Monetary Policy Statement[1]

August 1998

This Statement is made pursuant to Section 15 of the Reserve Bank of New Zealand Act 1989.

Contents

This document is also available on the Reserve Bank's website (http://www.rbnz.govt.nz).

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[1] Projections finalised on 29 July 1998. Text finalised on 12 August 1998.

1. Overview and policy assessment

The level of both current and projected economic activity is weaker than anticipated in our May *Monetary Policy Statement,* implying more spare capacity and reduced inflation pressures. As a result, monetary conditions are projected to continue to ease over the near term, in order to maintain annual inflation near the mid-point of the Bank's 0 to 3 percent target range. A level of monetary conditions of around zero on the Monetary Conditions Index (MCI) is now viewed as appropriate for the December quarter. This MCI level is down from the 350 and 275 levels projected for the September and December quarters respectively in the May *Monetary Policy Statement*.

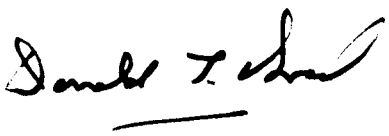
Recent information suggests that New Zealand economic activity will remain subdued for the remainder of 1998. The world outlook has continued to deteriorate, with many Asian countries in the grip of a recession. Growth has slowed in Australia and in the United States, leaving only Continental Europe showing signs of an upswing. Domestically, the March quarter GDP result was considerably weaker than anticipated, and indicators of activity for the remainder of the calendar year are also relatively weak. The impacts of Asia and the summer drought are evident in lower export volumes.

Despite the weak near-term outlook, economic activity is projected to pick up reasonably sharply from early 1999 in response to cyclical factors, stimulus from monetary and fiscal policy, and a recovery in trading-partner growth. The economy is in considerably better shape than in the early-1990s, which is the last time growth slowed abruptly. Business balance sheets and the banking sector are in better stead, unemployment is lower, tax cuts and government spending are supporting domestic demand, and inflation is low and stable, providing scope for monetary policy to ease. These features indicate that a broadly-based recovery can readily be anticipated, rather than a more protracted slowdown of the sort experienced in the early-1990s.

Rising investment, consumption and exports all contribute to the projected pick-up in growth from early 1999. Business contacts suggest firms are deferring, rather than cancelling, employment expansion and investment decisions. The recent sharp adjustment in New Zealand's real exchange rate has left exporters well-placed both to gain market share, and to profit from any recovery in world demand. Meanwhile, consumption is expected to continue to grow, buoyed by rising disposable incomes. However, continued high household debt burdens will constrain consumption relative to both recent experience and projected income growth.

Given the larger and more persistent estimated degree of spare capacity compared to May, inflation is projected to remain subdued over the medium term. A modest import-price-led rise in consumer prices is anticipated from early 1999. However, the impact of the past nominal exchange rate depreciation on consumer prices is expected to be partly offset by both lower domestic profit margins and low world import prices. Several industry-level developments, for example the removal of restrictions on parallel importing and the removal of tariffs on motor vehicles, will assist in restraining inflation pressures. Overall, consumer price inflation is projected to remain near the mid-point of the target range.

Considerable uncertainties exist however. For example, in the near term, a sharper-than-expected import price rise as a result of the weaker New Zealand dollar could lead to more consumer price inflation than anticipated. Over the medium term, which is the more relevant time horizon on which to base monetary policy decisions, a further deterioration in the world economy remains a key risk. The projected pace of easing in monetary conditions thus balances the concern that inflation pressures may return more quickly, against a possibly weaker-than-anticipated world economy. In these uncertain times, monetary policy must remain alert to emerging information, and ready to allow monetary conditions to respond appropriately.



Donald T Brash
Governor

Figure 1

Consumer price inflation

(annual percentage change)

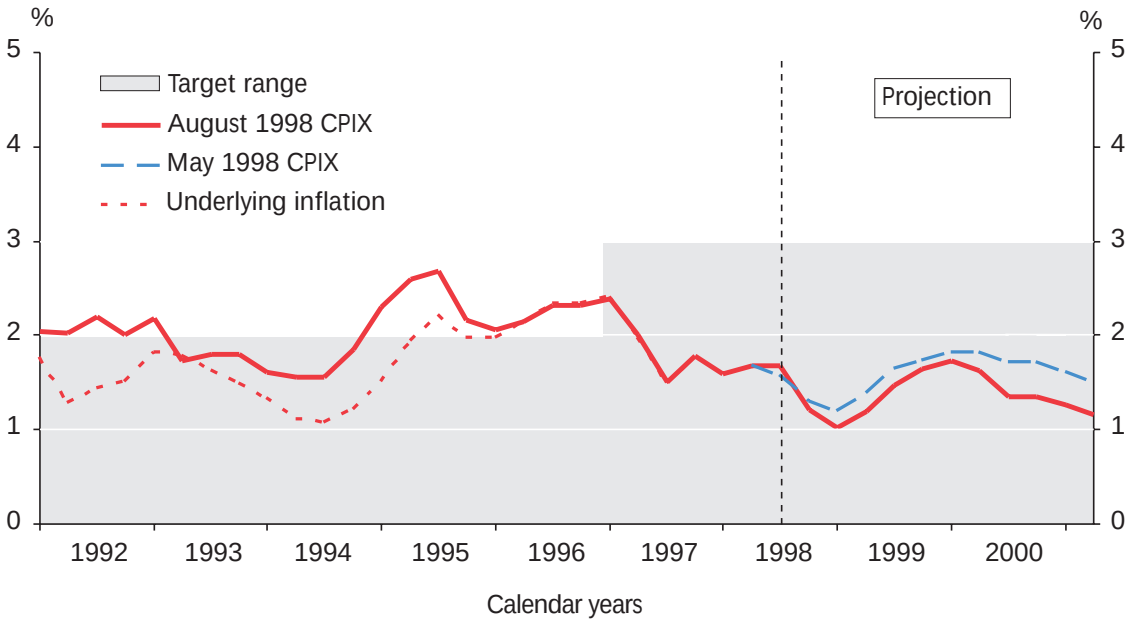


Figure 2

Nominal monetary conditions

(December 1996 quarter average = 1000)

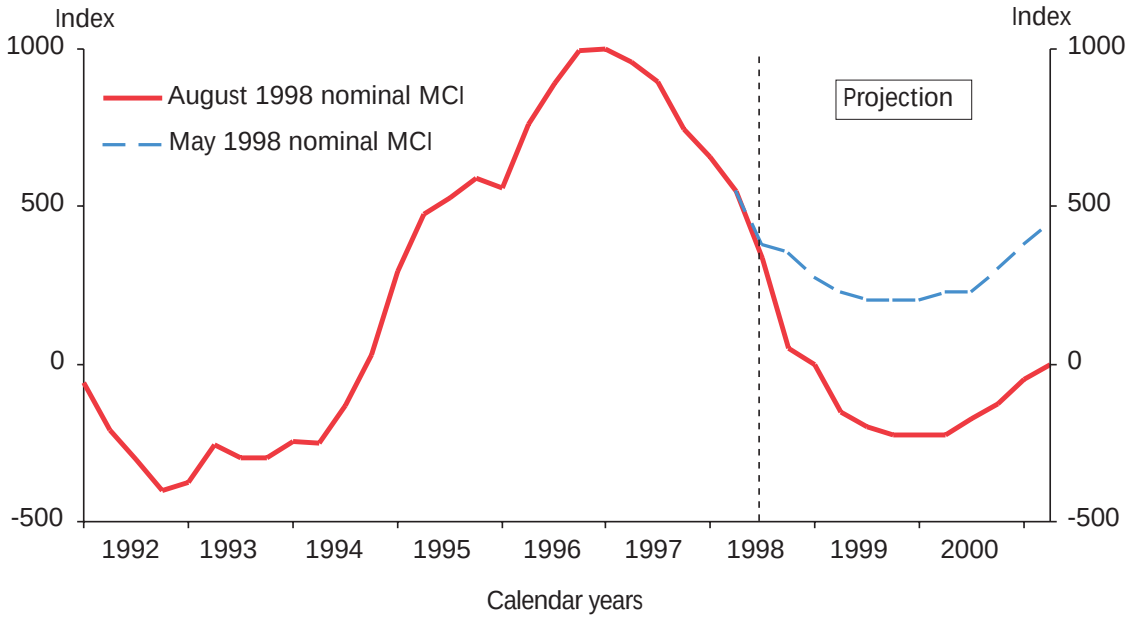


Table 1

Summary of economic projections

(Annual percentage change, unless specified otherwise)

	Actuals	Projections			
March year	**1997**	**1998e**	**1999**	**2000**	**2001**
Price measures					
CPIX	2.0	1.7	1.2	1.6	1.2
Wages	4.0	2.5	2.1	2.1	2.4
Import prices (in NZD)	-4.6	3.1	5.3	0.3	-0.1
Export prices (in NZD)	-6.3	5.5	5.3	2.6	0.1
Monetary conditions					
Nominal MCI (March quarter level)	956	550	-150	-225	0
90-day rate (March quarter level)	7.5	8.9	5.8	5.0	5.7
TWI (March quarter level)	68.4	61.2	56.8	56.9	58.6
Output					
GDP (production, year average)	2.7	2.2	0.1	4.0	4.7
Output gap (% of potential GDP, year average)	1.0	0.0	-2.8	-1.7	0.2
Key balances					
Government operating balance (% of GDP, June year average)	2.0	2.6	0.6	1.1	1.9
Current account balance (% of GDP, year average)	-4.7	-7.1	-6.9	-4.7	-3.7
Terms of trade (year average)	-0.9	-0.6	1.9	2.4	0.1
Unemployment rate (March qtr, s.a.)	6.4	7.1	8.2	7.4	6.3
Household savings rate (year average level)	1.4	0.5	1.1	2.1	2.6
World economy					
Industrial production (year average)	2.3	3.8	-1.0	2.8	2.7
World CPI inflation	2.3	2.3	1.9	2.2	2.2

Quarterly projections (quarterly percentage change, unless specified otherwise)	**Mar-98**	**Jun-98**	**Sep-98**	**Dec-98**	**Mar-99**
CPIX	0.3	0.3	0.2	0.3	0.5
Nominal MCI (level)	550	334	50	0	-150
GDP (production, s.a.)	-0.9	-0.2	0.3	0.5	1.0

e = estimate.

2. Monetary policy in an uncertain world

Monetary policy affects the economy, and hence inflation, with long and variable lags. This means that monetary policy must be forward-looking, and necessitates making predictions. Of course, the future cannot be foreseen with perfect clarity, implying that any monetary policy framework must be able to cope with uncertainty. The management of uncertainty involves issues such as, for example, the degree of confidence surrounding a particular projection, the regularity with which projections are revised, the speed with which policy adjusts, and the degree of flexibility the monetary policy framework affords policy-makers.

Recent economic events clearly illustrate the need to manage uncertainty. For example, the New Zealand summer drought, the abrupt economic slowdown in Asia, and the implications of Japan's banking sector problems were all unpredictable events in their timing and magnitude, even if some commentators felt that these events were inevitable. In addition, the actual impact of shocks on an economy, and hence the appropriate monetary policy response, depend very much on the surrounding circumstances at the time they occur. For example, New Zealand's business cycle was already in a slowing phase when the above shocks occurred. This implied that the negative impact of the shocks accentuated the need for an easing in monetary conditions that was already underway. In contrast, for example, the US economy was still growing rapidly, with the negative impact of the Asian economic downturn helping delay what many commentators had considered an inevitable tightening in US monetary policy.

The economic projections presented in this *Monetary Policy Statement* embody a number of assumptions about which there is uncertainty. In this section, we consider the nature of the uncertainties we are dealing with, and their implications for the conduct of monetary policy.

It is useful to think about uncertainty as comprising three elements:

- uncertainty about the nature, size, and duration of economic shocks;
- uncertainty about the current state of the economy; and
- uncertainty about how the economy works.

As in many areas of economic policy-making, there is no one 'correct' way to respond to uncertainty when operating monetary policy. When uncertain about how the economy works, prudent policy-makers might act cautiously, shifting monetary conditions only gradually in response to unfolding developments. On the other hand, reacting slowly to an economic shock might destabilise, rather than stabilise, output and prices. In the end, a considered policy response must take into account the type of shock, the current strength of the economy, the degree of uncertainty, and the bias of perceived inflation risk, all within the requirements of the particular monetary policy framework.

Uncertainty about future events

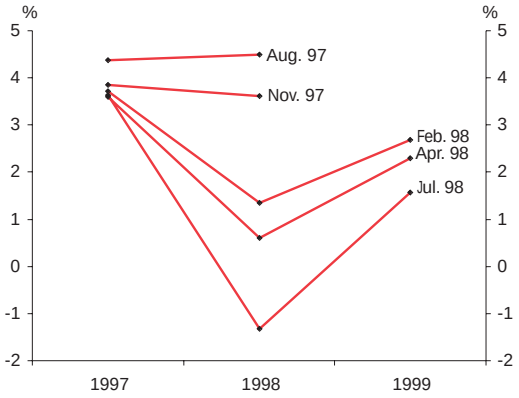
An important step in preparing an economic projection is the setting of assumptions about how events will unfold. Over the last year, an example of an event that has had important implications for the New Zealand economy has been the deterioration of several Asian economies. One year ago, few were anticipating the need for the IMF to lead rescue packages for Asia amounting to US$110 billion, Hong Kong house prices falling 40 percent, or New Zealand suffering a near-collapse in timber exports to Korea. The occurrence and magnitude of these 'shocks' were not foreseen, at the time when the monetary conditions that are now being reflected in inflation pressures were determined.

One thing that we can be sure about is that unanticipated events will be a recurring feature. Currently, there is abundant uncertainty about the outlook for the Japanese economy. Similarly, we do not know whether the Federal Reserve will tighten monetary policy in the US and, if it does, whether that would trigger a sharp correction in US equity prices. Generally, we base our world economy forecasts on a consensus of market forecasters. Our view is that market forecasters overseas will be better-informed about their respective economies than we might hope to be, and that the average of a group of well-informed forecasters will outperform any single projection over a reasonable time period. Still, even the average of the best-informed forecasts can be subject to sizeable and abrupt changes. Figure 3, for example, shows how market forecasters have adjusted their

estimates of Asian GDP growth since mid-1997. As the situation in Asia has deteriorated, market forecasters have dramatically revised downward their growth forecasts. Given such revisions, our emphasis is on spelling out the assumptions adopted in our projections, as a baseline against which subsequent events can be monitored. Alternative scenarios are also regularly discussed in our *Monetary Policy Statements*, as in Section 7 of this document where we detail a scenario of lower world economic growth.

Figure 3

Revisions to *Consensus* GDP growth forecasts for Asian countries since August 1997[2]

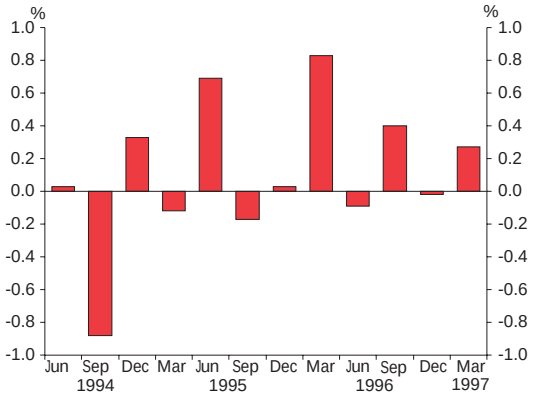


Uncertainty about current conditions

In order to make an economic projection, we must also assess how the economy has evolved in recent months, to provide a 'starting point'. But this assessment too is subject to uncertainties. Important data arrive only with a lag, and the available data are frequently subject to revision. For example, the latest GDP data indicate that the volume of output of goods and services in the first quarter of calendar 1998 was 0.9 percent down on the preceding quarter. Past experience suggests that this estimate may be revised once or twice, and perhaps materially so, before being finalised. Figure 4 illustrates the extent to which initial estimates can be revised. For example, the initial GDP figure announced for the March quarter of 1996 was revised up almost 1 percent as more information became available and an annual reconciliation was completed.

Figure 4

Revisions to initial quarterly GDP estimates[3]



Moreover, some key economic concepts are not even observable, but rather have to be estimated from the data we do have. An important example is the productive capacity, or 'potential' output, of the economy (see Section 4). As new data on output become available each quarter, we must estimate what proportion of the change from the previous quarter reflects growth in the economy's supply capacity, and what portion simply reflects demand developments. This estimate has a central bearing on our assessment of future inflation pressures, and hence on the profile required for monetary conditions. However, by necessity, it must be an estimate – based on observable data such as actual output, and other indicators such as capacity utilisation indices, inflation and labour market developments – and therefore is subject to uncertainty.

The Bank attempts to keep 'starting point' uncertainty to a minimum in a number of ways. For example, we continuously monitor and analyse an array of economic indicators, and we keep in touch with a wide range of businesses and

[2] The GDP growth figures are calendar year annual averages, based on a NZ export-weighted index of China, Hong Kong SAR, Indonesia, Japan, Malaysia, South Korea, Taiwan, and Thailand. Source: *Consensus Forecasts*.

[3] Current less initial estimate of seasonally adjusted quarterly percentage change in production GDP.

commentators to obtain their own readings. In addition, we provide room for monetary conditions to constantly reflect new data, and update our projections quarterly on the basis of a considered assessment of the relevant information. The recent adjustment in monetary conditions, due, in part, to the unexpectedly large decline in GDP in the March quarter, was an example of starting point uncertainty being absorbed by financial market prices.

Uncertainty about how the economy works

Another source of uncertainty relates to exactly how the economy operates. Unlike engineers, economists have few precise laws to work with. Economic projections are instead based on a stylised view of the complex workings of an economy. Added to this stylised view are judgements based on past behaviour and current events.

The Bank has invested in economic models of the New Zealand economy, and in a range of monitoring and projection tools. Nonetheless, economic models are no more than simple abstractions, and can never capture the full complexity of an economy. For example, formal economic models generally do not capture well the effects of changing consumer and business sentiment, which can have a significant bearing on the course of economic activity in the short run. Also, the behaviour of the economy – including responses to policy-makers' own actions – may have changed in ways that have not yet been revealed in the historical data.

One such example relates to behavioural changes following the significant structural reforms in New Zealand. Another relates to the link between exchange rate movements and retail prices. The appreciation of the New Zealand dollar between 1994 and early 1997 did not result in as much downward movement in tradeables prices as earlier experience would have suggested, and – so far – the depreciation of the exchange rate from the 1997 peak has not been reflected as much as might have been expected in rising tradeables prices. A fuller discussion of the changing role of the exchange rate can be found in the Box in Section 6.

Because formal models have these limitations, the Bank uses a mix of empirical research, economic theory, and judgement when developing projections. Importantly, it is the forecasters who make the projections, not economic models.

Implications for the conduct of monetary policy

Allowing for uncertainty in the way we formulate and implement monetary policy will always imply accepting a certain amount of price and output variability, in addition to fluctuations in monetary conditions. Our monetary policy framework accommodates uncertainty in a number of ways:

- Our economic projections, and the monetary policy settings derived from them, are fully reviewed and updated quarterly.
- Those projections, and the assumptions and information on which they are based, are published. This provides financial markets with a 'benchmark', against which they can assess new information as it comes to hand. They can then respond flexibly to that information, knowing the price stability objective of monetary policy.
- We identify some of the factors we can foresee as having the potential to result in different outcomes and provide guidance on their likely implications for monetary policy. Where there are clearly identifiable major uncertainties that could generate quite different results, we illustrate those scenarios (see Section 7).
- The inflation target is expressed as a range of 0 to 3 percent annual inflation in the CPI excluding credit services. Empirical research suggests that this band width should be sufficient to accommodate the great majority of the shocks that typically hit the New Zealand economy. That is to say, when a surprise does occur, the resulting temporary fluctuations in inflation should be able to be absorbed without breaching the target band. We also aim for the mid-point of the target range when setting policy, in order to maximise the probability of keeping CPIX inflation within it. If a breach of the target band does occur, the Bank's credibility should not be threatened provided that the explanation for the breach is seen as reasonable, and that clear steps are being taken to deal with it.

With this sort of framework in place, there is no need for the Bank to react immediately to every piece of new information that becomes available. Rather, once a quarter we undertake a comprehensive review of recent developments and update the projection. In between our quarterly projection updates, which are published in our *Monetary Policy Statements,* new information will tend to be reflected in movements in financial market prices more or less continuously. The better informed are financial markets about our likely reactions to new information, the greater the probability that such movements in financial market prices will be consistent with our policy interests. This means that it should only be very occasionally that the Bank finds it necessary to intervene between formal quarterly *Statements*.

These considerations lie behind the emphasis we give to the MCI as being a broad, rather than a precise, indicator of monetary conditions. Similarly, the TWI is a broad indicator of the effective exchange rate, rather than an exact measure. The MCI is a rule-of-thumb developed to deal with uncertainty related to exchange rate and interest rate behaviour. The path for short-term nominal interest rates contained in our economic projections is conditional on the path we forecast for the nominal exchange rate (and vice versa), since both are important determinants of inflation. But forecasting exchange rate dynamics is particularly difficult, and the eventual mix of short-run changes in interest and exchange rates is often different from what our models suggest. When this occurs, the MCI is often a useful guide as to how much, all other things remaining equal, nominal short-term interest rates need to change to keep overall monetary conditions constant.

Of course, seldom if ever do all other things remain equal. Movements in the MCI need to be interpreted in the context of everything else that is happening in the economy that has the potential to influence inflation pressures in the period ahead. When things are evolving differently from the Bank's most recent projection, it is useful that the MCI moves in accordance with the new information about inflation pressures. These points have been amply evident in the most recent quarter or two where the MCI has eased significantly more than our most recent projections had suggested appropriate, driven by information suggesting a materially weaker economy than our projections had shown.

One question that might arise from this discussion is: if policy settings are subject to so much uncertainty, then why publish them? Our view is that it is better for the Bank to do what it can to communicate the basis on which policy is being formed, rather than hide its assumptions from the public. We believe that if our assumptions are clearly identified and articulated, the public may have a better understanding of the implications for monetary policy when future outcomes and events do not evolve as projected.

Other central banks, for example, the Bank of England and the US Federal Reserve, also provide financial markets with information about how they are thinking about prospective economic developments by, for example, publishing the minutes of their monetary policy committees, public testimonies, and speech-making. That we go further, and publish detailed projections, reflects the importance and value we attach to being transparent in our monetary policy-making. To the extent that, by being transparent, we can lessen one source of uncertainty – that is, uncertainty about our own reactions – it should be beneficial for both the financial markets and the economy more generally.

3. Demand influences

World outlook

Since the May *Monetary Policy Statement,* the global economic outlook has continued to deteriorate substantially. Many of the countries in Asia have slipped into recession, while growth rates in the United States and Australia have slowed. The consensus outlook is for industrial production growth in New Zealand's major trading partners to continue to slow over the remainder of 1998. Beyond this, a rise in world growth is anticipated, largely due to the sharp contraction in several Asian economies coming to an end (see Table 2).

In Asia, the reduced ability of many of the region's banks to intermediate credit, and hence facilitate economic activity, remains a concern. Regional financial systems have been severely disrupted, and restoring health to the banking system will likely take several years and a significant capital injection. The corporate sector in Asia also requires substantial new capital to manage its considerable debt burden. This large and growing stock of corporate debt is restricting the sector's ability to access credit and support demand.

China's economy is still expected to post reasonable growth, which is crucial in supporting regional demand, and in absorbing the significant numbers of workers laid-off in the restructuring of state enterprises. However, consensus growth projections for China are constantly being lowered, with some more recent reports suggesting the Chinese economy may weaken further. In Japan, consumer confidence remains weak despite loose monetary and fiscal policy. A sustained recovery in Japanese consumption growth would greatly assist the Asian region, but such a recovery is proving elusive. Consumption growth remains tempered by rising unemployment and job uncertainty, and ongoing industry rationalisation, especially in the banking and service sectors.

The problems within Asia are being felt in Australia and, to a lesser degree, in the United States, where economic growth is slowing. At present, though, domestic demand is expected to remain healthy in each country, keeping production close to respective sustainable levels. Australia, like New Zealand, appears to have had some success in redirecting exports to the United States and to Europe. The key concern now for Australia is whether its recent sudden downturn in domestic confidence will lead to a more pronounced slowdown in domestic activity growth.

The consensus view for the US economy is that it is headed for a soft landing, but the outlook is complicated. There are signs that the US economy may be overheating. Equity prices have been elevated, increases in wages have been rising, and the housing market is firm. On the other hand, the Asian downturn has seen US export growth fall off, and allowed the Federal Reserve to forestall a (previously much anticipated) tightening in monetary policy. Weak Asian demand has also lowered commodity prices and consequently

Table 2

Consensus growth projections for Asian GDP[4]

	% share of	*Calendar year annual average percentage change*		
Country	***NZ exports***	***1997***	***1998***	***1999***
Japan	14	0.8	-1.4	0.6
South Korea	4	5.5	-4.3	1.1
China	3	8.8	7.4	7.7
Hong Kong	3	5.3	-2.2	0.9
Taiwan	3	6.8	5.4	5.5
Malaysia	2	7.8	-2.6	-0.1
Indonesia	1	4.6	-15.1	-2.0
Thailand	1	-0.3	-7.2	-0.2
Asia	***31***	***3.6***	***-1.3***	***1.6***

[4] Although Table 2 presents regional GDP figures, New Zealand's export performance is largely driven by trading-partner industrial production growth. The mean of the *Consensus* industrial production growth forecasts have been used in these projections, as outlined in Figure 5.

held US inflation down. In addition, a 'flight to quality' has contributed to strength in the US dollar, further dampening import prices.

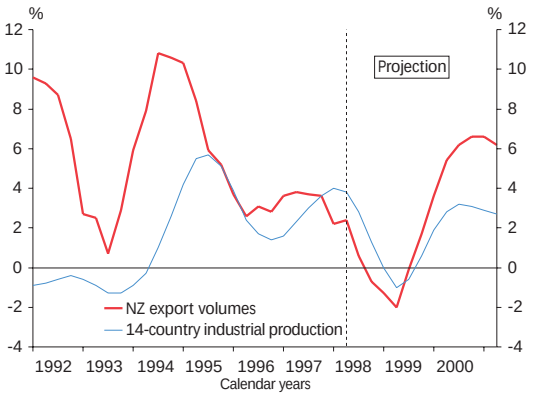
Looking ahead, a primary concern for the United States will be the possibility of a sharp equity price correction, whether triggered by a tightening in monetary policy or by other factors. A sharp correction could well undermine domestic confidence and make for a harder landing in the United States than most now expect.

Europe appears more insulated from Asia, although European banks have considerable exposures in the Asian region. Continental Europe is at an earlier stage of its business cycle, with consumption expected to remain robust, and bolstered by the macro-economic reforms leading up to monetary union. The United Kingdom, by contrast, is further along its business cycle. Overall growth is beginning to slow through the impact of the strong British pound, but consumer demand continues to support the economy.

Figure 5

New Zealand export growth and 14-country industrial production growth[5]

(annual average percentage change)



[5] The 14-country measure comprises Australia, China, France, Germany, Hong Kong SAR, Indonesia, Italy, Japan, Malaysia, South Korea, Taiwan, Thailand, United Kingdom, and United States, weighted by NZ export shares. Sources: *Consensus Forecasts* and Statistics New Zealand.

Ongoing uncertainty and fragility remain evident in the consensus view of the world. If the US and Chinese economies, in particular, turn down more sharply than projected, both the length and depth of the Asian recession will surely be magnified. The Bank must remain alert to such possibilities – Section 7 of this *Statement* outlines a stylised scenario of weaker world growth, to explore how much the Bank's projections for New Zealand output, inflation, and monetary conditions might change if the world outlook were different.

Exports

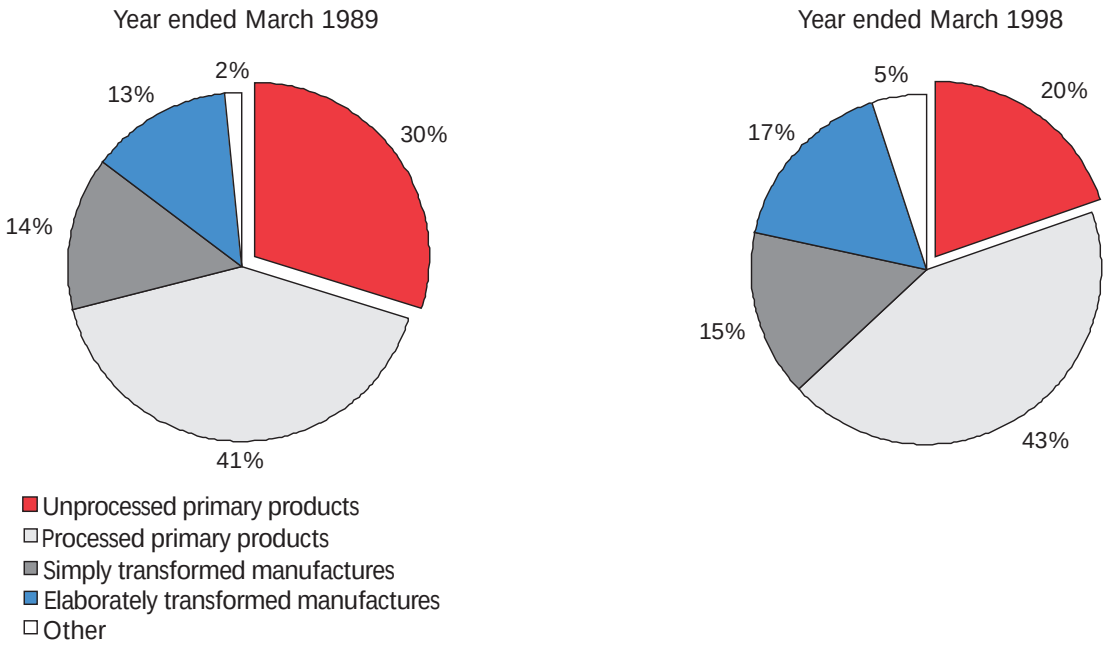
The outlook for exports over the remainder of 1998 has deteriorated since the last *Monetary Policy Statement*. A sharper-than-expected slump in Asian demand and the impact of the drought have led to a downward revision in forecast export volumes. However, the outlook across the various export sectors is diverse. Volumes of beef and lamb exports will be depressed by the lingering effects of the drought, but not all primary products have been adversely affected by the weather. Exports of intermediate goods to Asia have fallen off, and some basic commodity exports, eg forestry and aluminium, have been hard hit.

The strength and timing of a pick-up in New Zealand's basic commodity exports will, to an important extent, be driven by the timing and strength of an Asian export-led recovery. In the background, though, a shift in the composition of New Zealand exports away from unprocessed primary products and towards more value-added products has gradually been occurring (see Figure 6), with these exports having more success in Australia, the United States and European markets. The Asian downturn will likely accelerate this shift, as growth in industrialised countries is forecast to remain reasonably healthy, and New Zealand's competitiveness against those countries has been assisted by a substantial real exchange rate depreciation.

Figure 6

Merchandise exports by major product groups[6]

(percent of total goods exports)

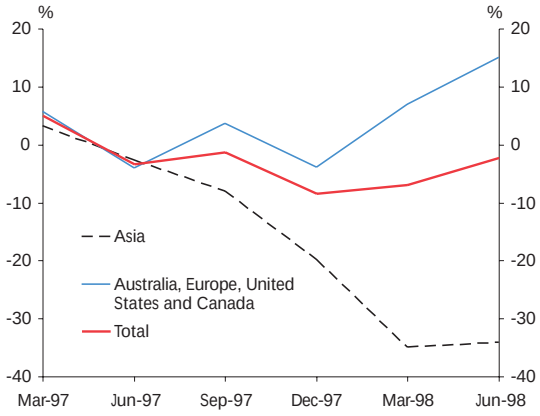


For tourism also, lower airfares (partly due to lower fuel costs) and the depreciation of the NZ dollar will boost arrivals from the United States, Australia and Europe, partially offsetting the decline in the number of visitors from Asia. Visitor arrivals from these regions are already showing strong increases (see Figure 7). Advance bookings and seasonal factors mean that it could take a year or so before the full benefits of the depreciation appear. Meanwhile, the lower NZ dollar will be encouraging higher expenditure within New Zealand, particularly by US and European visitors. In addition, a number of imminent major events should raise New Zealand's profile as a tourist destination. These events include, for example, the APEC meetings and the America's Cup in 1999, the Sydney Olympics in 2000, and the Millennium celebrations.

Figure 7

Overseas visitor arrivals[7]

(annual average percentage change)



[6] Source: Statistics New Zealand and New Zealand Trade Development Board.

[7] Source: Statistics New Zealand.

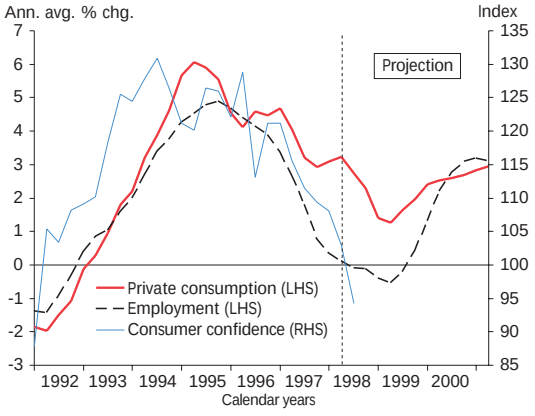
Domestic demand

Household expenditure

Private consumption growth is expected to remain subdued over the remainder of 1998. Job insecurity, stemming from a weaker labour market and uncertainty generated by the Asian crisis, and rising household debt ratios are continuing to weigh on spending decisions (see Figure 8). Many business contacts have commented on the weak retail sector, and say they expect little stimulus in the short term from the recent tax cuts.

Figure 8

Consumption and employment growth, and consumer confidence[8]



Falling house prices will lower household wealth and further restrain consumption growth. Real house prices are expected to fall by around 5 percent in the year to March 1999, before levelling off subsequently. In 1999 and 2000, we project rising disposable incomes and renewed employment growth to underpin a recovery in household spending. However, spending growth will not be as strong as during the 1994-96 period, as the positive wealth effects arising then from rising house prices will be absent, and household indebtedness will be at higher levels.

Household savings rates are projected to rise gradually over the projection period. Over the near term, households will save for precautionary reasons, as they weather a period of job and income insecurity. But more generally, increased public focus on retirement income, and some increase in the self-funding of health and education, are heightening awareness of the need to save. Over the medium term, lower expected capital gains from housing will encourage households to build up a more diversified portfolio of financial and real assets. For these reasons, we continue to expect the July tax cuts and cashed-up AMP shares partly to be saved or used to retire debt, as well as being used to lift consumption.

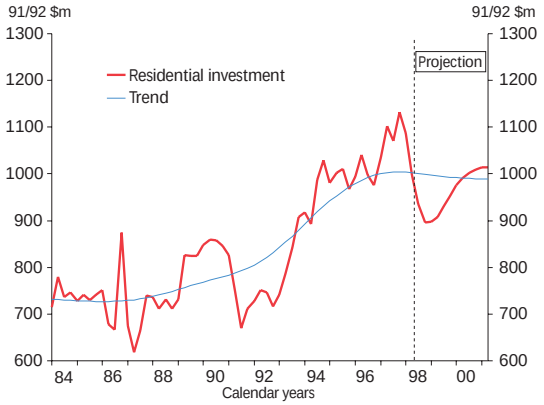
Residential investment

Household expenditure on dwellings is projected to fall sharply through the remainder of 1998. The factors which underpinned strong residential investment recently have now largely reversed: net immigration has turned into net emigration, house prices are falling, and expected returns on property investment are subdued. In addition, households' gearing has increased markedly, to a level where households will probably begin to feel cautious about assuming more debt.

Residential investment is projected to pick up gradually through 1999. The high level of housing investment during the last five years appears to have led to a state of oversupply in some areas. This oversupply will have to unwind before a return to rapid investment growth can be anticipated (see Figure 9).

Figure 9

Quarterly real residential investment[9]



[8] Source: WestpacTrust McDermott Miller consumer confidence index.

[9] Trend is based on a Hodrick-Prescott filter. Source: Statistics New Zealand, RBNZ trend estimate.

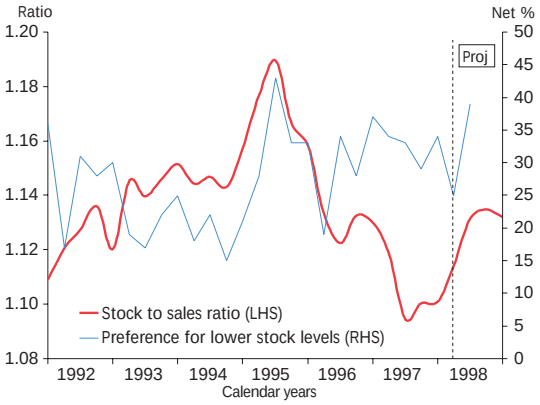
Business investment

The outlook for business investment has deteriorated since the May *Monetary Policy Statement*, with business confidence and investment intentions continuing to remain weak. Reduced international demand, a rise in stocks (see Figure 10), and the delayed impact of past monetary tightness have all led to a deferment of business investment in the short term.

Nonetheless, business investment is expected to recover from 1999 onwards, as the effects of recent and projected easings in monetary conditions begin to boost domestic demand, and as growth prospects abroad improve. As business sentiment and profitability levels recover, firms, assisted by lower real interest rates, will undertake new investment spending on plant and machinery, commercial construction, and transport equipment. The level of government investment (both central and local) is also expected to hold up due to continued investment in the health and education sectors, and in infrastructure projects.

Figure 10

Stocks to sales ratio[10]



[10] The stocks to sales ratio is the level of real manufacturing, retail and wholesales stocks, divided by real total private consumption (all s.a.). Preference for lower stock levels is a QSBO measure, indicating the net percentage of firms who consider their stock levels too high. Source: New Zealand Institute of Economic Research and Statistics New Zealand.

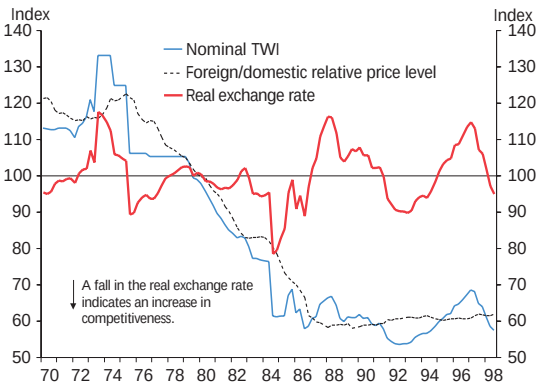
We expect that when confidence improves and prospects for demand pick up over 1999, business investment will rebound relatively quickly. There is a combination of factors which lead us to this view, including that:

- capacity utilisation has only recently declined to its long-term trend level, indicating that growing demand pressures will quickly absorb any spare capacity, thus encouraging further investment for expansion;
- our business contacts continue to report that, on the whole, their investment strategy will be one of deferment, rather than outright cancellation; and
- structural developments in new or growing industries, such as primary food and log processing, and electricity generation, will necessitate ongoing investment.

The New Zealand economy is more flexible than in previous years, and competitiveness has improved of late, as the real exchange rate has fallen significantly from its April 1997 peak (see Figure 11). Unlike the severe downturn in investment in 1991, when business insolvencies were particularly widespread, indications now are that firms' balance sheets are in a relatively better state, therefore reducing the chance of a sharp decline in investment activity. New Zealand firms are

Figure 11

Nominal and real trade-weighted exchange rates, and relative consumer prices[11]



[11] September 1998 quarter is estimated. The real exchange rate series is based on the average of March 1970 to June 1998 set to equal 100.

now considerably better-positioned to weather the ongoing Asian difficulties, as well as to take advantage of opportunities presenting themselves in other international markets. As the problems in Asia begin to subside, New Zealand exporters should be well-placed to benefit from any recovery.

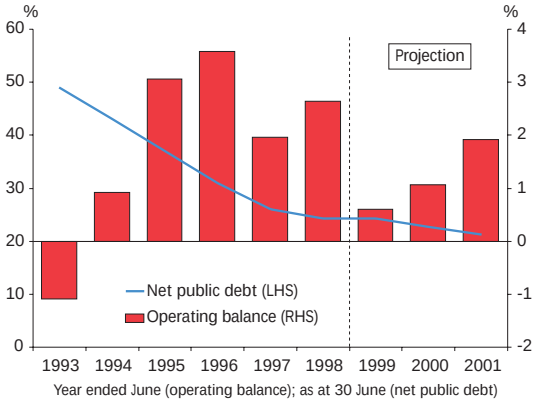
Fiscal policy

We continue to expect that fiscal policy[12] will be a key influence on aggregate demand, particularly early on in the projection period. Importantly, we monitor the *change* in fiscal stance – rather than the *level* of spending or operating balance on their own – to gauge the impact of fiscal policy on economic growth.

Figure 12

The operating balance and net public debt

(percent of GDP)



The bulk of the stimulatory impact occurs in the 1998/99 fiscal year, stemming principally from the July 1998 tax cuts. The tax cuts will boost disposable incomes directly – by over $1 billion in the first fiscal year – and tend to underpin household consumption expenditure and consumer confidence more generally. Additionally, spending plans outlined in the Coalition Agreement, and detailed in the 1998 *Budget*, will support economic activity directly, particularly in the health and education sectors.

In later years, the operating balance reverts to an increasing surplus track, indicating that the government sector will tend to have a more neutral impact on aggregate demand, as growth in government consumption and investment activity falls behind economic growth generated by the private sector.

[12] Our fiscal projections are based on the revenue and spending parameters announced in the Government's May 1998 *Budget Economic and Fiscal Update (BEFU)*. We have made the usual adjustments to reflect differences in our macro-economic outlook relative to the outlook on which the *BEFU* is based. Additionally, there have been some minor modifications to account for:

- the Government's $300 million savings package, announced after the *BEFU*, and
- differences in the 1997/98 base year, as reflected in the Government's Financial Statements for the 11 months ended 31 May 1998.

4. Meeting the demand

Productive capacity

Medium-term inflation pressures are influenced principally by the output gap. The output gap is defined as the level of demand *relative to* the economy's supply capacity, or potential output. For example, if demand is weak relative to potential output a negative output gap is said to exist, and inflation will generally fall.

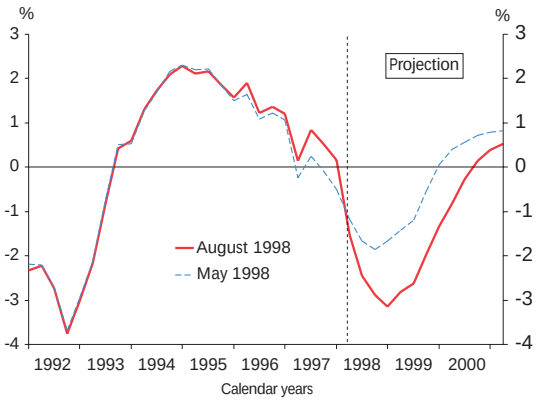
The task of forecasting potential output is complicated by the fact that it cannot be directly observed. Rather, potential output must be estimated, using actual output and other indicators of capacity including inflation, surveyed capacity utilisation and the state of the labour market. The current indicators of potential output must also be reconciled with the outlook for the drivers of potential output. These drivers are the capital stock, the workforce, and their productivity.

At present, all indicators point to a lower level of potential output over the near term than estimated for the May *Statement*. However, projected demand over the near term has been lowered by even more than has potential output, meaning that the output gap is more negative (ie there is more excess supply) than in the May *Monetary Policy Statement*. The projected negative output gap reaches around 3 percent of potential GDP (see Figure 13). This greater, more persistent, excess capacity places more downward pressure on inflation than projected in May (see Section 6).

Figure 13

Output gap

(percent of potential GDP)



An economy's potential growth rate is determined by how fast the workforce and the capital stock grow, and by how much more efficiently they can produce output. Through the projection period, potential growth is sustained mainly by growth in the workforce. Labour force growth picks up as a result of a return to net immigration and rising labour force participation. Robust business investment growth from 1999 will boost the capital stock, further supporting potential growth. Additionally, we forecast the productivity of labour and capital combined to grow a little faster than over recent history, as New Zealand gradually 'catches up' with technological best-practice in countries such as the United States.[13]

Balance of payments

While the output gap measures the difference between total demand and the economy's capacity to supply, the current account balance measures the difference between domestic investment and domestic savings. If domestic savings are insufficient to fund domestic investment, the funding shortfall must be met by overseas investors. This implies a net capital inflow and a current account deficit. Conversely, if domestic investment is insufficient to 'soak up' domestic savings, those excess savings must be invested offshore, implying a net capital outflow and a current account surplus.

New Zealand has run successive current account deficits since the early-1970s, thereby building up a sizeable net stock of foreign liabilities. As this net stock has grown, so has its earnings, as reflected in the growing investment income deficit in the current account. In the past ten years, the investment income deficit has grown from $3.5 billion (equivalent to 5.6 percent of GDP) for the year to March 1988, to $7.7 billion (7.9 percent of GDP) for the year to March 1998.

Up until recently, net receipts by New Zealand entities have been sufficient to keep the overall current account deficit around 4 percent of GDP. In other words, growth in New Zealand's net exports of goods and services and net over-

[13] See Conway P. and B. Hunt (1998) 'Productivity Growth in New Zealand: economic reform and the convergence hypothesis', *Reserve Bank of New Zealand Discussion Paper*, forthcoming.

seas transfer payments had offset the growth in the investment income deficit. Over the past year, however, growth in those net receipts has progressively fallen short of that in the investment income deficit, resulting in the overall current account deficit rising to more than 7 percent of GDP.

A continuing rise in the deficit at such a pace is not sustainable indefinitely. Either growth in domestic investment must slow down, or domestic savings must rise. These adjustments are usually brought about, or encouraged by, a fall in the real exchange rate coupled with a rise in short-term interest rates. The former will assist by improving the competitiveness of domestic producers, while the latter will boost incentives to save, rather than to invest or consume. Movements in interest and exchange rates of this sort have been underway in New Zealand since about the middle of 1997.

Adjustments in savings and investment are an important feature of this projection, and are reflected in the projected improvement in the current account deficit, from more than 7 percent of GDP at present, to less than 4 percent of GDP by 2001 (see Figure 14). Households are projected both to reduce their investment in dwellings and to increase their savings rate. Businesses are also expected to defer their investment plans until demand picks up in 1999, at which time their earnings will also begin to rise. Finally, the government fiscal surplus is projected to begin rising from 1999, while the growth rate of government investment is projected to slow from its recent high level.

In addition to these shifts in savings and investment behaviour, a number of other factors will also assist in lowering the current account deficit. The terms of trade are projected to improve somewhat over 1999-2000, as export prices rise at a faster rate than import prices (see Figure 15). Furthermore, the projected fall in interest rates will gradually reduce interest outflows on NZ dollar debt held by foreigners. Overall, the conditions are well in place for a substantial reduction in New Zealand's external deficit over the projection period.

Figure 14

Current account balance

(as a ratio to GDP)

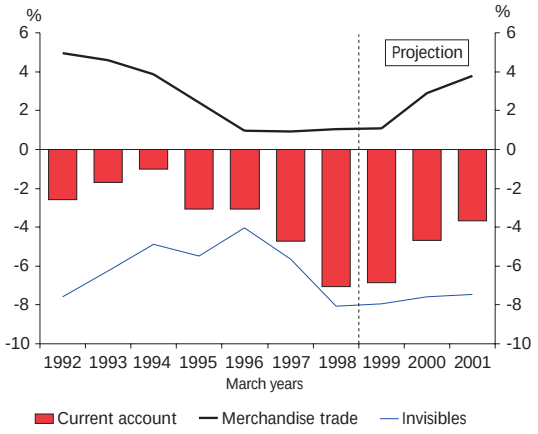
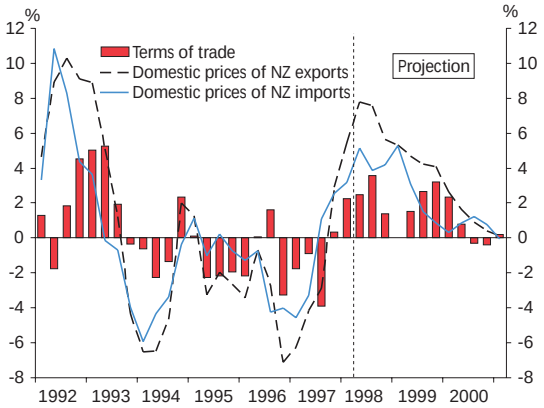


Figure 15

New Zealand dollar import and export prices, and the terms of trade

(annual percentage change)



5. Financial sector

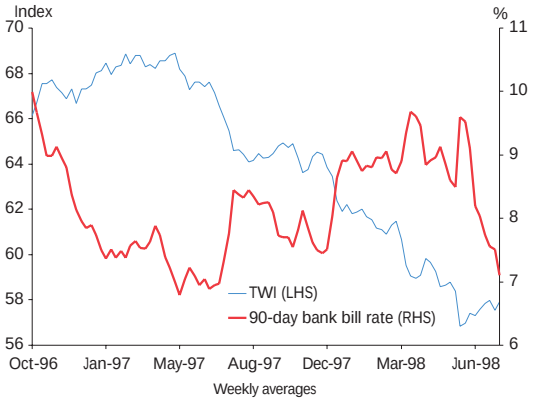
Monetary policy and financial markets

Monetary conditions have eased considerably over the last quarter, with a large proportion of this easing coming in the form of lower interest rates. Several forces have been at work: most notably, international economic and financial events, and domestic monetary policy developments.

Events in Asia have dominated the economic news. Concerns over the impact of the economic and financial shocks have delivered lower bond rates around the Western world, as financial market participants revised their expectations of the future stance of monetary policy toward an easing direction. New Zealand bond rates have followed this trend (see Figure 16).

Figure 16

90-day bank bill rate and the TWI



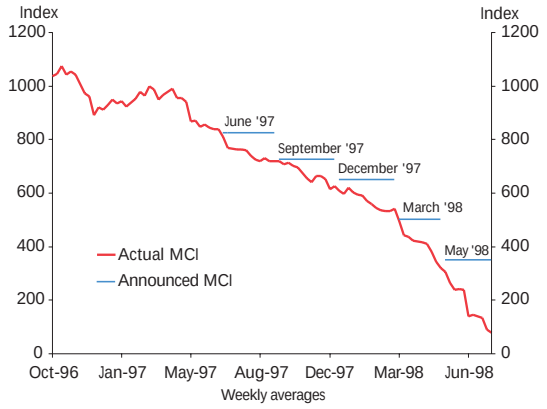
In addition, the commodity dependence of the Australian and New Zealand economies, and our strong trade links with Asia, have meant that the currencies of both have fallen in value quite sharply. The exchange rate between the New Zealand and Australian dollars has traded in a very narrow range over the last six months or so, as both have fallen in tandem with the fortunes of the Japanese yen. Implicitly, financial markets have taken the view that further easing in monetary conditions would be warranted in each country given the Asian downturn, and that these easings would be similarly sized.

From its peak in April 1997, the New Zealand TWI has depreciated markedly in a succession of quick adjustments – at times in response to foreign shocks, and at times in response to explicit monetary policy changes. The interest rate response to the TWI falls was largely determined by the financial market's perceptions of the Bank's willingness to accept an overall decline in the MCI. As a result, falls in the TWI have, at times, been initially accompanied by rises in the 90-day bill rate, which have partly offset the immediate downward impact of the TWI on the MCI.

Since the May 1998 *Monetary Policy Statement*, the MCI has fallen substantially. This fall has occurred in response to new information. Pessimism regarding the international outlook has increased, and locally, the March quarter GDP result was considerably weaker than expected. The financial markets' assessment of the impact of this new information on future inflation pressure, and hence on the stance of monetary policy, was similar to our own (see Figure 17).

Figure 17

Actual and announced MCI

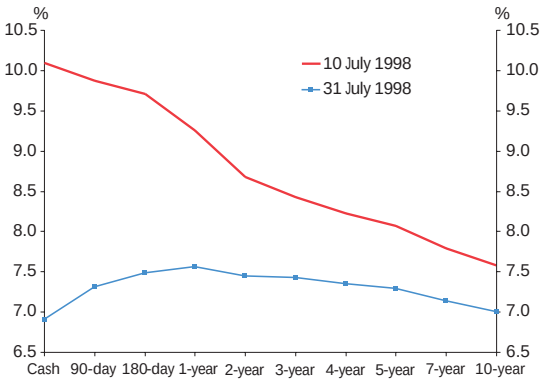


At the release of the May *Monetary Policy Statement*, the Bank announced a change in the way policy would be implemented, shifting to a system in which any policy signals or comments would be made at a pre-specified time – the morning following the weekly meeting of our Monetary Policy Committee. Since the May *Monetary Policy Statement*, there has been only one such statement. Overall, the change to a weekly implementation framework has worked well, allowing the markets considerable scope to move monetary conditions in response to expected developments in inflation.

As short-term interest rates have fallen back to levels not seen since mid-1997, there has been a marked change in the shape of the interest rate yield curve. For much of the last few years, the yield curve was quite steeply downward-sloping, encouraging mortgage borrowers to shift from floating-rate debt to fixed-rate debt. Access to new supplies of NZ-dollar funding through the Eurokiwi bond market[14] helped make this possible. Around 60 percent of all residential mortgages are now fixed-rate, as compared to 7 percent in 1994, and there has been a similar shift by rural and commercial borrowers. This shift toward fixed-rate loans is likely to mean that borrowers will reap more slowly the benefits of lower short-term interest rates than has been the case in previous cycles.

Figure 18

Wholesale interest rate yield curve[15]



The interest rate yield curve has now flattened to the point where short-term wholesale rates are lower than one- and two-year wholesale rates (see Figure 18). This implies floating mortgage rates could soon be at, or below, two- to three-year fixed rates. Such a development could well prompt a shift in new mortgage business back towards the floating-rate product.

[14] For details of this market, see Eckhold, K. (1998) "The Eurokiwi Bond Market", *Reserve Bank Bulletin*, June 1998.

[15] Bank bill yields for terms of less than one year. Interest swaps for longer terms. Source: Telerate.

Financing of activity

In most industrialised countries, including New Zealand, financial activity "greases the wheels of commerce" – responding to, and supporting the level and pace of, economic activity. Constraints on the availability of finance, though, can also independently influence activity. At times of economic stress, for example, financial institutions may curtail lending, which impedes economic growth. An extreme example of this effect is the recent experience in East Asia, where non-performing loans and rising risk premia on international borrowing have resulted in major 'credit crunches' (eg refusal by banks to establish letters of credit for importers in those countries).

In New Zealand, the recent business cycle slowdown has led bankers to take their usual credit precautions. However, although there is a credit slowdown underway, nothing at present points to credit supply itself becoming a major additional constraint on activity. Accumulation of inventories and other signs of cashflow problems are being closely monitored, but good lending propositions are still being keenly sought by banks.

The limited reports of binding credit supply constraints that do exist appear either to be sector-specific, or to relate to exporters who are heavily dependent on Asian markets (for example, forest product exporters). With quite marked falloffs in sales to some overseas markets, and with fierce competition in the domestic economy, debt-servicing capacity is showing signs of strain in some sectors. Banks are apparently taking early steps in the management of the financial situations of business borrowers who are under pressure. Again, although loan losses will rise this year – from their recent very low levels – there is nothing exceptional about the current experience, given the economy's position in the business cycle.

Financial institutions also provide products that enable exporters to manage exchange rate risk. Typically, these products enable exporters to buy New Zealand dollars against foreign exchange, in advance of their actual foreign-currency export receipts. This foreign exchange 'cover' effectively smoothes exporters' revenue flows, by removing any potential exchange rate volatility. Traditionally, foreign exchange contracts have been taken for a proportion of the export

receipts expected in the next year or so. However, following the 1993-97 experience of a persistently rising exchange rate, exporters have tended to seek cover for longer periods ahead. Subsequently, the exchange rate's steep fall since early 1997 has resulted in a substantial increase in the NZ dollar value of the foreign exchange contracts,[16] and corresponding losses of potential export earnings. The banks who have provided these contracts are now significantly more exposed to exporter customers, and this will be using up some of these customers' credit facilities. Exporters in a weaker financial position, particularly those facing lower export prices or sales, may be finding this is a short-term constraint on their spending.

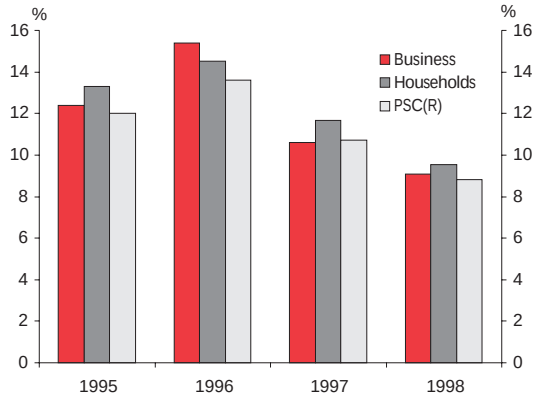
For most exporters, however, the main impact of their foreign exchange cover will simply be to lower their returns compared to what they might have achieved without cover. This effect is of course the opposite of the substantial gains many achieved on their foreign exchange cover between 1993 to 1997, when the exchange rate rose. The impact for the economy overall is to delay the full effect of the currency's recent sharp depreciation.

Alongside these limited constraints on the supply of credit, the demand for credit is slowing more generally (see Figure 19). The years of strong growth from 1993-96 left business balance sheets in generally good shape. Since then, growth in demand for credit has declined as the past investment 'catch-up' has played out and the economy has slowed. Growth in demand for business credit is likely to remain weak (other than for financing stock accumulation or increased receivables) over the next year. Some of the current slowdown in the measured rate of private sector credit (PSC) growth is due to businesses substituting away from bank lending, by obtaining financing directly from overseas (this is especially true for larger businesses) or from other sources not included in PSC.

Figure 19

Business lending, claims on households, and private sector credit[17]

(annual average percentage change)



Borrowing by households surged in the four years to mid-1997. Currently, though, labour and housing market softness appear to have led households to reconsider whether their indebtedness should continue to climb at similarly high rates. Lending margins are consequently coming under increased pressure, and lenders to households are likely to respond by searching for efficiencies. These strategies will focus less on gaining market share and more on restraining costs. Household borrowing is expected to pick up later in 1999, in response to the lower interest rate environment and gradually improving employment prospects.

[16] The banks who provided the contracts have, however, generally hedged these contracts with other counterparties, and hence remain in a broadly neutral financial position overall.

[17] Data is for lending to residents. The 1995 data includes from July to December, and 1998 includes from January to May. 'Business' excludes the finance and insurance sectors; 1997 growth is estimated. Source: RBNZ.

6. Inflation

Overview

In the year to June 1998, the CPI excluding credit services (CPIX) increased by 1.7 percent. We expect CPIX inflation to track marginally below the mid-point of the Bank's 0 to 3 percent inflation target range through the remainder of 1998, assisted by falls in the prices of telephone toll calls, petrol, and cars. Through calendar 1999, CPIX inflation is projected to rise somewhat, largely as NZ dollar import price rises feed through into consumer prices. For calendar 2000, CPIX inflation is projected to fall again to slightly below the mid-point of the target range, under the influence of the current and projected negative output gap.

Overall, the balance of inflation pressure over the medium term is on the downside. Recent data on domestic economic activity suggests that a state of considerable excess capacity has emerged, which will restrain inflationary pressures for the next two years or so. The excess capacity will lower margins, which, together with subdued world import prices, will largely offset the impact of the recent exchange rate depreciation on CPIX inflation.

As a result, we project monetary conditions to continue to ease until the middle of next year. Beyond this, excess demand is projected to re-emerge in the economy by around mid-2000, leading monetary conditions to begin to tighten again in order to pre-empt emerging inflationary pressures.

Recent developments

The CPIX increased by 0.3 percent in the June quarter, bringing CPIX inflation to 1.7 percent for the year to June 1998 – the same as for the year ended March 1998.

The CPI comprises over three hundred individual components. Occasionally, some components have a disproportionately large influence on the overall CPIX because they move by an unusually large amount. For example, telephone toll call charges – whose weight in the CPIX regimen is less than 1 percent – fell by around 20 percent in both the March and June quarters of 1998. These falls, by themselves, took more than 0.1 percentage points off quarterly CPIX inflation in each quarter.

Of course, relative price changes occur all the time. To the extent that one-off, non-monetary factors (eg increased competition in the toll calls market) are responsible, it makes sense for monetary policy to focus more on measures of 'general' inflation. The Bank has developed several alternative inflation measures that do just that. Two such measures are the 'weighted median' and the 'trimmed mean'. These measures are affected less by extreme movements in particular items within the CPIX regimen than is the standard (weighted average, CPIX) measure of inflation.[18] Extreme relative price movements are fairly common, and the weighted median and trimmed mean measures reduce their influence, focusing instead on the 'bulk' of price movements in the middle of the distribution of price changes.

Table 3 shows these alternative measures of inflation, with both the trimmed mean and weighted median measures above the CPIX. The table also shows several measures of year-ahead inflation expectations, which might be expected to reflect general inflation pressures rather than particular large price movements. Other than for the Reserve Bank's survey, inflation expectations remain above actual inflation.

The importance of large movements in a small number of items can be seen in Figure 20. The figure shows the distribution of annual percentage changes in the CPIX regimen items for the year to June 1998. The height of each bar represents the combined regimen weight of the items whose price changes were within the range indicated. For example, items that moved down by more than 4 percent made up just over 10 percent of the regimen. The median – often described as a 'robust' measure of inflation – shows a higher inflation rate over the last year (and in the June 1998 quarter) than CPIX inflation, and appears to the right of the CPIX in the distribution.

[18] See Roger S., (1995) "Measures of underlying inflation in New Zealand, 1981-95", *Reserve Bank of New Zealand Discussion Paper* G95/5 and Roger S., (1997) "A robust measure of core inflation in New Zealand, 1949-96", *Reserve Bank of New Zealand Discussion Paper* G97/7.

Table 3

Alternative measures of inflation and inflation expectations

Inflation measure	Percentage changes: June 1998 quarter	Percentage changes: Year to June 1998
CPIX	0.3	1.7
Weighted median (CPIX regimen)	0.5	2.2
10% trimmed mean (CPIX regimen)	0.4	1.8

Year-ahead inflation expectations, June quarter 1998[19]

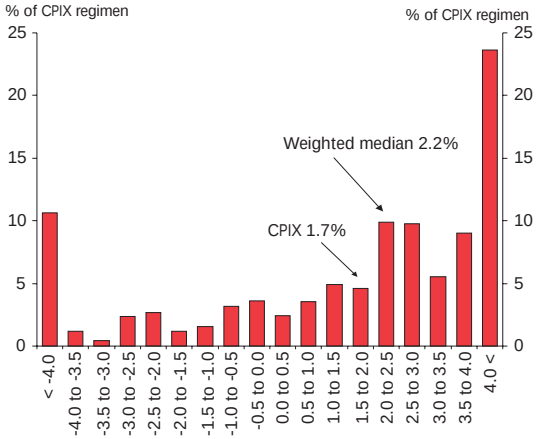
Survey organisation	Expected inflation in year ahead (%)
Reserve Bank of New Zealand	1.5
National Bank of New Zealand	2.3
Marketscope	4.0

Overall, the alternative inflation measures caution against the potentially misleading effect for monetary policy of large, one-off relative price movements. Recently, the 'outliers', or extreme movers, in quarterly CPIX inflation have had a net downward influence, and may obscure the trend in general inflation.

Figure 20

Distribution of annual price changes in CPIX regimen items[20]

(year to June 1998)



Short-term outlook

For the September and December quarters of 1998, we expect CPIX inflation to be subdued, at 0.2 percent and 0.3 percent, respectively. This results in forecast annual inflation falling slightly below the mid-point of the target range, to 1.2 percent for the year to September, and to 1.0 percent for the year to December. The September and December quarter estimates have been revised down from our May estimates, based on the following key influences.

- In the Transportation group, we expect the removal of tariffs on passenger motor vehicles to lead to falls in new and used car prices over the September quarter. Also, further falls in the retail price of petrol will assist.
- In the Household Operations group, intense competition in the telecommunications market is expected to lead to further falls in telephone toll call charges.
- In the Housing group, average new house prices and construction expenses have begun to ease.

Goods and services whose prices are determined, or largely determined, in international markets are referred to as 'tradeables'. Tradeables price inflation over the next two quarters will be held down by car and petrol prices in particular, as well as by weak domestic demand. However, in 1999 tradeables prices will be pushed up by rising NZ dollar import prices, as the past nominal exchange rate depreciation more than offsets the current weakness in international commodity prices (see Box).

[19] The Reserve Bank of New Zealand conducts a survey of selected sectoral experts, the National Bank of New Zealand surveys business clients, and Marketscope surveys households.

[20] RBNZ calculation.

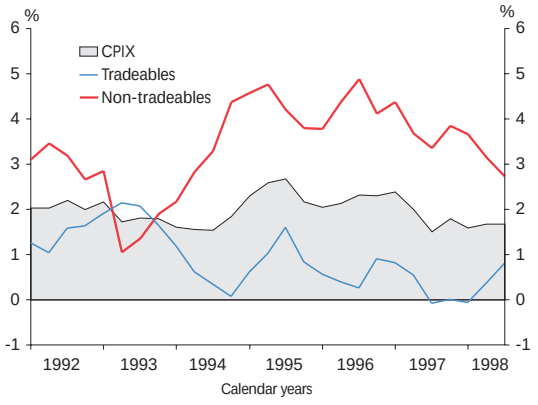
Although there may be a tendency to think of tradeables price inflation as being due to imports alone, many of the goods that New Zealand produces domestically have their prices set in international markets. An example is New Zealand milk prices, which have risen recently on the back of rises in the international price of milk in New Zealand dollars. With the lower dollar, higher import and export prices are both expected to lead to an increase in tradeables inflation.

In contrast, non-tradeables inflation will continue to come under downward pressure, stemming largely from emerging weakness in the housing market. Construction costs are expected to begin falling as building activity continues to drop off. Weak domestic demand will also keep price pressures low. The net result will be a convergence in tradeables and non-tradeables inflation – a reversal of the 1994-96 trend seen when both the exchange rate and domestic demand were strong (see Figure 21).

Figure 21

CPIX inflation: tradeables and non-tradeables[21]

(annual percentage change)



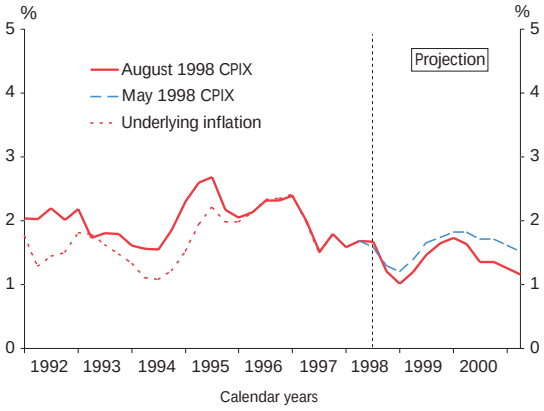
Medium-term outlook

Over the medium term, inflation is projected to be lower than in the May *Monetary Policy Statement* (see Figure 22). We project inflation to remain between 1 and 2 percent over 1999 and 2000. The principal downward influence on inflation is the state of excess capacity in the economy. The projected negative output gap is rather larger than in the May *Monetary Policy Statement*. Reduced price pressure over 1999 will be most evident in the housing market. Already, construction and real estate market activity have slowed markedly, and prices have begun to trend downwards.

Figure 22

Consumer price inflation

(annual percentage change)



The outlook for external demand is also significantly weaker. Consequently, the average prices of goods and services that are determined in international markets are likely to remain weak over the next year and a half (see Figure 23). This weakness will substantially offset the direct price impact of the recent exchange rate depreciation (see Box).

[21] RBNZ calculation.

Figure 23

World prices of New Zealand's exports and imports

(annual average percentage change)

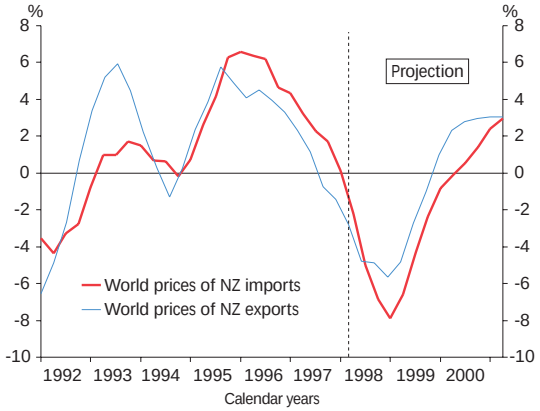
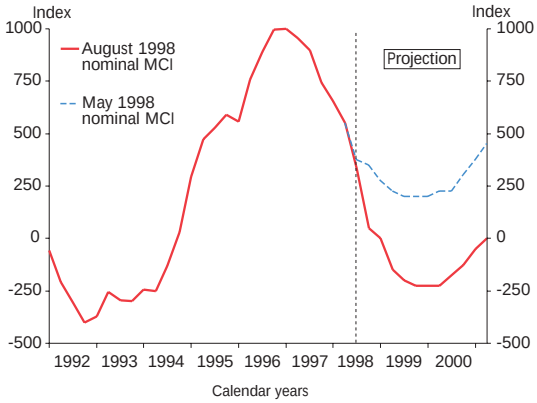


Figure 24

Nominal monetary conditions

(December 1996 quarter average = 1000)



The Monetary Conditions Index (MCI) is projected to average zero for the December quarter of 1998, and reach a trough of -225 in the second half of 1999. As activity picks up in calendar 2000, conditions gradually tighten, to pre-empt rising inflation pressures and keep CPIX inflation near the mid-point of the target range. Overall, this is a markedly lower projected MCI profile than that published in the May *Monetary Policy Statement* (see Figure 24).

Box: The role of the exchange rate in monetary policy

New Zealand's volume of trade with the rest of the world is similar in size to roughly half of its GDP. Consequently, the exchange rate materially influences the level of economic activity and price inflation. The exchange rate can influence consumer price inflation in three ways:

- *directly*, by influencing the NZ dollar prices of both imports and domestically produced goods that are sold in local and foreign markets;
- *indirectly*, by altering the demand for both exports and domestically produced substitutes for imports, and thus influencing inflation via pressures on productive capacity; and through
- *inflation expectations*, if exchange rate movements lead people to change their expectations of generalised price inflation.

First, consider the *direct* effect. In principle, one would expect the recent substantial depreciation of the nominal exchange rate to lead rapidly to upward movements in CPIX inflation via imported and domestically produced tradeable prices. At present and over the near term, however, two important factors will provide offsets to direct exchange rate effects. First, domestic demand is weak, and given the already high level of competitive pressure in retailing, it is unlikely that the exchange rate movement will be rapidly passed-through into higher retail prices. Indeed, the absence of strong pass-through effects over recent years has been notable in New Zealand and elsewhere (for example, Canada). This lack of a direct exchange rate effect has also been evident in the landed prices of imported goods (as well as in their retail prices). The second important offset is the subdued outlook for world import prices – the most obvious example being the continued weakness in world oil prices. Overall, the direct import price impact on CPIX inflation is expected to be smaller than what one might expect from looking at recent exchange rate movements alone and applying simple rules-of-thumb drawn from earlier experience.

If the *direct* effects do turn out to be larger than expected, it should be remembered that monetary policy can only influence inflation with a considerable lag. To the extent that direct exchange-rate-related spikes in CPIX inflation occur in the next few quarters, they will be too soon for monetary policy to offset. They will then be the kind of shock that it is best for the Bank to try to 'look through', keeping its focus on the six-to-eight-quarter-ahead horizon over which monetary policy has its maximum effect on inflation. Allowance for this 'monetary policy lag' is built into the specification of the Bank's inflation target as a range of 0 to 3 percent (see discussion in Section 2).

The *indirect* effect on inflation of the recent exchange rate depreciation occurs as the rise in aggregate demand leads to pressures on the economy's productive capacity. Aggregate demand will increase as both exports and domestically produced import-substitutes become more competitive. This indirect effect on inflation, through the output gap, generally takes one to two years to set in – roughly coinciding with the six-to-eight-quarter-ahead horizon on which monetary policy focuses.

The 2:1 ratio embodied in the MCI is derived from the relative impact of interest rates and the exchange rate on aggregate demand and, as such, is focused on the indirect effect of exchange rate movements. Maintaining a constant MCI in the face of exchange rate movements should, all else equal, leave no net effect from monetary conditions on aggregate demand. However, all else will not generally remain equal. In deciding how much the indirect effect should influence the current stance of monetary policy, a judgement must be made about other influences on aggregate demand, and about whether the overall demand pressures are likely to fuel a sustained, general, rise in consumer price inflation.

In this regard, the recent depreciation has undoubtedly increased the competitiveness of New Zealand firms, and

this will lead to a pick-up in export activity and an expansion of import-competing activities. However, the weak state of domestic demand and the relatively pessimistic economic outlook for many of our trading partners are likely to more than offset this competitiveness effect over the near term, keeping the probability low that overall excess demand pressure will soon emerge.

With regard to *expectations*, these seem more likely to be dampened by the weak state of the domestic economy and the deterioration in the world economic outlook, than to be fuelled by any temporary rise in CPIX inflation arising from direct exchange rate effects on prices. The importance of expectations in the inflation process, though, means that the Bank must remain aware of the risk of inflation expectations rising as a result of the depreciation, and pay attention to the information contained in surveys of inflation expectations.

In summary, our considered view, at this stage, is that the impact of the recent depreciation of the New Zealand currency on CPIX inflation will be largely offset by other factors, over the projection period. Over this period, recent experience, and the more competitive nature of the economy, lead us to partly discount previous rules-of-thumb regarding the magnitude and timing of *direct* pass-through effects. In addition, despite the boost to demand from the *indirect* exchange rate effect, there remains considerable overall excess capacity in the economy due to the offsetting weak domestic sector. Taken together, these judgements suggest that the recent depreciation is unlikely to fuel *expectations* of a generalised increase in inflation. However, we will continue to monitor all incoming information for evidence to the contrary, to ensure that the stance of monetary policy is consistent with maintaining price stability.

7. Projection uncertainties: a weaker world growth scenario

Prudent policy-making includes the readiness to respond appropriately to changing circumstances. As noted in Section 3, there is a material chance that the world economic outlook could deteriorate more sharply, or remain subdued for longer, than we have assumed. Were we to assume a sharper or more prolonged fall in world growth, our central projection for the New Zealand economy would look quite different. This section explores *how much* our projections for output, inflation and monetary conditions would differ if the world growth outlook were weaker.

Using the Bank's model of the New Zealand economy, FPS, we look at a stylised 'scenario' in which the set of assumptions for world output, inflation and interest rates are altered in a manner that is plausible, but deliberately simple. The scenario should not be interpreted as an 'alternative possible outcome', or the 'worst possible outcome'. Instead, the intention is to provide a guidepost for the broad magnitudes by which the outlooks for the New Zealand economy and for monetary conditions would shift under a different set of assumptions about the world growth outlook.

Compared to the central projection, in the scenario we make the following changes:

- We gradually, and temporarily, reduce the level of trading-partner industrial production, so that it is 2 percent lower in the year 2000. This lowers annual average growth in trading-partner industrial production by just over 1 percentage point for calendar 1999.
- We lower trading-partner CPI inflation by about 0.3 percentage points over that period.
- We gradually, and temporarily, lower short-term trading-partner interest rates by 100 basis points over that period.
- We assume weaker New Zealand consumer and business confidence over the near term as a result of the worsened world outlook, and accordingly reduce the level of consumption and business investment in the December 1998 and March 1999 quarters by 2 percent and 5 percent respectively.[22]

In other words, trading-partner demand goes through a bigger and more prolonged fall, lowering trading-partner inflation, and thereby prompting a greater easing of trading-partner monetary policy.

Figures 25 to 27 show the responses of the New Zealand output gap, inflation and the MCI, *all other assumptions unchanged*. The MCI track should be interpreted as an approximation to what the Bank's projection for the MCI would be, *given the weaker world growth scenario*.

Monetary conditions are substantially easier in the scenario than in our central projection. The peak difference is reached in calendar 1999, when the MCI is 225 points lower. Despite the additional monetary easing, CPIX inflation is lower by about 0.5 percentage points by calendar 2000. This lower inflation reflects greater excess capacity, by a peak of 1 percent of potential GDP in the middle of 1999.

The lower inflation path raises an interesting question: why are monetary conditions not even easier, to offset more fully the effects on inflation of the weaker world growth?

Using the FPS framework, the answer is twofold. First, monetary policy *cannot* fully offset the effects of the weaker world growth on inflation, because we assume that the 'shock' is already in train, that is, it is too late to be fully offset by easier monetary conditions. Second, in FPS, monetary policy *chooses* to look ahead to a particular horizon. Rather than try to offset fully the inflationary or disinflationary effects of a change in economic circumstances over all horizons, the monetary policy rule focuses on the six-to-eight-quarter-ahead horizon, where monetary actions have their maximum impact on inflation. That way, monetary condi-

[22] To be precise: our 14-country export-weighted industrial production quarterly growth track is reduced by 0.5 percent in each quarter of calendar 1999, is unaltered through calendar 2000, and then is raised by 0.5 percent in each quarter of calendar 2001. This is a 'U-shaped' shock to the *level* of industrial production: by the end of 2001, the level of industrial production in the scenario is the same as in the central projection. Trading-partner quarterly CPI inflation is lowered by 0.05 percentage points in each quarter of 1999 - 2000. Trading-partner interest rates are lowered in 25-basis-point steps in each quarter of 1999 to end up 100 basis points lower for calendar 2000, and then raised again in 25-basis-point steps through calendar 2001.

tions react to shocks in a smoother way, avoiding abrupt responses to shorter-term deviations in projected inflation away from the mid-point of the target range. The FPS model captures both these considerations. When circumstances change, the result of this forward-looking behaviour is that the impact on the economy is 'shared', with some impact 'absorbed' in inflation, and some in monetary conditions.

The results of this simulation are purely illustrative. Were the Bank actually to change its view on the outlook for the world economy, the change in projected conditions are unlikely to be as shown here. How much monetary conditions should adjust in response to a weaker world outlook would need to be evaluated in a full projection, where 'all other assumptions' do not remain unchanged.

Also, it is never the case that circumstances change in a perfectly understood way. As discussed in Section 2, the state, future path, and behaviour of the real world are always uncertain. Variations in those uncertainties have implications for monetary policy, but this scenario exercise largely abstracts from those implications.

Figure 25

Weaker world demand scenario: output gap

(percent of potential GDP)

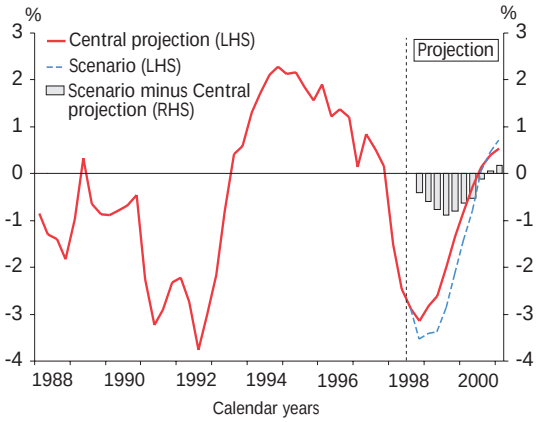


Figure 26

Weaker world demand scenario: annual CPIX inflation

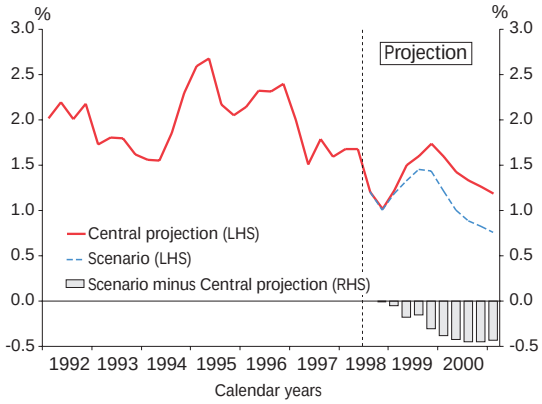
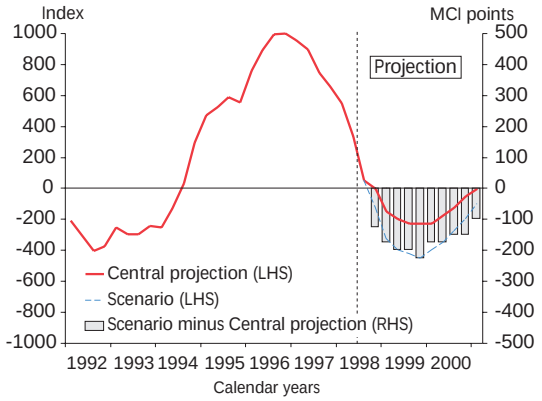


Figure 27

Weaker world demand scenario: nominal MCI



Appendix 1: Chronology

Listed below are recent events of relevance to monetary policy and inflation.

1998

26 May: The Reserve Bank released its eighteenth *Monetary Policy Statement*. The news release accompanying the statement is reproduced in Appendix 2.

10 June: The Reserve Bank issued a statement on current monetary conditions. The statement is reproduced in Appendix 2.

26 June: GDP production figures were released showing that the New Zealand economy had contracted 0.9 percent in the March quarter and had grown by 2.2 percent in the year to March 1998.

Governor Don Brash delivered a speech: "Monetary policy in a dangerous world".

15 July: The June 1998 quarter CPI was released. The CPIX rose 0.3 percent in the quarter and by 1.7 percent over the year to June.

Appendix 2: Reserve Bank statements on monetary policy

The following are reports or texts of official statements on monetary policy issues made by the Bank during the period under review in this *Monetary Policy Statement*.

Reserve Bank sanctions easier conditions

26 May 1998

The Reserve Bank's easing of monetary policy, underway since December 1996, is to continue further. This announcement came with the release of the Reserve Bank's May 1998 *Monetary Policy Statement* this morning.

The Reserve Bank indicated that it now viewed a level of around 350 on the Monetary Conditions Index (MCI) as being appropriate. This is a decrease of 150 points from the index level indicated as appropriate in the Bank's March *Economic Projections*.

Reserve Bank Governor Don Brash said "We have been progressively easing policy in response to the weakening of inflation pressures. Further easing of monetary policy is projected in the period immediately ahead, but at a much more modest pace.

"A weaker international outlook and muted confidence will delay the pick-up in growth that the Reserve Bank expected to be underway by now. These factors, together with some fall in house prices, will reduce inflationary pressures further. We believe, however, that tax cuts and the effect of past monetary policy easings will still accelerate activity over the rest of this year and next year. There will also be other influences on growth - the AMP demutualisation and changes to government spending are two examples of this. Given the slack already in the economy, this increase in growth does not immediately threaten inflation, but in all likelihood we will need to tighten conditions gradually from early 2000."

Dr Brash added that the international outlook in particular was still quite uncertain. "The smartest thing for the Reserve Bank faced with inevitable uncertainties is to aim for the middle part of our 0 to 3 percent target range," Dr Brash concluded.

Notes for briefing journalists on the release of the May 1998 *Monetary Policy Statement*

26 May 1998

Outlook for the real economy

Good morning. This morning we are releasing our 18th *Monetary Policy Statement*.

Broadly speaking, the Bank's outlook for the real economy is much the same as it was in March, when we released our last *Economic Projections*. We believe that the economy has been weak over the March and June quarters, indeed rather weaker than we were projecting in March. In the very near term, this subdued growth is expected to continue, with weak world prices for our exports and restrained domestic spending. Since March, the outlook for Japan, our second largest export market, has deteriorated further; house prices have stabilized or fallen a little; and consumer and business confidence have weakened. At the same time, prospects continue to look good in the United States, Australia, and generally in Europe.

Looking further forward, we see economic activity picking up in the second half of 1998 and into 1999. In part this will be a response to the tax cuts scheduled for 1 July this year, and to one-off events such as the demutualisation of the AMP Society. Activity is also expected to respond to the sharp fall in the real exchange rate which has occurred over the last year or so, and the effect that this has had on increasing the competitiveness of New Zealand production. Internationally, the consensus view

is that world economic growth may pick up somewhat faster in 1999 than previously expected, and this too is projected to assist New Zealand's growth in 1999 and 2000.

Our best estimate at this stage is that growth in the year to March 1999 (year average basis) will be 2.2 per cent, and in each of the two following years 4.0 per cent and 3.5 per cent.

Outlook for inflation and monetary conditions

Largely as a result of this somewhat weaker growth in the first half of 1998, we now project there to be somewhat more spare capacity in the economy over this year and into 1999. This will further reduce inflationary pressures over 1999 and into 2000, and makes it appropriate to ease monetary conditions by 150 points from the 500 previously projected for the June quarter, to 350 for the September quarter. This is an additional easing from that projected in March (when we projected monetary conditions to be around 425 in the September quarter). As often in the past, financial markets have fully anticipated this move in recent weeks.

If we had not sanctioned this additional easing for the September quarter, and a little more easing further out than we had previously projected, the projected inflation track would have shown a more pronounced cyclical pattern. As it is, and after factoring in the expected impact of recent and projected easing in monetary conditions, we expect CPIX inflation to stay pretty close to the middle part of our 0 to 3 per cent target range throughout the forecast period.

In this current June quarter, we expect CPIX inflation to be quite a bit lower than we expected in March (0.2 per cent instead of 0.5 per cent). In large part this is a result of one-off factors such as a fall in world oil prices and increased competition in petrol retailing. The recently-announced abolition of tariffs on motor vehicles also pushes prices down, although the overall effect of the Budget on inflation is relatively small in the short-term, given the offsetting increases in excise tax on petrol and cigarettes. (In the longer term, the micro-economic reform measures announced in the Budget, such as the abolition of restrictions on parallel importing, and the introduction of the community wage, seem likely to reduce inflationary pressures somewhat, but at this stage we have not tried to estimate the extent of these effects.)

Another factor which is expected to put downward pressure on CPIX inflation in the June quarter, and indeed beyond, is the more subdued outlook for house prices. Previously we had projected house prices to rise slowly in nominal terms (to remain roughly constant in real terms), but some fall in house prices now appears more likely, and a small fall has been built into our projections.

Uncertainties

Just how the economy develops over the next few years will depend heavily on how households respond to the tax cuts and AMP demutualisation, on how the situation in Japan and Asia evolves, and on whether the United States economy continues to grow steadily. These are all substantial uncertainties. It is possible to envisage circumstances in which the economy grows rather more quickly than now projected, if consumer confidence (and business confidence with it) bounces back in response to the tax cuts. It is not at all difficult to envisage circumstances where the economy grows more slowly than projected, particularly if the Japanese economy fails to respond to recently-announced fiscal stimulus, or if the United States economy slows more sharply than now expected, perhaps in response to a sharp fall in US equity prices.

In our view, the uncertainties around the projected path of inflation are more or less evenly balanced. While economic growth might turn out a little weaker than now projected, the effect of that on inflation could well be fully out-weighed if further easing in monetary conditions took the form of further depreciation in the exchange rate.

Implementation issues

As on several previous occasions, this *Monetary Policy Statement* explains in some detail how we use the Monetary Conditions Index (MCI). We note that central banks in open economies need to take account of the effects of both interest rates and the exchange rate on economic activity, and so on inflation, and in particular must decide whether to adjust interest rates in response to movements in the exchange rate.

What is different about our MCI approach is the degree to which we have made explicit the relative weighting we attach to interest rates and the exchange rate, and our willingness to publish a conditional projection for overall monetary conditions consistent with the outlook for inflationary pressures. This is consistent with our commitment to remain as transparent as possible about the conduct of monetary policy.

Since our last projection in March, the mix of monetary conditions has shifter further towards a lower exchange rate and relatively higher interest rates. (In absolute terms, 90 day interest rates are little changed from their level just prior to the release of our March projection, which means that all of the quite significant further easing in monetary conditions which has occurred since that time has taken the form of a fall in the exchange rate.)

In the Bank's view, the use of the MCI through the rebalancing of conditions which has occurred over the last year or so has been very helpful in keeping our attention, and that of financial markets, on the level of overall monetary conditions appropriate for maintaining price stability. The rise in short-term interest rates which has occurred since last July has been associated with a fairly rapid fall in the New Zealand dollar over the same period. That depreciation is hardly surprising given the very strong appreciation of the currency over the period between early 1993 and early 1997 (when in general we were tightening policy), and the increasing balance of payments deficit. Recent events in Asia, together with a perception that monetary policy was likely to be substantially eased, provided the catalyst for the depreciation which we have seen.

In due course, as financial markets sense that there is limited further downside risk in the New Zealand dollar, we will tend to see more of any policy easing come about through lower interest rates. Having said that, a lot will depend on developments in Japan, and Asia more generally, and on the course of interest rates in the United States and Australia.

All of this underscores a point that we have made many times before: the Bank can not control the *mix* of monetary conditions. The specific path for interest rates and the exchange rate projected in this *Statement* is one of a number of alternatives paths consistent with our assessment of inflationary pressures, and in no way shows some preferred or desired mix of conditions. I stress this point because a surprisingly large number of commentators continue to talk as if we can, and do, target a particular mix of conditions.

The primary issue which the Bank and the markets must always address is not whether interest rates in isolation are at the 'right' level, or whether the exchange rate in isolation is at the 'right' level, but rather whether overall monetary conditions are appropriate to keep inflation heading towards the centre of the 0 to 3 per cent target. Those who argue that the MCI approach is leading interest rates to be too high are either lamenting the depreciation in the New Zealand dollar or arguing that monetary policy overall is too tight. The overall appropriateness of policy is always a legitimate matter for debate, but it has nothing to do with the use of an MCI in implementing policy.

Finally, let me address one other implementation issue. I indicated almost a year ago that, in implementing policy, we would not react to temporary spikes in the MCI, especially those stemming from sharp movements in overseas exchange rates which appeared to have no significance for the future course of New Zealand inflation. I further indicated that, as a very approximate guide, we would expect the MCI to be within a range of plus or minus 50 basis points from 'desired' in the period immediately following our quarterly projections, with rather more latitude allowed as new information came to light and as the last projection receded into the past.

In addition, of course, our projected MCI track may foreshadow further quarter-to-quarter changes, with this *Statement*, for example, suggesting a further 75 basis point easing between the September and December quarters. Hence, in deciding on any possible reaction to deviations of actual market conditions from those published as desired, we will also be taking this forward path into consideration as we progress through the roughly three month period until our next *Statement*. All things considered, this should allow the markets sufficient latitude to adjust financial prices to new information, shocks, and other uncertainties, without threatening the inflation target.

In addition, to make things easier for everyone, we have decided to adopt the general practice of taking any policy action, or commenting on the appropriateness of monetary conditions, just once a week on the morning after our weekly Monetary Policy Committee meeting. Thus, barring any exceptional circumstances, any possible statements or cash target changes will in future be made at 9.00 a.m. on Wednesdays, except where, as next week, a public holiday moves the timing of the Monetary Policy Committee meeting slightly. This change takes place with immediate effect. Of course, if the Bank is broadly satisfied with the way in which monetary conditions have evolved, we will simply remain silent.

Reserve Bank cautions markets

10 June 1998

Reserve Bank Chief Manager (Financial Markets) David Archer today said: "The Reserve Bank has been assessing monetary conditions over the last two weeks, and is concerned at the extent of the easing.

"Some of this has been due to international currency turbulence dragging down the New Zealand dollar. The market reaction to that turbulence has been orderly, and in general we don't want to be hasty in responding to such events. Nonetheless, the Reserve Bank will be looking to see conditions in future weeks tracking somewhat closer to its desired levels, as identified in the May *Monetary Policy Statement*.

"As ever, the Reserve Bank will be prepared to take whatever actions are necessary to ensure that price stability is maintained," Mr Archer concluded.

Appendix 3: Summary tables

Table A

CPIX inflation projections and monetary conditions

(CPIX is in percentage changes)

		CPIX		TWI	90-day bank bill rate	MCI	
		Quarterly	Annual			Nominal	Real
1995	Mar.	0.5	2.6	59.8	9.4	474	414
	Jun.	0.6	2.7	60.8	9.1	527	458
	Sep.	0.4	2.2	61.7	9.0	590	579
	Dec.	0.6	2.1	61.9	8.5	557	572
1996	Mar.	0.6	2.1	64.2	8.7	759	759
	Jun.	0.8	2.3	64.6	9.7	890	886
	Sep.	0.4	2.3	65.6	10.0	997	1004
	Dec.	0.7	2.4	67.1	8.9	1000	1000
1997	Mar.	0.2	2.0	68.4	7.5	956	979
	Jun.	0.3	1.5	68.0	7.2	897	965
	Sep.	0.7	1.8	64.8	8.1	746	807
	Dec.	0.5	1.6	63.9	7.9	656	750
1998	Mar.	0.3	1.7	61.2	8.9	550	636
	Jun.	0.3	1.7	58.5	9.1	334	417
	Sep.	0.2	1.2	57.5	7.2	50	175
	Dec.	0.3	1.0	57.4	6.6	0	175
1999	Mar.	0.5	1.2	56.8	5.8	-150	75
	Jun.	0.5	1.5	56.6	5.4	-200	0
	Sep.	0.4	1.6	56.5	5.2	-225	-50
	Dec.	0.4	1.7	56.7	5.1	-225	-75
2000	Mar.	0.4	1.6	56.9	5.0	-225	-25
	Jun.	0.3	1.4	57.3	5.1	-175	0
	Sep.	0.4	1.3	57.8	5.2	-125	50
	Dec.	0.3	1.3	58.2	5.4	-50	125
2001	Mar.	0.3	1.2	58.6	5.7	0	175

Table B

World outlook

(Annual average percentage change, unless specified otherwise)

	Actuals							Projections		
March year	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Industrial production	0.8	-0.9	-0.3	5.5	2.4	2.3	3.8	-1.0	2.8	2.7
World CPI inflation	3.2	2.7	1.9	2.2	2.5	2.6	2.6	1.6	2.0	2.3
Domestic										
Import prices	1.0	6.7	-2.7	-1.8	-0.7	-3.4	0.8	4.6	1.4	0.7
Export prices	-1.3	9.3	-1.2	-2.1	-2.8	-4.2	0.3	6.5	3.9	0.8
Terms of trade	-2.3	2.4	1.5	-0.3	-2.2	-0.9	-0.6	1.9	2.4	0.1
March quarter										
World 90-day rate (level, %)	4.7	3.6	3.7	6.5	5.7	5.5	5.5	5.3	5.4	5.3
World bond rate (level, %)	7.8	6.7	6.2	8.0	6.4	6.8	5.6	5.8	6.1	5.9

Table C

Composition of real GDP growth

(Annual average percentage change, unless specified otherwise)

	Actuals							Projections		
March year	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Final consumption expenditure										
Private	-2.0	0.3	3.2	6.1	4.1	4.1	3.2	1.3	2.5	2.9
Public authority	0.0	3.0	-1.1	-0.9	2.8	2.2	6.4	1.4	-0.9	3.2
Total	-1.6	0.9	2.3	4.6	3.9	3.7	3.8	1.3	1.9	3.0
Gross fixed capital formation										
Market sector:										
Residential	-15.3	2.8	17.0	12.3	-0.7	2.0	5.7	-15.5	6.1	5.5
Business	-20.7	5.3	20.3	16.1	14.1	4.9	-1.1	-2.0	7.2	9.6
Non-market government sector	-3.5	-3.1	8.4	36.9	3.3	24.3	18.4	3.3	0.5	3.7
Total	-17.6	3.7	18.2	17.2	9.3	6.4	2.8	-4.1	5.9	7.9
Final domestic expenditure	-4.6	1.3	5.0	7.0	5.0	4.3	3.6	0.1	2.7	4.1
Stockbuilding [1]	0.0	0.7	1.1	0.0	-0.7	-0.4	0.4	0.0	0.1	-0.1
Gross national expenditure	-4.6	2.0	6.1	6.9	4.2	3.8	3.9	0.1	2.8	3.9
Exports of goods and services	9.3	2.5	7.9	8.4	2.6	3.8	2.4	-2.0	5.4	6.2
Imports of goods and services	-3.8	7.4	8.0	14.3	7.3	6.9	4.8	-2.9	1.1	3.5
Expenditure on GDP	-1.1	0.8	6.1	5.3	2.7	2.8	3.2	0.4	4.1	4.8
GDP (production)	-1.2	1.2	6.3	5.4	3.6	2.7	2.2	0.1	4.0	4.7
GDP (production, March qtr to March qtr)	0.8	2.0	7.0	4.6	3.5	1.6	1.2	1.6	4.8	4.1
Potential output	0.4	1.5	2.8	3.7	3.8	3.6	3.3	3.0	2.8	2.7
Output gap (% of potential GDP, year average)	-2.7	-2.9	0.4	2.1	1.9	1.0	0.0	-2.8	-1.7	0.2

[1] Percentage point contribution to the growth rate of GDP.

Table D

Household income and consumption

(Annual average percentage change)

	Actuals						Projections			
March year	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998e**	**1999**	**2000**	**2001**
Compensation of employees	-1.1	2.4	4.4	6.4	6.6	5.5	2.6	1.3	4.0	5.5
Other income	0.2	-2.5	4.7	4.9	9.4	5.8	4.2	2.9	2.4	4.0
Total income	-0.5	-0.1	4.5	5.6	8.0	5.6	3.4	2.1	3.2	4.7
Nominal disposable income	2.4	-0.4	5.0	5.0	6.9	5.4	3.5	2.8	5.1	4.8
Consumption deflator	2.2	1.7	1.7	2.0	2.5	1.8	1.1	1.1	1.6	1.3
Real disposable income	0.2	-2.0	3.3	3.0	4.3	3.5	2.4	1.7	3.4	3.4
Real household consumption	-2.2	0.3	3.2	6.1	3.9	4.0	3.3	1.2	2.4	2.9
Household savings rate [1]	6.5	4.3	4.4	1.5	1.8	1.4	0.5	1.1	2.1	2.6

e = estimate.

[1] Percentage of disposable income.

Table E

Fiscal accounts

($ billion)

	Actuals					Projections			
June year	**1993**	**1994**	**1995**	**1996**	**1997**	**1998e**	**1999**	**2000**	**2001**
Revenue									
Direct taxation	16.6	17.6	19.8	21.3	20.5	21.6	21.0	22.3	23.7
Indirect taxation	9.2	10.1	10.4	11.0	11.4	11.9	12.0	12.2	12.6
Non-tax revenue	4.0	2.5	3.4	2.8	2.9	2.5	2.5	2.6	2.7
Total revenue	29.8	30.2	33.6	35.1	34.8	36.0	35.5	37.1	38.9
Total expenses	31.4	29.6	30.4	31.7	33.0	34.3	35.8	36.8	37.7
Revenue less expenses	-1.6	0.5	3.2	3.3	1.8	1.6	-0.2	0.3	1.2
Net surplus attributable to SOEs and Crown entities	0.8	0.2	-0.6	0.0	0.1	1.1	0.9	0.9	1.0
Operating balance	-0.8	0.8	2.7	3.3	1.9	2.7	0.6	1.2	2.2
(% of nominal expenditure GDP)	-1.1	0.9	3.1	3.6	2.0	2.6	0.6	1.1	1.9
Net public debt (as at 30 June)	37.1	35.4	32.6	28.6	25.3	24.4	25.2	25.1	24.5
(% of nominal expenditure GDP)	48.7	43.1	37.1	31.1	26.3	24.3	24.1	22.7	21.0

e = estimate.

Table F

Investment

(Annual average percentage change)

	Actuals							Projections		
March year	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Plant and machinery	-22.9	15.6	25.8	19.4	12.7	3.9	6.9	0.8	6.9	9.1
(P&M excluding computers)	-24.6	14.5	25.0	13.7	7.6	-1.4	-0.3	-0.1	6.1	9.0
Transport equipment	-20.9	25.4	21.0	11.0	6.8	12.4	-25.3	-4.1	6.8	9.1
Commercial buildings	-38.4	2.1	26.1	26.9	22.8	-0.4	-4.9	-4.6	10.5	10.5
Other	9.5	-30.7	-7.4	-7.7	22.0	7.8	5.2	-11.0	4.3	12.5
Market sector business investment	-20.7	5.3	20.3	16.1	14.1	4.9	-1.1	-2.0	7.2	9.6
(excluding computers)	-21.4	4.3	19.6	12.9	11.6	2.4	-5.9	-3.0	6.9	9.7
Market sector residential investment	-15.3	2.8	17.1	12.2	-0.7	2.0	5.7	-15.5	6.1	5.5
Total market sector investment	-19.2	4.6	19.4	15.0	10.1	4.2	0.5	-5.4	7.0	8.7
Government (non-market) investment	-3.5	-3.1	8.4	36.9	3.3	24.3	18.4	3.3	0.5	3.7
Total investment	-17.6	3.7	18.2	17.2	9.3	6.4	2.8	-4.1	5.9	7.9
(excluding computers)	-18.1	3.0	17.5	15.0	7.2	4.3	-0.6	-5.2	5.5	7.7

Table G

Trade volumes and the current account

	Actuals							Projections		
March year	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Trade volumes (Annual average percentage change)										
Exports of goods	10.3	0.6	6.9	7.2	0.8	6.8	5.0	-3.4	5.4	6.8
Exports of services	5.9	9.5	11.3	12.5	8.1	-4.9	-5.6	2.9	5.4	4.2
Total exports	9.3	2.5	7.9	8.4	2.6	3.8	2.4	-2.0	5.4	6.2
Imports of goods	-5.7	8.1	12.1	15.6	7.0	7.4	5.7	-2.8	0.2	3.0
Imports of services	3.0	5.1	-5.3	9.1	8.2	5.0	1.2	-3.1	5.1	5.5
Total imports	-3.8	7.4	8.0	14.3	7.3	6.9	4.8	-2.9	1.1	3.5
Current account ($ billion March year annual total)										
Merchandise trade balance	3.6	3.4	3.1	2.1	0.9	0.9	1.0	1.1	3.2	4.4
Services balance	-1.4	-1.7	-0.9	-0.6	-0.2	-0.6	-1.1	-1.5	-1.7	-1.8
Investment income balance	-4.8	-3.9	-4.5	-6.0	-6.0	-7.1	-7.7	-7.3	-7.4	-7.8
Transfers balance	0.7	0.9	1.5	1.8	2.5	2.3	0.8	0.6	0.8	1.0
Current account [1]	-1.9	-1.3	-0.8	-2.6	-2.8	-4.5	-7.1	-7.0	-5.1	-4.2
(% of nominal production GDP)	-2.6	-1.7	-1.0	-3.1	-3.1	-4.7	-7.1	-6.9	-4.7	-3.7
(ex migrants' capital transfers % of nominal production GDP)	-3.3	-2.6	-2.3	-4.7	-5.4	-6.2	-7.2	-6.9	-5.0	-4.1

[1] Errors in adding up the current account are due to rounding.

Table H

Labour market

	Actuals							Projections		
March year	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Change in labour force:										
Natural increase (000's)	17.5	13.7	15.4	16.1	16.3	16.7	19.7	16.0	16.2	16.2
Net migration (000's)	1.7	2.8	6.5	9.2	13.0	9.1	-0.2	-2.5	3.8	7.9
Increase in participation (000's)	-10.0	-14.5	27.9	9.6	29.3	0.1	-3.6	2.4	22.5	7.3
Total change in labour force (000's)	9.1	2.1	49.8	34.8	58.6	25.9	15.9	15.9	42.4	31.5
March quarter										
Population of working age (000's)	2574	2600	2634	2673	2718	2757	2787	2807	2837	2873
Labour force participation rate (%)	63.8	63.2	64.3	64.7	65.7	65.7	65.6	65.7	66.5	66.8
Total labour force (000's)	1641	1643	1693	1728	1787	1813	1828	1844	1887	1918
Total employment (000's)	1460	1475	1532	1608	1671	1688	1691	1685	1739	1790
Annual growth (%)	-0.8	1.0	3.9	5.0	3.9	1.1	0.1	-0.3	3.2	2.9
Unemployment (000's)	181	168	161	120	116	124	138	159	147	128
Unemployment rate	11.1	10.2	9.5	6.9	6.5	6.9	7.5	8.6	7.8	6.7
Unemployment rate (s.a.)	10.6	9.8	9.1	6.6	6.1	6.4	7.1	8.2	7.4	6.3
Total hours worked										
Annual growth (%)	0.4	2.8	3.4	6.2	4.3	-2.2	-0.5	0.9	3.1	2.7
Labour productivity										
Annual growth (%)	1.1	-0.4	2.3	0.0	-0.2	1.2	2.2	1.0	1.8	1.7
QES private sector wages ($ per hour)	14.0	14.1	14.3	14.6	15.1	15.7	16.1	16.5	16.8	17.2
Annual growth (%)	2.8	0.7	1.4	2.1	3.7	4.0	2.5	2.1	2.1	2.4

Table I

Short-term projections

(Quarterly percentage changes, unless specified otherwise)

	Actuals						Projections				
	Dec-96	**Mar-97**	**Jun-97**	**Sep-97**	**Dec-97**	**Mar-98**	**Jun-98e**	**Sep-98**	**Dec-98**	**Mar-99**	**Jun-99**
Price measures											
CPIX	0.7	0.2	0.3	0.7	0.5	0.3	0.3	0.2	0.3	0.5	0.5
Wages	0.6	1.4	1.0	0.6	0.4	0.6	1.0	0.1	0.2	0.8	0.9
House prices	2.7	2.3	0.9	0.6	1.4	-1.0	-1.8	-0.7	-0.4	0.2	0.5
Construction costs (residential)	0.4	0.2	1.0	1.4	1.4	0.5	1.1	-0.4	-0.3	0.0	0.2
Import prices	-0.9	-0.7	0.1	2.5	0.6	-0.1	2.0	1.3	0.9	0.9	-0.1
Monetary conditions (level)											
Nominal MCI	1000	956	897	746	656	550	334	50	0	-150	-200
TWI	67.1	68.4	68.0	64.8	63.9	61.2	58.5	57.5	57.4	56.8	56.6
90-day rate	8.9	7.5	7.2	8.1	7.9	8.9	9.1	7.2	6.6	5.8	5.4
Output and employment (seasonally adjusted)											
GDP (production)	0.7	-0.2	1.5	0.5	0.4	-0.9	-0.2	0.3	0.5	1.0	0.9
Total employment	-0.5	0.0	0.1	-0.1	0.3	-0.2	-0.5	-0.3	0.1	0.4	0.7

e = estimate.

Appendix 4: Notes to the tables

CPIX	Consumers Price Index excluding Credit Services. *Consumers Price Index.*
TWI	RBNZ. Nominal Trade Weighted Index of the exchange rate. Defined as: A geometrically-weighted index of the New Zealand dollar bilateral exchange rates of Australia, Japan, United States, United Kingdom and Germany.
90-day rate	RBNZ. Defined as: The interest yield on 90-day bank bills.
Nominal MCI	RBNZ. Defined as: $\{(90day\text{-}r_0) + (1/2)*[\log_n(TWI) - \log_n(TWI_0)]*100\}*100 + 1000$ where 90day and TWI are nominal rates and r_0 and TWI_0 are corresponding averages of daily rates for the December 1996 quarter, where $r_0 = 8.91$ and $TWI_0 = 67.11$.
Real MCI	RBNZ. Defined as: $\{(R90day\text{-}R_0) + (1/2)*[\log_n(RTWI) - \log_n(RTWI_0)]*100\}*100 + 1000$ where R90day and RTWI are the estimated real 90day interest rate and the real TWI exchange rate. R90day is calculated as the nominal 90-day rate less the annual (four-quarter) inflation rate in the CPIX. RTWI is calculated as the TWI multiplied by New Zealand's GDP deflator (interpolated from annual data) and divided by the trade-weighted average of GDP deflators of our trading partners. R_0 and $RTWI_0$ are base levels for the December 1996 quarter, where $R_0 = 6.5$ and $RTWI_0 = 1$ (normalised). All input numbers are rounded to one decimal place.
Industrial production	Actuals sourced from OECD. Projections based on *Consensus Forecasts*. (Currently adjusted by a 14-country index over the projection period.) Seasonally adjusted.
World CPI inflation	RBNZ definition and estimate: TWI trading partners' CPI inflation, weighted by TWI weights. Projections based on *Consensus Forecasts*.
Import prices	Domestic currency import prices. *Overseas Trade Indexes.*
Export prices	Domestic currency export prices. *Overseas Trade Indexes*.
Terms of trade	Constructed using domestic-currency export and import prices. *Overseas Trade Indexes.*
World 90-day rate	RBNZ definition and estimate: 80:20 weighted combination of US and Australian 90-day interest rates. Projections based on *Consensus Forecasts*.
World bond rate	RBNZ definition and estimate: 80:20 weighted combination of US and Australian 10-year interest rates. Projections based on *Consensus Forecasts.*
Private consumption	*System of National Accounts.*
Public authority consumption	*System of National Accounts.*
Residential investment	RBNZ definition: Private sector and government market sector residential investment. *System of National Accounts.*
Business investment	RBNZ definition: Total investment less the sum of non-market investment and residential investment. *System of National Accounts.*
Non-market investment	RBNZ definition: The *System of National Accounts* annual nominal government non-market/market investment ratio is interpolated into quarterly data. This ratio is used to split quarterly expenditure GDP Government Investment into market and non-market components.
Final domestic expenditure	RBNZ definition: The sum of total consumption and total investment. *System of National Accounts.*
Stockbuilding	Percentage point contribution to the growth of GDP by stocks. *System of National Accounts.*

Gross national expenditure	Final domestic expenditure plus stocks. *System of National Accounts.*
Export of goods and services	*System of National Accounts.*
Imports of goods and services	*System of National Accounts.*
GDP (production)	*System of National Accounts.*
Potential output	RBNZ definition and estimate. Refer to: Conway, P. and B. Hunt, (1997), 'Estimating Potential Output: a semi-structural approach', *Reserve Bank of New Zealand Discussion Paper*, G97/9.
Output gap	RBNZ definition and estimate: The percentage difference between real GDP (production, seasonally adjusted) and potential output GDP.
Compensation of employees	*Household Income and Outlay Accounts.*
Other income	*Household Income and Outlay Accounts.*
Nominal disposable income	*Household Income and Outlay Accounts.*
Consumption deflator	*System of National Accounts.*
Real disposable income	*Household Income and Outlay Accounts.*
Real household consumption	*System of National Accounts.*
Household savings rate	*Household Income and Outlay Accounts.*
Direct taxation	Historical source: The Treasury. Defined as total personal taxation, total company taxation and total withholding taxes. Adjusted by the RBNZ over the projection period.
Indirect taxation	Historical source: The Treasury. Adjusted by the RBNZ over the projection period.
Non-tax revenue	Historical source: The Treasury. Adjusted by the RBNZ over the projection period.
Total expenses	Historical source: The Treasury. Adjusted by the RBNZ over the projection period.
Net surplus attributable to SOEs and Crown entities	The Treasury.
Government operating balance	Percentage of nominal GDP (expenditure), June year.
Net public debt	Historical source: The Treasury. Adjusted by the RBNZ over the projection period.
Plant and machinery investment	RBNZ definition: Market sector plant and machinery investment. *System of National Accounts.*
Plant and machinery investment (excluding computers)	RBNZ definition: Market sector plant and machinery investment excluding computer investment. *System of National Accounts.*
Transport equipment	RBNZ definition: Market sector transport equipment investment. *System of National Accounts.*
Commercial buildings	RBNZ definition: Market sector non-residential building investment. *System of National Accounts.*
Other investment	RBNZ definition: Market sector other construction and land improvement investment. *System of National Accounts.*
Total market investment	RBNZ definition: The sum of total business investment and total residential investment. *System of National Accounts.*

Total investment	*System of National Accounts.*
Total investment (excluding computers)	Total investment less computer investment. *System of National Accounts.*
Export of goods	*System of National Accounts.*
Export of services	*System of National Accounts.*
Import of goods	*System of National Accounts.*
Import of services	*System of National Accounts.*
Merchandise trade balance	*Balance of Payments.*
Services balances	*Balance of Payments.*
Investment income balance	*Balance of Payments.*
Transfers balance	*Balance of Payments.*
Current account balance	*Balance of Payments.*
Natural increase	Defined as the change in the population of working age minus net migration.
Net migration	Net arrivals of working age (15-64). *External Migration.*
Participation rate	*Household Labour Force Survey.*
Labour force	*Household Labour Force Survey.*
Total employment	*Household Labour Force Survey.*
Unemployment rate	*Household Labour Force Survey.*
Total hours worked	*Household Labour Force Survey.*
Labour productivity	Defined as GDP (production) divided by HLFS hours worked. This series is smoothed by taking a four-quarter moving average.
Wages	Private sector ordinary time average hourly earnings. *Quarterly Employment Survey*.
House prices	Average house price index, Quotable Value New Zealand.
Construction costs (residential)	Component of the Housing Group, *Consumers Price Index*.
Quarterly percentage change	(Quarter/Quarter$_{-1}$-1)*100
Annual percentage change	(Quarter/Quarter$_{-4}$-1)*100
Annual average percentage change	(Year/Year$_{-1}$-1)*100

Source: Unless otherwise specified, all data conform to Statistics New Zealand definitions, and are not seasonally adjusted.