid-2014, the outlook for non-tradables inflation also softened. The increase in non-tradables inflation at the end of 2013 had been accounted for more by sector-specific factors than a general up-tick in underlying inflationary pressures. The lack of a generalised increase in non-tradables inflation was consistent with measures of core inflation having remained stable at historically low levels.

The Bank's assessment of capacity pressures – or the output gap – was gradually revised lower. Stronger-than-expected growth in labour supply, through high net immigration and labour market participation, contributed to greater-than-expected growth in New Zealand's potential output, and acted to reduce pressure on wages. The effect of strong migration on net demand (and therefore inflationary pressure) also appeared to be weaker

**Figure 10**  
**Terms**  
**of trade**  
**projections**  
**March 2015**  
**to September**  
**2015**



Source: Statistics New Zealand, RBNZ estimates.

than initially expected based on previous migration cycles.<sup>13</sup> The larger-than-expected decline in global dairy prices over 2014 acted to dampen rural incomes and confidence, and reduce aggregate demand through lower consumption and investment.<sup>14</sup>

Despite much lower oil prices on the import side, the Bank's outlook for the terms of trade (a key driver of demand in the economy) was continually revised lower over 2015, as the export price outlook deteriorated (figure 10). The decline in global oil prices significantly reduced headline inflation via lower petrol prices, but the Bank initially anticipated that some of the boost to household disposable income would result in higher household consumption, and therefore domestic inflationary pressure. However, consumption growth remained moderate over this period.

13 Recent research conducted by the Bank suggests that two factors may account for this weaker net demand effect. See Box C of the February 2017 *Monetary Policy Statement* for a summary of this work.

14 Kamber, Nodari and Wong (2016) estimate the effects of commodity price movements on the New Zealand economy.

From mid-2014 the Bank thought it prudent to undertake a period of assessment, to evaluate how the 100 basis points in tightening over the first half of 2014 (and upwards shift in the projected 90-day rate track) was being transmitted through the economy. By the start of 2015, the Bank had moved its policy outlook lower to one of no bias, reflecting the weaker global and domestic outlooks and their expected impact on medium-term inflationary pressure. A tightening bias of some degree had been a feature of the Bank's forecasts since the GFC.

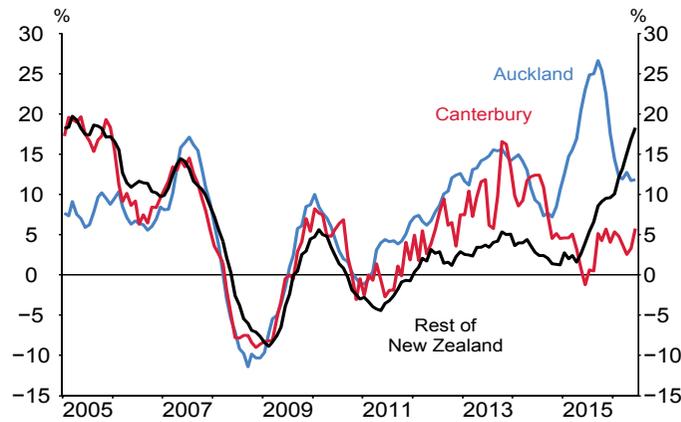
The outlook for inflationary pressures steadily weakened over 2015, and the 90-day rate forecast was lowered further in response – from no bias to an easing one. Mortgage rates also moved lower, after remaining broadly stable over 2013 and 2014. In response to the weaker inflation outlook, the Bank lowered the OCR by 100 basis points between June 2015 and December 2015.

As global conditions deteriorated and the outlook for domestic capacity pressures weakened, house price inflation began to increase sharply in Auckland from the end of 2014. During 2014, house price inflation was more muted in the rest of the country (figure 11).

The high level of house price inflation in Auckland, combined with an increasing share of loans being made to property investors, intensified concerns about financial stability. The investor share of transactions in Auckland had increased from about 36 percent prior to the introduction of LVR restrictions, to over 40 percent in the first quarter of 2015. The level of sales to investors was also about 12 percent higher than immediately prior to the introduction of the LVR restrictions.<sup>15</sup>

15 See RBNZ (2015), 'Consultation paper: adjustments to restrictions on high-LVR residential mortgage lending', June.

**Figure 11**  
House price inflation by region  
(annual)



Source: RBNZ June 2016 *Monetary Policy Statement*. Original source included in the *Statement*.

The Bank believes that a rising investor share of loans increases risk to financial stability. Calibrating default risk in the New Zealand property market is difficult, as the market has not experienced major corrections in recent times. However, experience in other countries suggests that even though residential property investment loans appear to have relatively low default rates during normal economic circumstances, default rates can be higher for investor loans than those to owner-occupiers during extreme housing market downturns.<sup>16</sup>

Given increasing concern about high house price inflation in Auckland and the increasing investor share of lending, the LVR policy was updated in November 2015 to address these risks to financial stability. Restrictions were tightened on loans for which an Auckland investment property was included in the collateral, while the LVR restrictions for

loans secured by owner-occupied property in Auckland remained the same.<sup>17</sup>

The restrictions were loosened for loans secured by non-Auckland property (the share of this lending that could be at an LVR greater than 80 percent was increased from 10 to 15 percent.).<sup>18</sup> The Government also introduced the “bright-line” test at the end of 2015, which requires income tax to be paid on any gains from the sale of a residential property that is bought and sold within two years (with the exception of the main family home).<sup>19</sup> This test made existing tax rules regarding sale of residential property less open to interpretation.

At the time of the December 2015 *MPS*, the Bank assumed that the dampening effect of these policy changes on house price inflation would be temporary (although the temporary dampening of the *rate* of increase would have a permanent effect on the *level* of house prices). House price inflation in Auckland did indeed moderate from the end of 2015, although remained high.

Reflecting low headline CPI inflation over recent years – due in large part to an unusually long period of negative tradables inflation – and particularly low inflation more recently due to the dramatic falls in oil prices, inflation expectations at the 1- and 2-year horizons fell significantly in March 2016. The Bank reduced the OCR by a further 25 basis points in response, due to concerns that the decline in short-

<sup>16</sup> Kelly (2011) shows mortgage default rates for the UK and Ireland were significantly higher for investors during the GFC. Default rates may be for investor loans than owner-occupier loans at any given LVR (the 2015 consultation documentation on LVRs explores this point further). Owner-occupier households have to move out of their own home if they default, giving a powerful incentive to continue servicing their mortgages if at all possible. Investors do not face the same incentive for their rental properties, and are also more likely to face income shocks (like rental vacancies) at the same time that house prices fall.

<sup>17</sup> Banks were required to limit lending on loans for which an Auckland investment property was included in the collateral at an LVR greater than 70 percent to no more than 5 percent of lending on such loans. 10 percent of lending to owner-occupied property in Auckland could be at an LVR greater than 80 percent.

<sup>18</sup> At the same time the Bank amended its Capital Adequacy Framework to provide a different treatment of loans secured by owner-occupied property versus loans secured by investment property. The amendments required more capital to be held by banks in respect of loans secured by investment property, thereby providing the banks with more buffers against possible losses on these loans.

<sup>19</sup> See Inland Revenue Department and The Treasury (2015) ‘Bright-line test for sales of residential property’, June.

term inflation expectations would become self-fulfilling and reduce future inflation outcomes. Further weakening of the inflation outlook – partly accounted for by continued strength in the New Zealand dollar and persistent weakness in global inflation – and concern that inflation expectations could decline further, led the Bank to lower the OCR by another 50 basis points to 1.75 percent by November 2016.

House price inflation outside Auckland increased from an annual rate of 5 percent in December 2015 to 13 percent in June 2016. In September 2016 the Bank removed the distinction between Auckland and the rest of the country for both investors and other borrowers, and also tightened restrictions for all investment loans.<sup>20</sup> This update to the LVR policy, in conjunction with an increase in mortgage rates, contributed to a slowing in the housing market over the end of 2016 and into 2017. It is uncertain whether this moderation will be sustained, given the continued imbalance between housing supply and demand.

After being below the Bank's target range for eight quarters, annual CPI inflation increased to 1.3 percent in the December 2016 quarter. This increase had been expected, and was largely the result of the decline in oil prices over 2015 dropping out of the annual calculations. Currently, monetary policy is expected to remain accommodative in order to maintain above-average GDP growth and an increase in inflation towards the midpoint of the target range.<sup>21</sup>

## 7 Conclusion

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Spare capacity in the global economy following the GFC has persisted much longer than in past cycles, despite extremely accommodative monetary policy settings in advanced economies. GDP growth in New Zealand has also been weaker than in past expansions, in large part due to weakness and uncertainty abroad. Against this international and domestic backdrop, consumer price inflation in New Zealand has been low, and lower than what the Bank and other forecasters expected – particularly since 2014.

This article has summarised developments in the New Zealand economy since 2008 from a monetary policy perspective. Although the OCR itself has been relatively stable since the GFC, the outlook for the policy rate has shifted considerably during the current cycle. Five key phases have been identified: the global financial crisis of 2008-09; green shoots recovery (mid-2009 to mid-2010); domestic caution and global uncertainty (mid-2010 to late 2012); the commodity boom and construction upswing (early 2013 to mid-2014); and persistently low inflation (mid-2014 to present day). A subsequent article will present some of the key features of this cycle, and some of the lessons for monetary policy that have emerged or been re-emphasised.

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20 Banks are now required to limit lending to investors with LVRs greater than 60 percent (previously 70 percent) to 5 percent of such loans, and to all non-investors with LVRs greater than 80 percent to 10 percent of such loans.

21 See the latest *Monetary Policy Statement* (February 2017) for more discussion.

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