
Economic Projections¹

March 1998

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This document, together with the associated database information and news releases, is available on the Reserve Bank's internet homepage (<http://www.rbnz.govt.nz>).

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¹ The projections were finalised on 27 February 1998. The text was finalised on 11 March 1998.

1. Overview and policy assessment

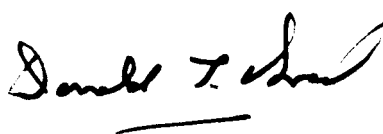
Monetary conditions continued to ease over the first quarter of 1998 as the Asian crisis unfolded. It has become increasingly evident that international demand will be weaker over the next year or two, significantly offsetting New Zealand's domestic growth impetus. This dampening influence on the Bank's inflation projections, and the risks surrounding the outlook, indicate that a level of monetary conditions around 500 on the Monetary Conditions Index (MCI) is now appropriate. This is a decrease of 150 points from the index level of 650 announced in the December *Monetary Policy Statement*, and is a little lower than where actual monetary conditions have been over recent weeks.

The reassessment of the appropriate level of monetary conditions comes despite domestic economic conditions having evolved largely as anticipated, and despite the short-term inflation outlook having deteriorated. Recent indications are that domestic expenditure continued to grow at around 4 percent over the year to March 1998, while the labour market has remained surprisingly robust. Meanwhile, recent data suggests some increase in inflation, with domestic price pressures persisting, and imported inflation picking up in response to the significantly lower New Zealand dollar.

Nonetheless, it is appropriate to base the stance of monetary policy on a forward-looking assessment of inflation pressures. In this regard, the level of anticipated activity has declined considerably over recent months – largely in the light of recent Asian developments and reduced domestic confidence – and is expected to remain subdued for longer than previously projected. Weaker international demand is expected to have an adverse impact on export activity, domestic business and consumer activity, and the terms of trade. In anticipation of the impact of these developments on inflation, the Bank has conditionally projected easier monetary conditions throughout the policy-relevant horizon. This will act to prevent a sharp decline in domestic economic activity, while still keeping the level of annual consumer price inflation near the centre of the target range.

As a result, the outlook for the economy remains reasonably positive, with the level of economic activity picking up into 1999. Household income trends remain positive, with continued employment growth and the added stimulus of a further reduction in income taxes. However, consumption growth is likely to remain subdued, as asset prices and perceived wealth stabilise after a period of rapid growth. Business investment is projected to gain pace into 1999, in response to easier monetary conditions and a recovery of prospects for demand both domestically and internationally. Throughout, the government sector will continue to provide a positive demand stimulus with its expenditure plans. Overall, domestic spending is expected to slightly lag income growth, with New Zealand's current account deficit narrowing gradually.

Clearly, considerable uncertainty remains with regard to the inflation projection. The inflation risks are balanced between possibly higher import-led price pressures in the near term as a result of the lower exchange rate, and possibly reduced domestic price pressures in the medium term. A key uncertainty is the extent to which the recent decline in the New Zealand dollar will increase the New Zealand dollar price of imports. The projected profile for monetary conditions, as described by the conditional MCI track, incorporates a further modest decline in the value of the currency. A more persistent and significant downward adjustment of the exchange rate – possibly linked to concerns about the current account deficit – would place considerable upward pressure on consumer prices. If this occurred, monetary conditions would not be able to decline to the extent projected without driving inflation unacceptably far from the centre of the target range.



Donald T Brash
Governor

Figure 1
Consumer price inflation
 (annual percentage change)

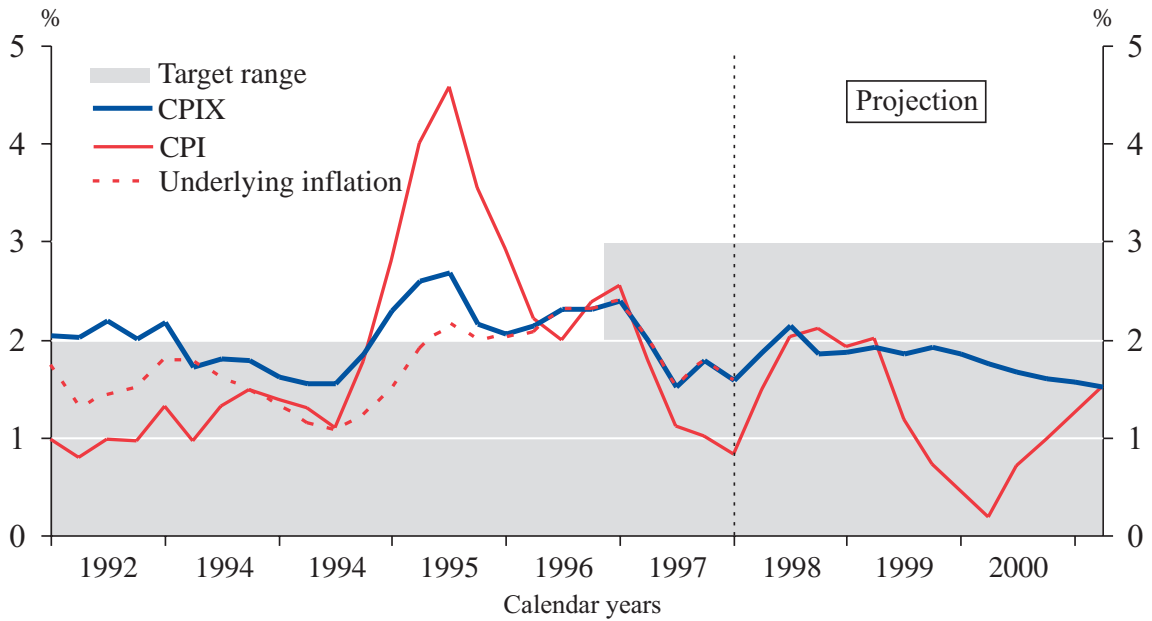


Figure 2
Real and nominal monetary conditions
 (December 1996 quarter average = 1000)

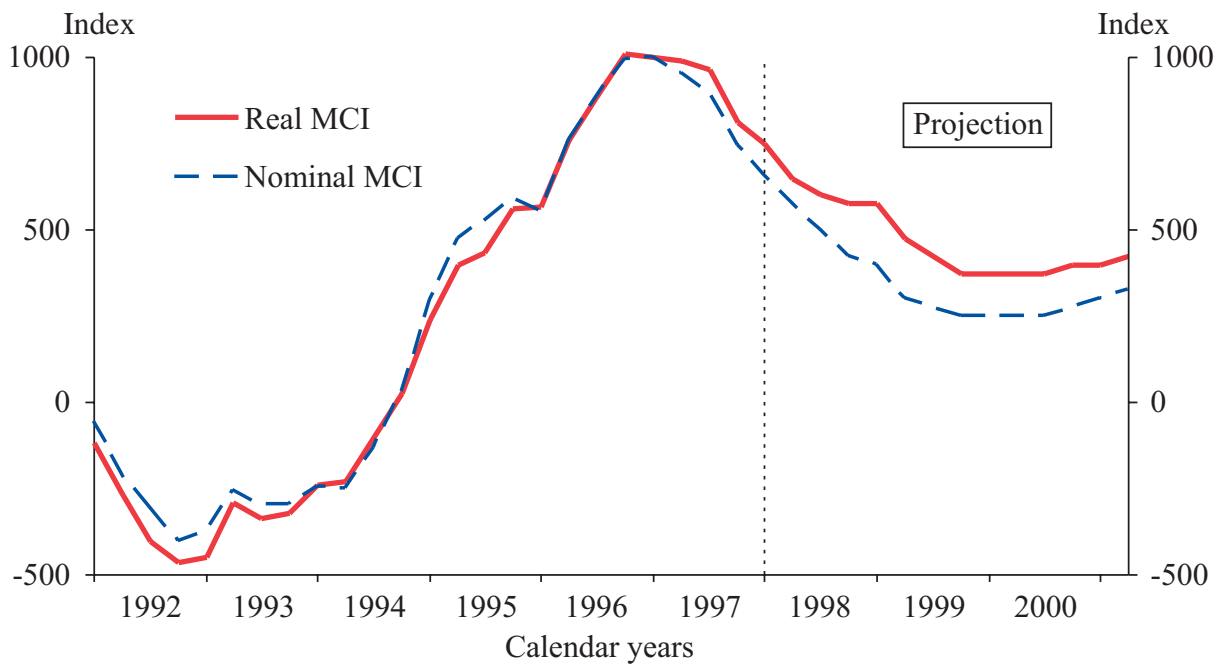


Table 1
Summary of economic projections

(Annual percentage changes, unless specified otherwise)

	March Years	Actuals/Estimates		Projections		
		1997	1998	1999	2000	2001
<i>Inflation measures</i>						
CPI excluding credit services (CPIX)		2.0	1.9	1.9	1.8	1.5
Consumers Price Index (CPI)		1.8	1.5	2.0	0.2	1.5
Import prices (NZD terms)		-4.6	7.4	1.3	-1.7	-0.6
Export prices (NZD terms)		-6.3	2.9	5.8	0.0	-0.5
Wages		4.0	2.9	2.8	2.9	2.8
<i>Monetary conditions (annual average)</i>						
Real MCI		971	800	575	400	400
Nominal MCI		961	725	400	250	300
Exchange rate (TWI)		66.4	64.5	59.7	60.4	61.5
90-day bank bill yield		9.0	8.0	8.8	6.7	6.2
<i>Output and labour force</i>						
Output gap (annual average, % of potential GDP)		0.5	-0.6	-1.1	0.3	0.2
Real GDP (production)		1.6	3.0	3.6	4.0	2.0
Real GDP (annual average)		2.5	2.5	2.8	4.2	2.7
Potential output		3.7	3.7	2.9	2.7	2.8
Labour force		1.4	1.0	2.1	1.6	1.4
<i>Other information</i>						
Government operating balance (% of GDP)		2.0	1.6	1.9	2.2	2.3
Current account balance (% of GDP)		-4.7	-7.8	-7.5	-5.5	-5.8
Terms of trade (annual average)		-0.9	-3.0	1.1	2.6	1.0
Unemployment rate (annual average, % of labour force)		6.2	6.8	7.1	6.3	5.7
<i>World economy</i>						
Industrial production		3.9	2.9	1.2	2.4	2.4
Consumer prices		2.3	2.6	1.7	2.2	2.2
Short-term interest rates (annual average)		5.6	5.5	5.6	5.8	5.7

Table 2
Summary of short-term forecasts

(Quarterly percentage changes, unless specified otherwise)

	Actuals/Estimates		Projections			
	Dec-97	Mar-98	Jun-98	Sep-98	Dec-98	Mar-99
<i>Inflation measures</i>						
CPI excluding credit services (CPIX)	0.5	0.5	0.5	0.4	0.5	0.5
(annual percentage change)	(1.6)	(1.9)	(2.1)	(1.9)	(1.8)	(1.9)
Consumers Price Index (CPI)	0.6	0.4	0.6	0.5	0.4	0.4
Wages	0.4	0.9	1.0	0.3	0.4	1.1
House prices	1.4	0.3	0.1	0.3	0.1	0.2
Construction costs (residential)	1.4	1.1	0.9	0.7	0.4	0.6
<i>Monetary conditions (quarter average)</i>						
Nominal MCI	656	575	500	425	400	300
Exchange rate (TWI)	63.9	61.5	60.2	59.6	59.5	59.6
90-day bank bill yield	7.9	8.9	9.3	9.0	8.9	7.9
<i>Output and employment (s.a.)</i>						
Real GDP (production)	0.5	0.5	0.6	0.7	1.0	1.2
Total employment	0.4	0.0	0.2	0.4	0.8	0.8

2. World economy and trade

Overview

Since the December *Monetary Policy Statement*, world growth prospects have deteriorated. In particular, most analysts have significantly revised downward their forecasts of economic growth for countries in East Asia, and Japan seems to be headed into recession. Our judgement is that the outlook for East Asian economies will reduce export growth, and more so than we thought last December. Moreover, the deterioration in world growth prospects is likely to dampen business and household confidence in New Zealand. Continued uncertainty about the severity of the crisis, and widespread media coverage of it, will make households and businesses cautious about spending and investment decisions. Adding to these concerns are drought conditions, which create uncertainty about the volume growth of meat and dairy produce. Indeed, surveys point to a sharp fall-off in business confidence, and this is expected to delay business investment and employment decisions, and to dampen New Zealand's economy more generally.

On the positive side, however, the economies of the United States, Europe and Australia are buoyant, providing the potential for New Zealand's exports to be redirected from East Asia. To the extent that this is possible, export growth will be less dampened than otherwise. In addition, the easing of monetary conditions seen since December, and the further conditional easing built into these projections, will considerably soften the impact of the Asian crisis on New Zealand exporters.

World growth

Forecasts of world growth have deteriorated since the December *Monetary Policy Statement*. Based on the 14-country *Consensus* pessimists' forecast (see Box 1), world industrial production growth will slow to around 1 percent in 1998 (see figure 3).² Compared to our December world growth projections, this represents a downward revision of around 1 percent over the 1998 year. The revisions stem from lower expected growth in Asian countries and a substantially weaker activity outlook for Japan.

Figure 3
Growth in 14-country industrial production³
(annual percentage change)

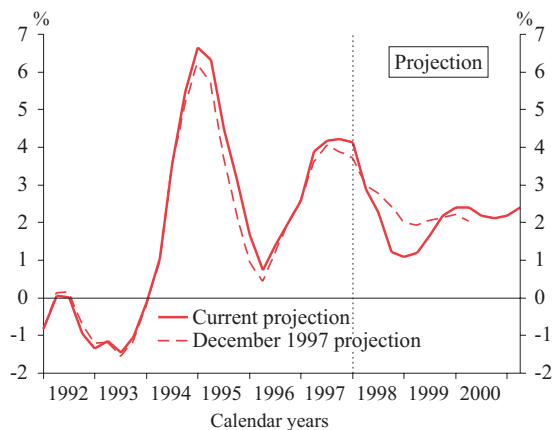
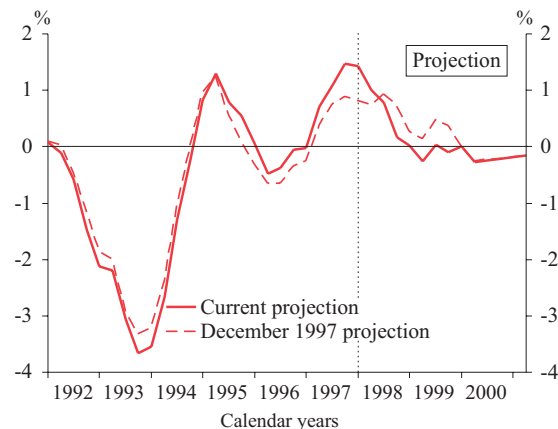


Figure 4 compares the current world output gap profile with the profile in the December *Monetary Policy Statement*.⁴

Figure 4
World output gap⁵



² As in the December *Monetary Policy Statement*, we have based our *Consensus Forecasts* on 14 countries, including our major Asian trading partners, and we have chosen a subset of the more pessimistic forecasters' views. The 14 country measure comprises Australia, China and Hong Kong SAR, France, Germany, Indonesia, Italy, Japan, Malaysia, South Korea, Taiwan, Thailand, United Kingdom, and the United States.

³ The historical series is OECD industrial production. The historical difference between the current and December projections are due to data revisions. The projections are based on the 14-country 'pessimistic' subset.

⁴ The output gap is the difference between a country's output capacity and its current output level.

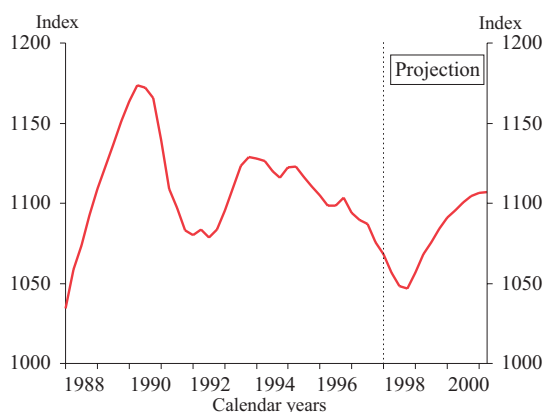
⁵ The historical differences between the current and December projections are due to data revisions.

The current profile is initially stronger due to higher-than-expected growth in Europe over the second half of 1997. However, further out the profile is significantly weaker, although it is important to note that the world economy is projected to remain close to capacity throughout the period covered.

The export sector and the terms of trade

Not surprisingly, given the weaker projected profile for world industrial production, the outlook for our exports has deteriorated since the December *Monetary Policy Statement* and remains clouded by ongoing events in Asia. At the anecdotal level, discussions with a variety of exporters indicate that they are bracing for a rough ride ahead. Many companies have revised down sales budgets for 1998 and delayed investment and employment plans. It has also become apparent that financing problems can quickly paralyse export shipments, as was the case with log exports to Korea during January. Where necessary, some exporters will re-direct unwanted Asian exports to other markets. However, given that exporters throughout the world will be simultaneously attempting to do this, and possibly competing with cheaper Asian products, we expect prices to soften. New Zealand's terms of trade – although still projected to improve over the period covered by the projections – will fall over the first part of calendar 1998.

Figure 5
The terms of trade
(annual average)



The impact of the Asian crisis on New Zealand exports will be mitigated by falls in the real exchange rate, and by relatively buoyant demand from the United States, Europe and Australia. The real exchange rate profile is considerably lower now than in the December *Monetary Policy Statement*, boosting New Zealand's export competitiveness and stabilising exporter incomes (see Box 3). At this stage, Australia and the United States do not appear to have been severely affected by the crisis and current demand is strong. Nevertheless, policy-makers in these countries are watching the situation closely for signs of deterioration.

For most of the export sector, we expect volumes will hold up reasonably well, especially in the case of primary products, unless there is a major impact from drought conditions on stock numbers. Since the December *Monetary Policy Statement*, however, we have reduced projected world export prices by a further 2 percent over the year to March 1999. The recent fall in the exchange rate more than offsets the decline in projected world export prices, and as a result, domestic export prices are projected to grow by around 6 percent in the year to March 1999.

In the tourism and forestry sectors, however, growth in volumes is expected to be weak as the reliance of these industries on Asian markets is relatively high. Tourism is still expected to pick up around the turn of the century due to the Sydney Olympics, the Americas' Cup yachting regatta, and improved price competitiveness.

Softer world demand is also expected to lower world import prices. Over the year to March 1998, world import prices are expected to fall by 3 percent. However, the fall in the exchange rate over the latter part of 1997, and the further modest decline expected in 1998, will more than offset this. Overall, imported products are projected to be more expensive in domestic terms, rising by around 7 percent over the year to March 1998, and a further 1 percent over the year to March 1999 (around 5 percent on an annual average basis).

The terms of trade reflect the relative impact of changes in export and import prices. Over recent years, New Zealand's export prices have been weaker than import prices, leading to falling terms of trade. With the outlook for world demand appearing robust as recently as mid-1997, an improvement in the terms of trade had been anticipated. However, the negative impact from Asia has led us to expect a further deterioration in the terms of trade over the first part of 1998, before they pick up only modestly over 1999.

Box 1 – The world economic outlook

Recent events in East Asia are having an adverse impact on the international economic outlook. In this box, we use *Consensus Forecasts*^a to illustrate how expectations of world growth have changed, and to provide an indication of the degree to which these developments are expected to affect the New Zealand economy.

The table below presents *Consensus* mean and ‘pessimist’^b forecasts for growth in industrial production in calendar 1998. The common theme is that expectations for growth have weakened, particularly since December 1997.

Other observations include:

- growth expectations for the ASEAN-4, South Korea, and Japan have been reduced the most significantly;
- growth expectations for the OECD have remained relatively robust, stemming from the positive prospects for the US and Europe;
- the revisions to the pessimists’ forecasts have been similar to the mean, but start from a much lower level; and,
- the revisions to the 14-country group of New Zealand trading partners have been more significant than for the OECD as a whole.

Table 3

Consensus Forecasts of world output growth in 1998^c

Annual average percent change on previous calendar year

Mean forecast

	Forecasts published in:			Total revision since Aug-97
	Aug-97	Nov-97	Feb-98	
ASEAN-4 ^d	8.0	5.8	1.1	-6.9
South Korea	8.2	8.2	3.0	-5.2
Japan	2.5	1.6	-1.0	-3.5
US	2.7	3.3	3.9	1.2
Australia	4.1	4.2	3.6	-0.5
OECD	2.7	2.9	2.5	-0.2
14-trading partners ^e	4.2	3.8	2.3	-1.9
14-trading partners (GDP)	3.8	3.4	2.3	-1.5

Pessimists’ forecast

	Forecasts published in:			Total revision since Aug-97
	Aug-97	Nov-97	Feb-98	
OECD	1.7	2.6	1.7	0.0
14-trading partners	2.9	3.3	1.1	-1.8
14-trading partners (GDP)	3.1	2.7	1.6	-1.5

a Every month, Consensus Inc. publishes an international survey of prominent economic forecasters’ projections. *Consensus Forecasts* show projections for, amongst other things, industrial output, GDP, and merchandise exports. The expert respondents include major banks, official forecasting agencies, and independent economists.

b The mean forecast is a simple arithmetic average of individual projections. The ‘pessimist’ forecast is a simple arithmetic average of the three reputable forecasters projecting the lowest growth in the forecast variable.

c Unless otherwise stated, forecasts are for industrial production growth.

d ASEAN-4 are Indonesia, Malaysia, the Philippines and Thailand. Each country is weighted equally. We use GDP growth for the Philippines as industrial production growth is unavailable from Consensus Inc.

e The 14-country measure is a New Zealand export-weighted average of Australia, China and Hong Kong SAR, France, Germany, Indonesia, Italy, Japan, Malaysia, South Korea, Taiwan, Thailand, United Kingdom, and the United States.

Table 4 shows *Consensus Forecast* estimates for New Zealand GDP growth in calendar 1998. Similar to the outlook internationally, expectations about New Zealand's economic activity have tended to worsen. The table suggests that the negative impact on the export sector is expected by most forecasters to have a significant economy-wide impact.

Other points include:

- The downward revisions in *Consensus Forecasts* have tended to be larger since November 1997 than between August and November 1997. On the other hand, the Bank tended to downgrade its expectations somewhat earlier.
- The Bank's revision to the GDP growth outlook since the September 1997 *Economic Projections* has been similar to the mean from *Consensus Forecasts*.

As in the December 1997 *Monetary Policy Statement*, we have departed from our usual practice of using the mean *Consensus Forecasts* to shape our view of world economic growth.

Instead we focus on the 'pessimist' group of forecasters in *Consensus Forecasts*. These *Projections* are also based on the larger 14-country export-weighted group of New Zealand's trading partners (in contrast to the OECD group we normally use). Motivations for this methodology include:

- our view is that the recent Asian developments will lead to further downgrades in the *Consensus* projections. These growth downgrades will take time to be fully reflected in the mean *Consensus* projections; and,
- the 14-country trading partner measure is more relevant to New Zealand export demand.

Ultimately however, individual forecasts (or subsets, such as the group of pessimists) have not proved to be significantly more accurate than the *Consensus* mean. Therefore, it will make sense to revert to the mean *Consensus* projections once the Asian crisis stabilises.

Table 4

Consensus Forecasts for New Zealand 1998 GDP growth

Annual average percent change on previous calendar year

	Forecasts published in:			Total revision since Aug-97
	Aug-97	Nov-97	Feb-98	
Upper quartile	3.8	3.8	3.1	-0.7
Mean	2.9	3.0	2.4	-0.5
Lower quartile	2.0	2.3	1.9	-0.1
Reserve Bank	3.2	2.8	2.6	-0.6

Note: Reserve Bank forecasts for GDP growth are calendar year. The August 1997 forecasts are from the September 1997 *Economic Projections*, the November 1997 forecasts are from the December 1997 *Monetary Policy Statement*, while the February 1998 forecasts are from the March 1998 *Economic Projections*.

3. Domestic demand

Overview

Domestic demand has expanded rapidly over recent years. This was driven initially by strong business investment, then supported by household consumption and residential investment. More recently, domestic demand has been increased further by rising government expenditure. Because domestic expenditure has run ahead of income growth, an external imbalance has developed. New Zealand's current account deficit has widened considerably, reflecting an increase in private sector borrowing and a reduced public sector saving rate.

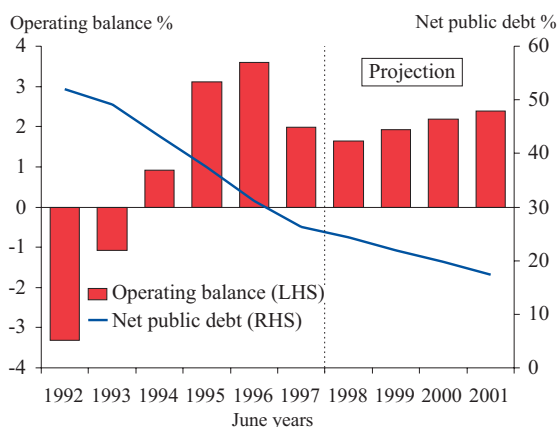
Over the projection period, consumption and business investment are expected to be more subdued than in the recent past. Lower consumer confidence, and relatively high levels of household sector debt, suggest that household consumption will more closely match household income. Business investment is also likely to be more subdued in the face of considerable demand uncertainty. However, throughout the projection period, government spending continues to rise and, when combined with the 1998 tax cuts (which amount to around 1 percent of GDP), will maintain the level of aggregate demand. An improved private sector saving performance is expected to lessen the external imbalance over the projection period.

Fiscal policy

The improvement in the government's fiscal position over recent years has enabled increased public spending, reduced income tax rates, and the repayment of public debt. These developments have added to domestic demand both directly, through extra government spending, and indirectly through increased household disposable incomes. It is also likely that the reduction in net public debt over recent years has lowered the risk premium on domestic interest rates, thereby reducing the cost of capital and raising business investment.

The recent fiscal developments have not only influenced domestic demand, they have also

Figure 6
Net public debt and the operating balance
(as a share of GDP)



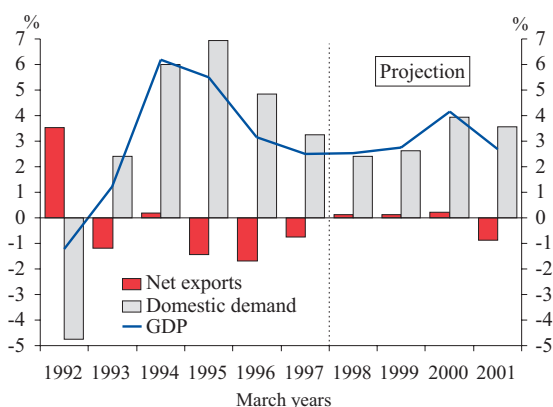
potentially raised the productive capacity of the New Zealand economy. The extent of this increase depends on:

- how much the lower income tax rates have induced people to join the labour force; and,
- how much the increase in investment has enhanced the stock of productive capital.

In practice, however, these supply developments are slow-moving. This means that the additional demand pressures arising from fiscal policy are likely to impact directly on inflation pressures over the course of the business cycle. Indeed, the gradual rise in government expenditure over 1995-96, coupled with the 1996 tax cuts, provided additional demand impetus in the economy at a time when, contrary to most expectations, demand was already growing fairly rapidly. In order to contain the additional pressure of demand on the productive capacity of the economy, monetary conditions had to be firmer than otherwise. In effect, private sector investment and export activity have had to make room for additional government spending and the increased consumption expenditure made possible by reduced taxes.

The additional government spending signalled in the Coalition Agreement, coupled with the 1998 income tax reductions, will ensure the government sector remains a key driver of demand over the projection period.

Figure 7
Contributions to GDP growth from net exports and domestic demand



However, recent developments suggest that the overall inflation response may be more muted than in the recent past. These include:

- the level of existing spare capacity, which suggests that government sector demands on resources may have less of an immediate impact on prices; and,
- the higher household debt burden, which suggests a reduced appetite for debt and a possibly stronger desire to save out of disposable income gains from the 1998 tax reductions.

Household Activity

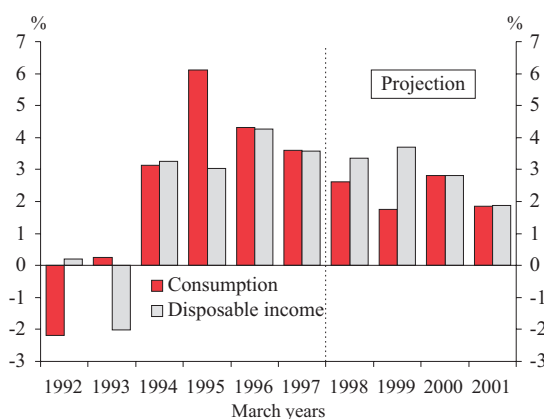
Consumption

Household consumption has grown strongly over recent years, supported primarily by rising disposable incomes. Rising asset prices, especially house prices, have added to households' wealth perceptions, bolstering their willingness to incur debt in order to consume.

The robust consumption growth over the last several months will result in real consumption growth of around 3 percent over the year to March 1998. This is despite consumer confidence being fairly subdued at present, but reflects recent developments in real retail sales, house prices, and credit card billings over recent months (refer to Box 2 on the use of indicator models in the Bank's short-term projections). In the near-term there are several

positive influences on households' income and liquidity which will sustain consumption growth. The July tax cuts, the AMP demutualisation, and easier monetary conditions will promote spending growth, as will ongoing employment and wage growth.

Figure 8
Real household income and consumption growth (annual percentage change)



In the medium-term, however, a key feature of these projections is weaker international demand, and lower business and consumer confidence. These are expected to impinge on the export sector, business investment, and employment prospects. To the extent that households see the slower growth prospect as a harbinger of reduced employment, they will be more cautious in their spending decisions. In addition, household debt servicing as a proportion of disposable income has climbed since the early-1990s, and increased uncertainty surrounds the outlook for house prices (see Residential investment). These features will act to further constrain consumption growth.

On balance, although the outlook for household income remains reasonably positive, the current high household debt levels, and increased uncertainty about future wealth, will constrain growth in consumption to around 2 to 3 percent per year.

Figure 9
Debt servicing to disposable income⁶

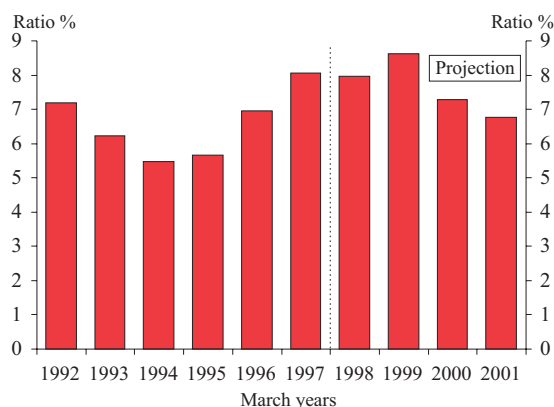
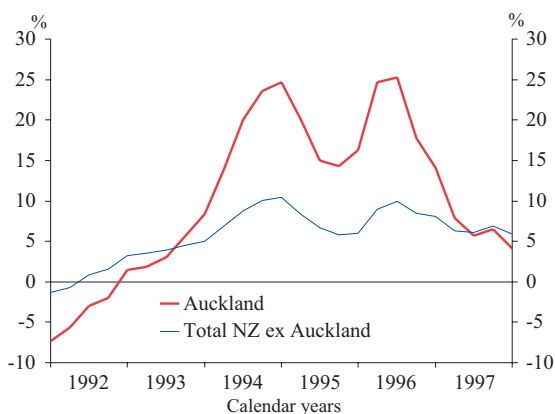


Figure 10
House price inflation⁷
(annual percentage change)



Residential investment

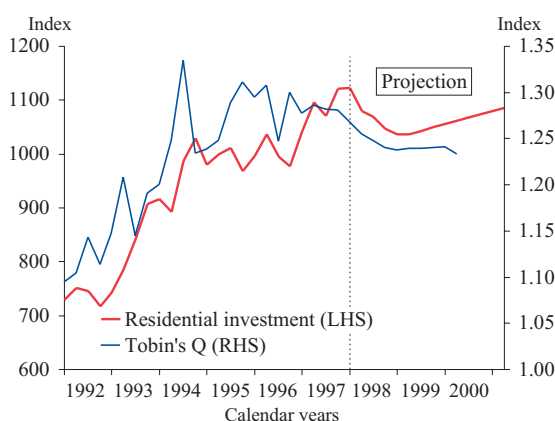
Residential investment was more buoyant than expected over 1997, although there are signs that this will not continue. A key component of residential investment over recent quarters has been the high level of investment in apartments. At times over the last year, large developments – typically apartments – accounted for as much as 15 percent of the total value of consents issued.⁸ With the rapid increase in

the supply of apartments, and the marked decline in recent migrant numbers, apartment consents over 1998 are likely to return to their trend levels.

Partly as a consequence, residential investment is projected to abate sharply over the first full year of the projection period, and then remain relatively subdued. Recent rapid construction has built up the number of houses in excess of the projected near-term demand. The housing market has also slowed, bringing with it the prospect of little growth in real house prices, and even the possibility of falls in nominal prices.

Despite falling nominal interest rates over the forecast period, other factors will impinge on construction activity. The return on rental properties has been anaemic in some major centres, and with construction cost inflation beginning to outstrip growth in existing house prices (see figure 11 and figure 20), there is now less incentive to add to the stock of dwellings.

Figure 11
Residential investment and Tobin's Q⁹



⁶ Source: Statistics New Zealand, Household Income and Outlay Accounts. Debt servicing is defined as only interest payments on consumer and mortgage debt.

⁷ The 'Auckland' house price series is an official Valuation New Zealand (VNZ) series. 'Total New Zealand ex-Auckland' is an RBNZ estimate based on VNZ data.

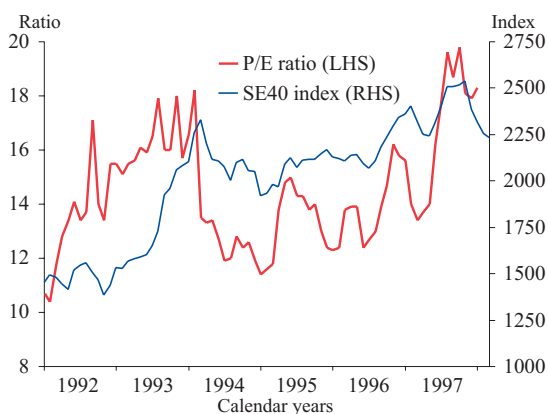
⁸ A large development is classified as one in which a consent is issued for more than 10 dwelling units to be constructed.

⁹ Investors considering whether to construct a new house or buy an existing one will compare the market value of existing houses with the cost of a new house. If the cost of construction is less than the price of buying an existing house, then it makes sense to build. This relationship, the ratio of existing house prices to construction costs, is an example of what the economics literature refers to as Tobin's Q. Our measure is based on the average price of houses less than three years old.

Business activity

Following a relatively subdued period of business sentiment in late 1996 and early 1997, business activity began to improve over the second half of 1997. Improved levels of business confidence were reflected in rising investment, greater imports of capital equipment, increased employment, and improved share prices and P/E ratios (figure 12).¹⁰ However, with the onset of the Asian crisis, and sluggish domestic demand, business sentiment has again turned down.

Figure 12
Equity prices and P/E ratios¹¹



Reduced international growth prospects and weaker domestic demand have begun to dampen investment. The most direct effect has been on the export sector, although indirect effects elsewhere in the economy have also been important. Negative investor sentiment about the Asian region, and concerns about the sustainability of New Zealand's current account deficit, have been reflected in sharply higher short-term interest rates and a weaker New Zealand dollar. This has had spill-over effects on spending plans and has led domestic firms to be cautious about investment and employment expansion.

¹⁰ A P/E ratio is the ratio of price to earnings, which is a useful indicator of investors' expectations of future earnings. An increase in the P/E ratio indicates that investors anticipate that firms will produce higher net profits in the future.

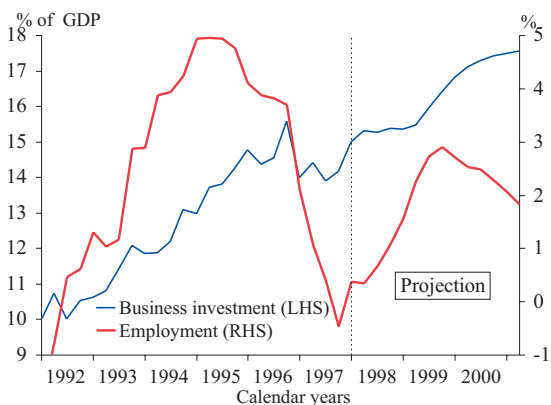
¹¹ Data source: Datastream. Equity prices are the New Zealand Stock Exchange top 40 companies determined by market capitalisation (NZSE40). The P/E ratio is derived from the companies in the NZSE40 stock market index.

Business plans are also being adversely affected by the drought in eastern New Zealand.

Business activity is projected to recover from late 1998, as the effects of past, and projected, easier monetary conditions improve business profitability. Much of the initial fall in monetary conditions has occurred via the exchange rate, with the TWI having fallen by more than 10 percent from its peak. Over the projection period, easier monetary conditions are expected to result in lower interest rates, while the exchange rate falls at first and then recovers gradually to its current levels.

Looser monetary conditions are expected to boost business profitability by improving both domestic demand and the international competitiveness of New Zealand exporters. Rising business profitability will induce firms to increase investment and employment. The improved outlook for businesses will feed into household activity via higher employment and increasing real wages, thereby supporting domestic demand into 1999 and increasing imports of capital goods.

Figure 13
Growth in employment, and business investment
(Employment, annual percentage change;
Investment, share of GDP)



The outlook for non-residential building investment remains strong. Increased business activity from 1999 is projected to boost demand, particularly for new factory space and distribution warehouses. Low vacancy rates in the central business districts of both Auckland and

Wellington will also result in increased investment in central city office space. However, slower business activity in the near term, and a contraction of international funding flows, are expected to partially constrain non-residential building growth.

Investment in plant and equipment excluding computers is projected to accelerate over late-1998 and into 1999 as business activity recovers. The growth in plant and equipment investment is driven by both a cyclical boost in business activity, and some long-run investment considerations. For example:

- modern capital equipment contains a significant component of high technology, which typically requires high depreciation rates. This will necessitate more rapid investment just to maintain the net capital stock; and,
- the strong growth in output in the 1990s resulted in the capital/output ratio falling. This suggests that investment growth is likely to exceed that of the aggregate economy for a sustained period in the future.

Box 2 – Using indicator models for short-term projections

The Reserve Bank's quarterly projections of the New Zealand economy are largely formed using its recently developed *Forecasting and Policy System* (FPS).^a The core macroeconomic model in FPS provides the framework for the projections from about one year forward. However, this core model is not well suited to making short-term assessments. Instead, more accurate short-term forecasts can be provided by statistical techniques, as captured by our indicator models.^b In forming projections, the ability to accurately assess short-term developments is important given that:

- the projection starting points are uncertain since much of the data is already out of date by the time it is published, eg quarterly GDP data is at least 3 months old when released; and,
- the Bank must be able to monitor developments between official projections, thus providing room for flexibility in the MCI as new economic information arises.

When developing indicator models, the most difficult task is to select the relevant subset of data that captures the information about the variable of interest. Our selection criteria were based on the ability of the data to improve a one-quarter-ahead forecast and the requirement that it provide information in addition to other variables. For example, retail sales and consumer confidence both individually help to predict household consumption, but consumer confidence provides very little *additional* predictive power once retail sales are included.

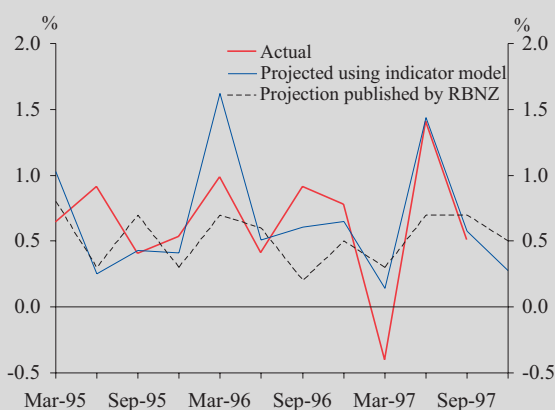
Table 5 provides a summary of some of the indicator models developed to date, and the relevant explanatory variables. Some general

observations include how few variables exist in each model and the absence of survey data in most.

By way of example, an important indicator model we have developed is for quarterly GDP growth. Many potential indicators were tested, including consumer confidence, real house prices, employment growth and hours worked, capacity utilisation, and business confidence. However, these variables did not perform as well as real retail sales (ex-auto), cement sales, and road user charges. Retail sales is significant because it picks up a significant proportion of total GDP, while cement sales capture many of the turning points or volatility. The road user charges data capture the impact of the number of trading days, as well as fluctuations in the volume of goods being distributed.

Figure 14 below compares the Bank's previous judgmental methods, actual outturns for GDP and forecasts from the indicator model. The indicator model wins hands down in predicting GDP developments one quarter ahead.

Figure 14
GDP forecasts one-quarter ahead
(quarterly percentage change)



^a The role of FPS in forecasting at the Bank is described in Box 1 of the June 1997 *Monetary Policy Statement*. An introduction to the structure and properties of FPS may be found in the September 1997 *Reserve Bank Bulletin*, while a full description is in the Bank's *Research Paper No.43* (August 1997).

^b For the technically minded, the selection procedure included graphical analysis, statistical tests for unit roots, cointegration and Granger causality, and a multi-stage estimation process. The final models are variants of the Vector Autoregression (VAR) econometric methodology.

Table 5
Some indicator models and their explanatory variables

GDP

- Cement sales
- Real retail sales (ex-auto)
- Real road user charges

Wholesale and retail trade production GDP

- HLFS employment
- OTI export volumes

Investment in plant and equipment (ex-computers)

- National Bank activity outlook
- Consumer confidence
- Imports of capital goods (ex-transport)

Consumption

- Real credit card billings
- Real house prices
- Real retail sales (ex-auto)

Manufacturing production GDP

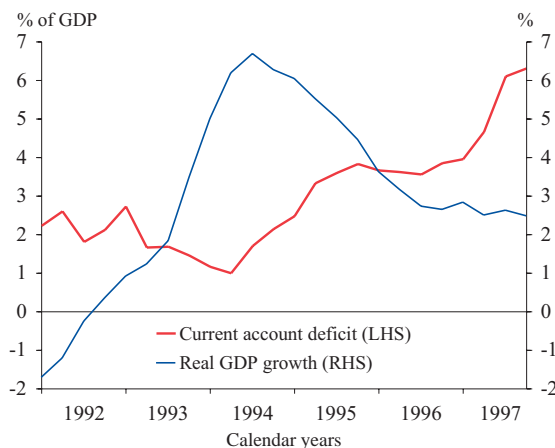
- QSBO manufacturing
- Real retail sales (ex-auto)
- Real road user charges

4. Meeting the demands

With domestic spending having run ahead of income growth, New Zealand's current account deficit has widened over recent years. This begs the questions: is it sustainable? and what does it matter for monetary policy? If the deficit is not sustainable, then any adjustment will have an influence on inflation developments. The manner and timing of any possible adjustment can alter the inflation outlook, and hence desired monetary conditions.

First, is the deficit sustainable? Ultimately, sustainability depends on the country's ability to service its debts. Thus, a sustainable position cannot involve an ever increasing debt-service burden. This means that the current account deficit as a proportion of GDP, and the corresponding accumulation of external debt, cannot exceed the growth rate of GDP forever. The current account deficit reached over 6 percent of GDP in the September 1997 year, well in excess of the growth in real GDP (see figure 15). In this situation, two things could happen: either New Zealand's potential growth rate may gradually increase, or a slower rate of debt accumulation could evolve. Our projection assumes that there will be a gradual adjustment in the current account deficit primarily due to slower private sector consumption and investment growth.

Figure 15
Growth in real GDP and the current account deficit.
(GDP, annual average percentage change; Current account deficit as a percentage of GDP)



The potential output growth rate of a country is that rate which can be sustained without promoting an economic imbalance, such as increasing inflation or an ever-increasing current account deficit. Potential output growth arises from the combination of growth in the labour force and in labour productivity. The latter depends on the amount of capital per worker and the rate of technology growth. Over the projection period, both the labour force and labour productivity are expected to grow by around 1.5 percent per annum respectively. In sum, growth in New Zealand's potential output is estimated to average around 3 percent over the projection period.

Figure 16
Contributions of labour, capital, and technology to potential output¹²
(annual percentage change)

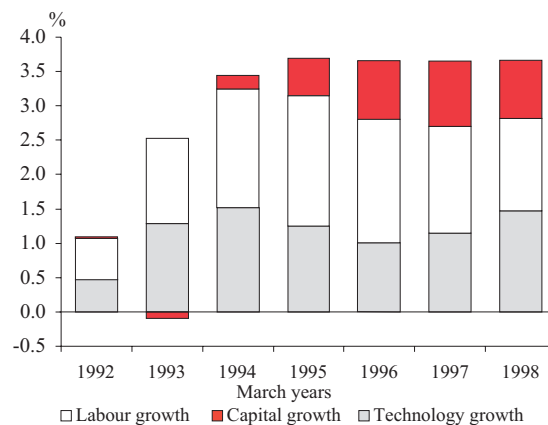
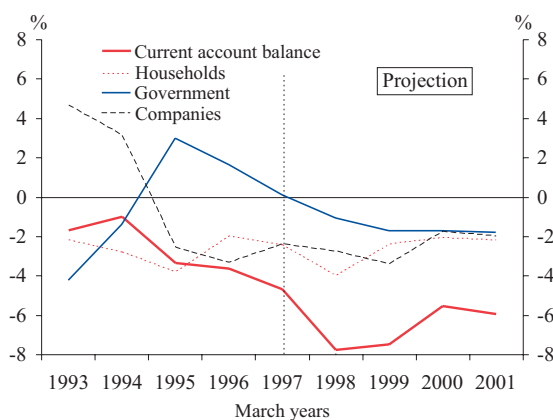


Figure 16 shows the growth in the labour force, capital investment, and technology developments. Clearly, in addition to technology developments, the key impetus to growth in potential output over the early-1990s was from absorbing more people into the employed labour force. Over more recent years, as employment growth has slowed, capital investment that growth in has supported the growth

¹² Source: RBNZ. The methodology is described in Conway P. and Hunt B. (1998) 'Productivity growth in New Zealand: has reform initiated convergence?' *Reserve Bank of New Zealand Discussion Paper*, forthcoming. The technology growth component is often referred to as total factor productivity (TFP). This is the unexplained component of potential output growth once both capital accumulation and labour growth have been accounted for. Growth in TFP can be explained by, for example, better business practices and improved technology.

Figure 17
The current account deficit and
sectoral saving trends¹³
(as a share of GDP)



in potential output. In the medium term, it is likely New Zealand's potential output will remain around these rates, in excess of those experienced in countries such as the United States. This is because of the ongoing opportunity for implementing known technologies in domestic business practice, often referred to as technological 'catch-up'.

Since there is little prospect of labour force growth accelerating substantially, or of rapid productivity improvement, stabilisation of New Zealand's debt ratio is most likely to occur via reduced expenditure growth. The most recent increase in debt has been driven by the private sector, as both consumption and residential and business investment have grown. The recent decline in the government's saving rate has also impacted negatively on the external deficit (see figure 17). These trends suggest any external correction is most likely to occur via subdued private sector demand.

How does this matter for monetary policy? The way in which the external adjustment comes about is important to the Bank as it will impact on inflation developments. For example, a sudden sharp downward adjustment in consumption, or business investment, could significantly dampen the outlook for inflation. By contrast, a rapid decline in the exchange rate could lead to a build-up in inflation pressure and thereby require firmer monetary conditions.

In this projection, the modest external adjustment is shared between the household and business sectors, with their relative shares partly determined by the mix of conditions. However, since households generally have the greater flexibility in altering expenditure plans, it is possible they will share the largest burden of the external adjustment (see figure 17).

The household adjustment is driven by lower consumption and residential investment, as real interest rates remain around their current levels for the first half of 1998. If, instead, real house prices actually fall, rather than remain constant as projected, pressure on inflation would be further reduced. This would imply easier monetary conditions. By contrast, if the exchange rate experiences a sudden sharp depreciation, this would put upward pressure on interest rates in order to maintain the MCI level, which would act to dampen the housing market. Either way, an adjustment is likely to occur in the household sector.

In sum, any external adjustments are likely to occur primarily in the private sector, rather than in the government sector, and to be mostly reflected in reduced demand growth. The pace of any adjustment, and the resulting mix of monetary conditions, are important for future inflation developments.

¹³ Source: The current account balance is from Statistics New Zealand (SNZ), and is the balance of payments definition. The sectoral financial positions are RBNZ estimates. These indicate savings positions net of investment. The Government financial balance is the fiscal operating balance plus local government savings, minus non-market government investment. Adjustments have been made for foreign exchange gains/losses and non-cash items. The Households financial balance is the SNZ Household Income and Outlay Account definition for savings plus net migrant transfers, minus residential investment. The Companies financial balance is the current account balance, less Government and Households balances.

5. Inflation

Overview

Since the December *Monetary Policy Statement*, inflation out-turns – and other indicators of inflation – have evolved roughly as we had projected. Nevertheless, the projected profile for inflation has been revised up in the near term. For the most part, this reflects the fall in the exchange rate since December, as well as some further falls associated with future conditional monetary policy easing. The drop in the exchange rate is expected to show up in the near term in higher prices for imports, and thus in the inflation rate of tradeable goods and services.

The rise in inflation rates in the tradeables sector is expected to be offset to some extent by weaker inflation in prices for non-traded goods and services. Weakening domestic confidence, the effects on the domestic economy of slow export growth, and the pressure on housing prices from firm short-term interest rates, should all serve to hold down prices of non-tradeable goods and services.

Although inflation in the tradeables and non-tradeables sectors will to some extent offset each other over the projection period, the effects from the tradeables side will be felt more quickly. This reflects the fact that prices of domestically-traded goods and services tend to adjust sluggishly. As a result, the projected inflation path shows the inflation rate rising slightly in the first half of 1998 – although remaining well within the 0 to 3 percent band – but falling thereafter, and reaching the midpoint of the inflation band by the year 2000.

Short-term outlook

The December quarter CPIX¹⁴ inflation rate of 0.5 percent was roughly in line with the Bank's expectation, and brought the annual rate of inflation down to 1.6 percent. However, inflation in the non-tradeables sector continued to run well ahead of inflation in the tradeables sector.

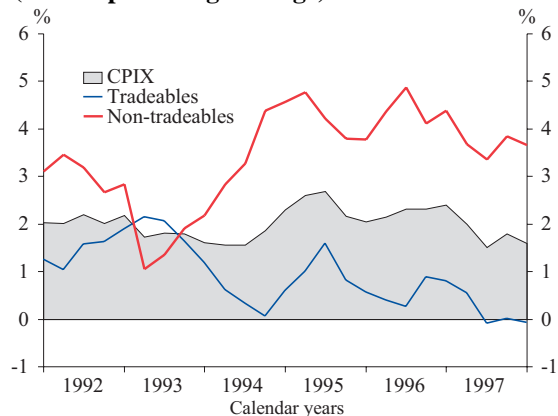
Inflation is expected to increase by 0.5 percent in both the March and June quarters. The key contributors to March quarter inflation are expected to come from the Food, Home Ownership, Tobacco and Alcohol, and Recreation and Education groups. Inflation in the tradeables sector will increase as the effects of the recent exchange rate depreciation are passed through into consumer prices, while inflation in the non-tradeables sector will ease slightly. Based on these forecasts, inflation will increase to 1.9 percent in the March 1998 year, and to 2.1 percent in the June 1998 year.

Two factors are expected to provide dampening influences on prices over this period as compared with our expectations in December 1997. First, the effects from the recent exchange rate depreciation are apparently taking longer to show up in terms of higher imported prices as profit margins are squeezed. Secondly, the housing market has slowed relative to what we projected in December.

Medium term

The medium-term profile of our inflation projections has changed since the December *Monetary Policy Statement*. The further depreciation in the exchange rate, with the lower New Zealand dollar expected to persist, results in somewhat higher inflation over 1998. But there will also be more excess capacity in the

Figure 18
CPIX inflation: tradeables and non-tradeables
(annual percentage change)

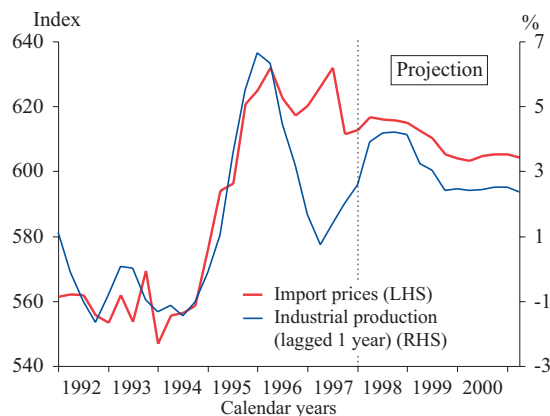


¹⁴ The Consumers Price Index excluding Credit Services.

economy for longer, and that will act to bring inflation back towards the centre of the target range by the end of the period.

The emerging trend towards slightly higher inflation in the tradeables sector, and slightly lower inflation in the non-tradeables sector, is expected to continue over the medium term. Although the world prices of many consumer goods and services are falling, the lower exchange rate means that the domestic prices of those goods will increase slightly over the next year or so. Moreover, by 1999, we expect the world price of imported consumption goods will begin to rise.

Figure 19
World commodity import prices and OECD industrial production growth¹⁵
(annual percentage change)



Some commentators have raised the possibility of a period of world deflation in the wake of the Asian crisis. However, there are several reasons to believe that to be an unlikely scenario. First, many of the Asian countries in difficulty will face rising cost pressures as a result of both rising import costs in local currency terms, and rising debt servicing costs. Second, with demand in Europe and the United States holding up, 'pricing-to-market' strategies are likely to support prices. Finally, many firms are facing severe financing constraints, and significant industry restructuring in Asia is likely. This restructuring may make

¹⁵ Although trade volumes are driven by demand in the 14-country export-weighted index of industrial production (see Box 1), world import prices more clearly match OECD-wide production trends.

some capital redundant, thereby reducing the level of excess supply and further supporting prices.

The outlook for slightly higher inflation in the tradeables sector is in contrast to the reduced pressure from inflation in the non-tradeables sector. This is partly due to subdued housing sector inflation, but also a sustained period of modest excess capacity in the economy, which will act to dampen underlying inflation trends. Relative to the December *Monetary Policy Statement*, the output gap is projected to be larg-

Figure 20
House prices and construction costs¹⁶
(annual percentage change)

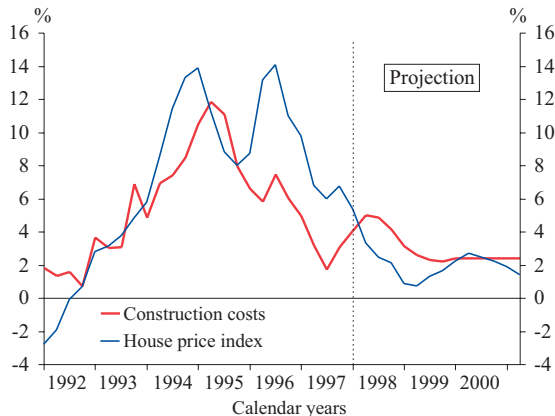
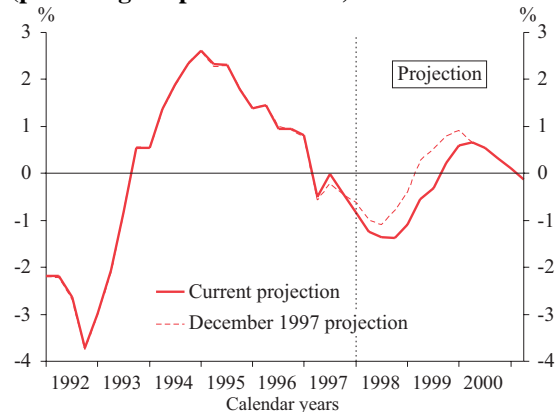


Figure 21
Output gap
(percentage of potential GDP)



¹⁶ The Construction Cost series (Purchase and Construction of New Dwellings) is an official Statistics New Zealand series. House prices is a Valuation New Zealand series.

er and more persistent. It is now not until mid-1999 that the economy is expected to move into a position of modest excess demand. However, the resulting inflation pressure occurs outside the inflation projection period.

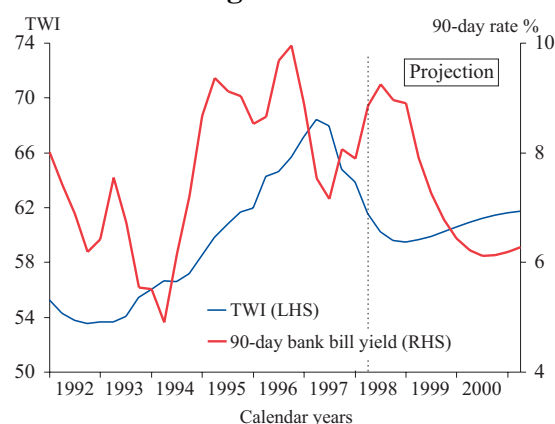
Monetary conditions

The monetary conditions index (MCI) is projected to decline from a desired level of 500 in the June quarter, to a low of 250 for the March 2000 year. This is a significantly more relaxed profile compared to our December *Monetary Policy Statement*. The key reason for the lower profile is the rise in excess capacity in the economy, which will also persist for longer. The persistent negative output gap over the first half of the projection period causes sustained falls in inflation over 1999 and into 2000, providing considerable scope for easier monetary conditions.

Most of the recent easing in monetary conditions has occurred through a depreciating exchange rate. This reflects the nature of the economic situation: households' appetite for debt has kept interest rates high, while there has been concern about the size of the current account deficit.

The projected MCI path has a further modest easing in the TWI, which maintains some upward pressure on short-term interest rates. Ninety-day rates are projected to remain around their current levels over the first two quarters of the projection. If the exchange rate falls more significantly, and remains lower, the conditional MCI path could well be revised as imported inflation pressures increase (see Risks and uncertainties).

Figure 22
Nominal 90-day interest rate and the nominal exchange rate



Box 3 – The TWI and inflation projections

Some analysts have questioned whether the TWI overstates the effective depreciation of the New Zealand dollar in recent months. Concern arises because the Asian currencies, against which the New Zealand dollar has appreciated very substantially are excluded from the TWI basket. If the effective depreciation is overstated, then the use of the TWI in the Bank's monetary conditions index (MCI) will also tend to overstate the easing in the overall stance of monetary policy. This box addresses the issues arising from this concern.

The exchange rate and future inflation

A decline in the value of the New Zealand dollar can affect inflation: directly, by raising import prices; and indirectly, by making New Zealand-made products more competitive, and thereby raising the demand for them both domestically and internationally. It is the indirect influence which is captured in the construction of the Bank's monetary conditions index (MCI). That is, a 2 percent depreciation in the TWI stimulates demand for local production by about as much as a 1 percentage point fall in 90-day interest rates. Over time, the rise in demand may be reflected in increased domestic price pressure.

Clearly, the reliability of these estimates depends, in part, on the reliability of the TWI as an approximation of New Zealand's effective exchange rate. At present the TWI is calculated using the bilateral import and export weights of five of New Zealand's key trading partners (the United States, Australia, Japan, the United Kingdom, and Germany). However, because these countries make up only around 60 percent of New Zealand's merchandise external trade, it has been suggested that the TWI may misrepresent New Zealand's effective exchange rate.

If the currency basket is widened to include the currencies of several Asian trading partners other than Japan, the fall in the exchange rate as

measured by the TWI would obviously be more subdued. However, there are also good reasons to think that the USD, against which the NZD has depreciated substantially, is under-weighted in the TWI basket. To the extent this is the case, there is an off-set to the bias caused by omitting Asian currencies. So why may the USD be under-represented in the TWI?

First, in the case of trade in **primary commodities**, which represent an important proportion of New Zealand's total exports, it is the significance of our trading partners in the **world market** that matters most when assessing the relative importance of currencies for New Zealand exporters and importers. Traders in primary commodities generally face a single world price, and it is the currencies of the countries that are the larger end-consumers that most influence the world price. Incorporating this analysis into the currency weighting calculations for New Zealand's primary commodity trade results in larger weights for the currencies of the world's larger economies, notably the US dollar.^a

In the case of trade in **manufactures**, the exchange rates of our direct, or bilateral, trading partners affect international **price competitiveness**, and the weight we attach to the currency of another country should reflect the amount of our trade in manufactures with that country. Additionally, however, it is necessary to take into account competition from **third countries**. For example, changes to the value of the Australian dollar will have a direct effect on Fisher and Paykel's exports of whiteware to Australia. But changes to the value of other currencies will also have a bearing, because other whiteware manufacturers, such as AEG in Germany, also export to Australia. So when considering the currency weights that are relevant, account has to be taken of not just the Australian dollar, but also the currencies of those other countries that export to Australia, and their shares of the Australian market.

^a The German mark, against which the NZD has depreciated during the last seven months, is also under-weighted. The over-weighted currency is the AUD.

Again, when we take account of these third country competition effects, we find that the currencies of the world's major economies generally feature more prominently than is suggested by bilateral trade weights alone.

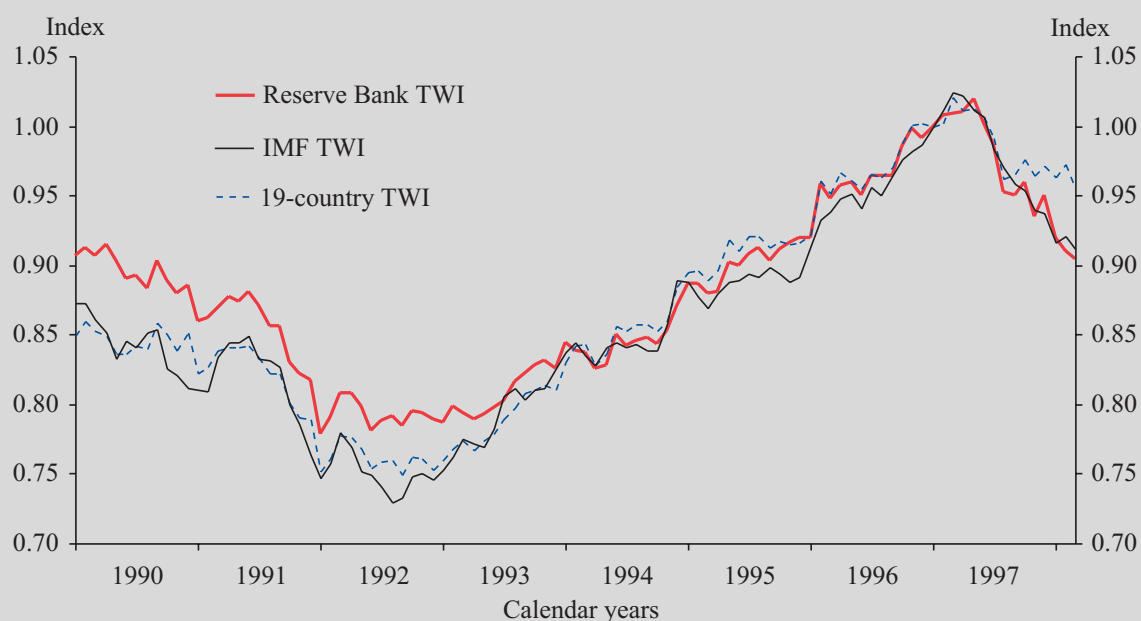
The International Monetary Fund (IMF) calculates measures of effective exchange rates within a framework which takes the above factors into account (on the basis of a 19-currency basket for the New Zealand dollar). The effective exchange rate index they calculate for the New Zealand dollar and the Reserve Bank's own TWI, since 1990, are shown in figure 23. Two observations can be made:

- the TWI and the IMF's index have tracked each other quite closely over the period as a whole; and,
- the IMF measure and the official TWI show the effective value of the New Zealand dollar to have depreciated by about 6 percent and 5 percent respectively since August 1997.

A possible weakness of the IMF measure of the effective value of the New Zealand dollar is that it is based on 1988-90 trade data, and in particular excludes the currencies of Malaysia, Indonesia, and Thailand (but it does include the South Korean won). If the IMF's currency basket were updated to reflect more recent trading patterns, it is possible that some of these currencies would be included, and that the resulting IMF exchange rate index would show less recent depreciation. However, for the reasons outlined above, it would certainly show more depreciation than would a TWI constructed simply by expanding the number of currencies in the TWI basket.

Also shown in figure 23 is an index calculated by simply expanding the TWI basket to include the 19 currencies that correspond with the currencies of New Zealand's top 19 bilateral trading partners in 1996 and 1997. This measure suggests that there has been no depreciation of the New Zealand dollar since August last

Figure 23
Trade weighted exchange rate indices^c
 (Base period January 1997 = 1.00)



year, compared with the 5-6 percent depreciation according to the TWI and IMF. The likelihood is that the appropriate measure lies somewhere within this range of estimates.^b

The Bank intends to continue assessing these issues and, given that the current basket of TWI currencies needs to be reviewed before 1 January 1999 (when European monetary union is scheduled to take effect), a revised currency-weighting methodology may be introduced. However, for the time being the current TWI estimation is considered a good approximation of New Zealand's effective exchange rate, and a good indicator of future price pressures.

For further background on these issues, see:

White B, (1997), 'The trade weighted index (TWI) measure of the effective exchange rate', *Reserve Bank Bulletin*, vol 60 no 2, June.

Wickham, P, (1987), 'A revised weighting scheme for indicators of effective exchange rates', *International Monetary Fund Working Paper* WP/87/87, December.

Zanello, A and D Desruelle, (1997), 'A primer on the International Monetary Fund's Information Notice Service', *International Monetary Fund Working Paper* WP97/71, May.

^b Note that this analysis is based on merchandise trade alone. It is not possible to take account of trade in services because direction of services trade data is not available. However, it seems likely that trade in services is weighted more toward the major countries than is New Zealand's merchandise trade, providing a further degree of assurance that the TWI is less biased as the result of excluding East Asian currencies.

^c Estimated from December 1997 using IMF trade weights.

6. Risks and uncertainty

Inflation

We perceive the risks surrounding our inflation profile to be balanced. If house price inflation remains strong, or the exchange rate weakens further than now expected, near-term inflation could be higher. Conversely, if the world price of our imports deteriorates sharply, or household spending fails to recover, then inflationary pressures would be lower. This leaves policy poised between potentially higher short-term inflation prospects due to exchange rate developments, and lower medium-term inflation due to aggregate demand developments.

Uncertainty surrounds world growth

As noted, in these projections we have adopted a rather pessimistic scenario for export growth because of developments in East Asia. It is possible that this pessimism could turn out to be overstated. Some East Asian countries, notably Thailand and Korea, are already moving rapidly to restructure their economies and have gained IMF approval and assistance for their reform programmes. Additionally, stock markets in those countries have rebounded, reflecting investor confidence that such reforms will proceed and be successful.

On the other hand, events in Asia are still unfolding, and there is a non-negligible likelihood that the crisis could deepen. Most commentators believe that developments in Indonesia will weigh heavily on the entire region, and the situation in that country is still quite uncertain. Moreover, many well-informed observers believe that the Japanese economy is headed into recession, and China's economy, although apparently weathering the worst of the financial storms, remains a significant question mark. If the crisis were to deepen, our forecast for exports could turn out to be too optimistic, and price pressures would be reduced by more than we have already projected.

Weaker domestic demand

Recent domestic and international events may lead to a decrease in household confidence, with greater uncertainty about future incomes and employment. Similarly, lower house prices than assumed may adversely affect household perceptions of wealth. Both of these factors could result in households taking a more cautious approach to expenditure.

However, the risks surrounding household expenditure are not entirely on the downside. The extent to which households will spend the July tax cuts and income from the AMP demutualisation remains uncertain. There is also further scope for improvement to household liquidity from the demutualisations of Tower and the Public Trust, and the possible privatisation of the Auckland Regional Services Trust.¹⁷

The mix of conditions

The Bank has no direct control over the way in which the exchange rate or interest rates evolve within a desired set of monetary conditions. Instead, this mix is determined by a host of domestic and international private sector decisions. For instance, concerns about the current account deficit could lead to a more prolonged fall in the exchange rate than envisioned in these projections.

It is possible to gauge the implications of a more prolonged fall in the exchange rate using the Bank's FPS model. Figures 24b and 24c show the projected path of the inflation rate and monetary conditions where the fall in the exchange rate is more prolonged. The lower exchange rate would lead to higher inflation than expected, implying that monetary conditions would need to be held tighter. This implies sharply higher short-term interest rates, and significantly lower levels of consumption. Consequently, the projected path for the MCI in the central projection should be viewed as conditional, with significantly different outcomes a possibility.

¹⁷ These proposed schemes are not incorporated into our projections.

Figure 24a
Central and alternative TWI

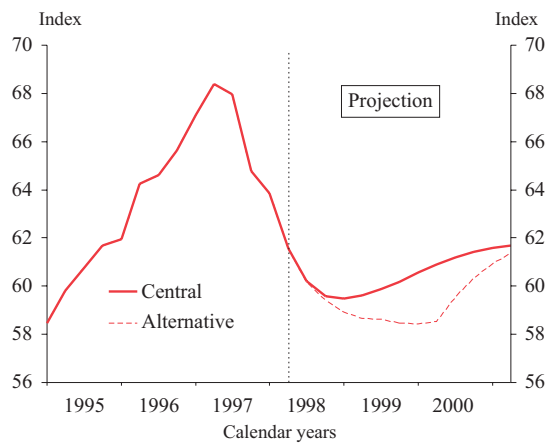


Figure 24b
Central and alternative CPIX
(annual percentage change)

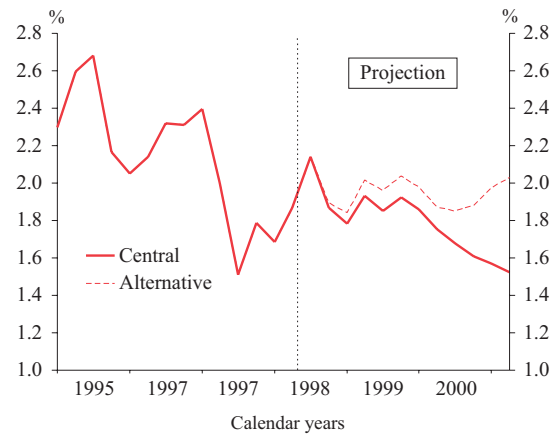


Figure 24c
Central and alternative MCI

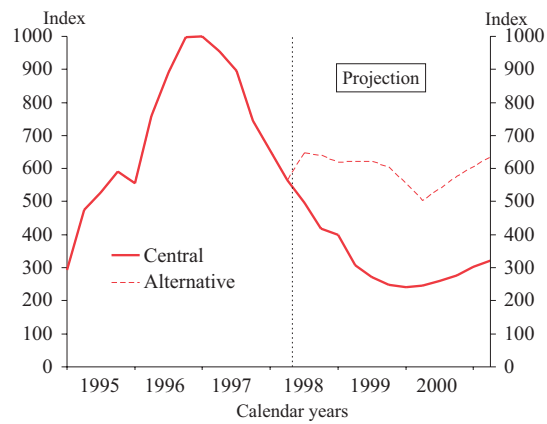
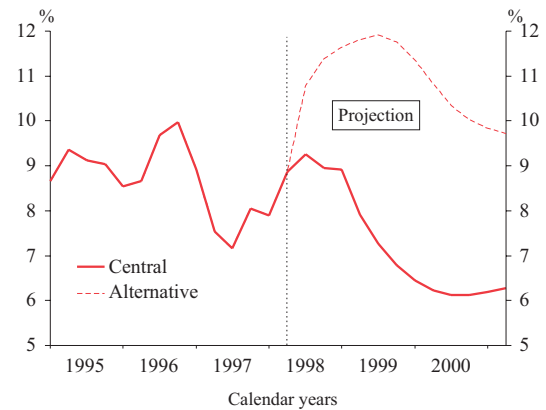


Figure 24d
Central and alternative 90-day interest rates



Appendices

Notes to Tables 1 and 2

Import prices	<i>Overseas Trade Index</i> (domestic currency).
Export prices	<i>Overseas Trade Index</i> (domestic currency).
Wages	Private sector ordinary time average hourly earnings, <i>Quarterly Employment Survey</i> .
House prices	Average house price index, Valuation New Zealand.
Construction costs (residential)	Component of the Housing Group, Consumer Price Index.
Real MCI	Reserve Bank of New Zealand, defined as: $\{(R_{90day} - R_0) + (1/2) * [\log_n(RTWI) - \log_n(RTWI_0)] * 100\} * 100 + 1000$ where R90day and RTWI are the estimated real 90-day 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 CPI excluding credit services. 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 = 6.51 and RTWI ₀ = 1 (normalised).
Nominal MCI	Reserve Bank of New Zealand, defined as: $\{(90day - r_0) + (1/2) * [\log_n(TWI) - \log_n(TWI_0)] * 100\} * 100 + 1000$ 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.
Exchange rate (TWI)	Reserve Bank of New Zealand.
90-day bank bill yield	Reserve Bank of New Zealand.
Output gap	Defined as percentage difference between real GDP (production, seasonally adjusted) and potential output GDP.
Potential output	Reserve Bank of New Zealand definition and estimate.
Total factor productivity	Reserve Bank of New Zealand estimate.
Labour force	<i>Household Labour Force Survey</i> .
Total hours worked	<i>Household Labour Force Survey</i>
Government operating balance	Percentage of nominal GDP (production), June year.
Current account balance	Percentage of nominal GDP (production).
Terms of trade	Defined using domestic-currency export and import prices, <i>Overseas Trade Indices</i> .
Unemployment rate	Seasonally-adjusted rate, <i>Household Labour Force Survey</i> .
Industrial production (OECD)	Historical data is from the OECD. Projections based on 14-country <i>Consensus Forecasts</i> pessimists. Seasonally adjusted.
Foreign consumer prices	Reserve Bank of New Zealand definition and estimate. TWI trading partners' CPI inflation,

Foreign short-term interest rates

weighted by TWI weights. Projections based on *Consensus Forecasts*. Reserve Bank of New Zealand definition and estimate. 80:20 weighted combination of U.S. and Australian short-term interest rates. Projections based on *Consensus Forecasts*.

Annual average percentage change

$(\text{Year}/\text{Year}_{-1}) * 100$

Annual percentage change

$(\text{Quarter}/\text{Quarter}_{-4}) * 100$

Quarterly percentage change

$(\text{Quarter}/\text{Quarter}_{-1}) * 100$

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

Table A

CPI inflation projections and monetary conditions

(CPIX and CPI are percentage changes)

	CPIX		CPI		TWI	90-day rate	MCI		
	Quarterly	Annual	Quarterly	Annual			Nominal	Real	
1995	Mar.	0.5	2.6	1.2	4.0	59.8	9.4	474	397
	Jun.	0.6	2.7	1.0	4.6	60.8	9.1	527	435
	Sep.	0.4	2.2	0.2	3.5	61.7	9.0	590	563
	Dec.	0.6	2.1	0.6	2.9	61.9	8.5	557	567
1996	Mar.	0.6	2.1	0.5	2.2	64.2	8.7	759	759
	Jun.	0.8	2.3	0.8	2.0	64.6	9.7	890	886
	Sep.	0.4	2.3	0.6	2.4	65.6	10.0	997	1009
	Dec.	0.7	2.4	0.7	2.6	67.1	8.9	1000	1000
1997	Mar.	0.2	2.0	-0.3	1.8	68.4	7.5	956	989
	Jun.	0.3	1.5	0.1	1.1	68.0	7.2	897	965
	Sep.	0.7	1.8	0.5	1.0	64.8	8.1	746	812
	Dec.	0.5	1.6	0.6	0.8	63.9	7.9	656	750
1998	Mar.	0.5	1.9	0.4	1.5	61.5	8.9	575	650
	Jun.	0.5	2.1	0.6	2.0	60.2	9.3	500	600
	Sep.	0.4	1.9	0.5	2.1	59.6	9.0	425	575
	Dec.	0.5	1.8	0.4	1.9	59.5	8.9	400	575
1999	Mar.	0.5	1.9	0.4	2.0	59.6	7.9	300	475
	Jun.	0.4	1.8	-0.2	1.2	59.9	7.3	275	425
	Sep.	0.4	1.9	0.1	0.7	60.2	6.8	250	375
	Dec.	0.4	1.9	0.1	0.4	60.6	6.4	250	375
2000	Mar.	0.4	1.8	0.2	0.2	60.9	6.2	250	375
	Jun.	0.4	1.7	0.4	0.7	61.2	6.1	250	375
	Sep.	0.4	1.6	0.4	1.0	61.4	6.1	275	400
	Dec.	0.4	1.6	0.4	1.3	61.6	6.2	300	400
2001	Mar.	0.3	1.5	0.4	1.5	61.7	6.3	325	425

Table B
World outlook
 (Percentage change in annual totals)

March year	Actuals							Projections		
	1992	1993	1994	1995	1996	1997	1998e	1999	2000	2001
14-country industrial production ⁽¹⁾	-0.9	-0.9	-0.4	5.5	2.5	2.5	3.8	1.4	2.2	2.2
World CPI inflation ⁽²⁾	3.2	2.7	1.9	2.2	2.5	2.6	2.6	1.7	2.1	2.3
Domestic										
Import prices	1.0	6.7	-2.7	-1.8	-0.7	-3.4	2.3	4.8	-1.0	-0.9
Export prices	-1.3	9.3	-1.2	-2.1	-2.8	-4.2	-0.8	6.0	1.5	0.1
Terms of trade	-2.3	2.4	1.5	-0.3	-2.1	-0.9	-3.0	1.1	2.6	1.0
March quarter										
World 90 day rate ⁽³⁾	4.7	3.6	3.7	6.5	5.7	5.5	5.5	5.8	5.8	5.7
World bond rate ⁽³⁾	7.8	6.7	6.2	8.0	6.4	6.8	5.6	6.3	6.4	6.2

e = estimate.

OECD industrial production and world CPI inflation source: Consensus Inc.

(1) Historical series is OECD industrial production. Projections are based on the 14-country 'pessimistic' subset (see Box 1).

(2) World CPI is a weighted average of the TWI countries.

(3) World interest rates are an 80:20 average of US and Australian rates.

Table C
Composition of real GDP growth

(Percentage change in annual totals or averages, unless specified otherwise)

March year	Actuals							Projections		
	1992	1993	1994	1995	1996	1997	1998e	1999	2000	2001
Final consumption expenditure										
Private	-2.0	0.3	3.2	6.1	4.5	3.7	2.7	1.9	2.8	1.9
Public authority	0.0	3.0	-1.1	-0.9	2.8	2.1	7.4	2.9	-2.4	2.5
Total	-1.6	0.9	2.3	4.6	4.2	3.4	3.6	2.1	1.8	2.0
Gross fixed capital formation										
Market sector:										
Residential	-15.3	2.7	17.0	12.3	-0.7	2.0	8.0	-4.6	0.7	2.7
Business	-20.7	5.3	20.3	16.1	14.2	5.0	1.7	8.4	12.2	8.0
Non-market government sector	-3.7	-3.1	8.4	37.3	3.5	22.7	17.0	3.6	6.2	6.5
Total	-17.6	3.7	18.2	17.2	9.4	6.3	5.0	4.9	9.1	6.9
Final domestic expenditure	-4.6	1.3	5.0	7.0	5.2	4.0	3.9	2.7	3.5	3.2
Stockbuilding ⁽¹⁾	0.0	0.7	1.1	0.0	-0.7	-0.4	0.0	0.1	-0.1	0.4
Gross national expenditure	-4.6	2.0	6.1	6.9	4.4	3.6	3.9	2.9	3.3	3.5
Exports of goods and services	9.3	2.5	7.9	8.4	1.8	4.6	1.8	1.7	5.4	3.9
Imports of goods and services	-3.8	7.4	8.0	14.2	7.3	6.9	3.1	1.2	2.7	6.5
Expenditure on GDP	-1.1	0.8	6.1	5.3	2.7	2.9	3.5	3.0	4.2	2.7
Production GDP	-1.2	1.2	6.2	5.5	3.2	2.5	2.5	2.8	4.2	2.7
Production GDP (March qtr to March qtr)	0.8	2.1	6.8	4.7	2.9	1.6	3.0	3.6	4.0	2.0

e = estimate.

(1) Percentage point contribution to the growth rate of GDP.

Table D
Household income and consumption
 (Percentage change in annual totals)

March year	Actuals										Projections		
	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	2.9	4.4	5.5	3.7			
Other income	0.2	-2.5	4.7	4.9	9.4	5.8	4.3	6.9	1.1	2.8			
Total income	-0.5	-0.1	4.5	5.6	8.0	5.6	3.6	5.7	3.3	3.2			
Nominal disposable income	2.4	-0.4	5.0	5.0	6.9	5.4	4.6	5.7	4.7	3.5			
Consumption deflator	2.2	1.7	1.7	1.9	2.5	1.7	1.2	2.0	1.9	1.6			
Real disposable income	0.2	-2.0	3.2	3.0	4.3	3.6	3.3	3.7	2.8	1.9			
Real household consumption	-2.2	0.3	3.1	6.1	4.3	3.6	2.6	1.8	2.8	1.9			
Savings rate ⁽¹⁾	6.5	4.3	4.4	1.5	1.5	1.5	2.2	4.0	4.0	4.0			

e = estimate.

(1) Percentage of disposable income.

Table E
Fiscal accounts
(\$ billion)

June year	Actuals						Projections			
	1993	1994	1995	1996	1997	1998e	1999	2000	2001	
Revenue										
Direct taxation	16.6	17.6	19.8	21.3	20.5	21.7	22.3	23.3	24.1	
Indirect taxation	9.2	10.1	10.4	11.0	11.4	12.0	12.3	12.5	12.8	
Non-tax revenue	4.0	2.5	3.4	2.8	2.9	2.4	2.5	2.6	2.7	
Total revenue	29.8	30.2	33.6	35.1	34.8	36.1	37.1	38.4	39.5	
Total expenses	31.4	29.6	30.4	31.7	33.0	35.0	35.8	36.8	37.8	
Revenue less expenses	-1.6	0.5	3.2	3.3	1.8	1.1	1.3	1.6	1.7	
Net surplus attributable to SOEs and Crown entities	0.8	0.2	-0.6	0.0	0.1	0.6	0.8	0.9	1.0	
Operating balance (% of nominal expenditure GDP)	-0.8	0.8	2.7	3.3	1.9	1.7	2.1	2.5	2.8	
	-1.1	0.9	3.1	3.6	2.0	1.6	1.9	2.2	2.3	
Net public debt (% of nominal expenditure GDP)	37.1	35.4	32.6	28.6	25.3	24.6	23.9	22.7	20.1	
	49.1	43.0	37.0	31.1	26.4	24.3	22.0	19.8	17.4	

e = estimate.

Table F
Investment
 (Percentage change in annual totals)

March year	Actuals										Projections		
	1992	1993	1994	1995	1996	1997	1998e	1999	2000	2001			
Plant and machinery (P&M excluding computers)	-22.9	15.6	25.8	19.4	12.7	3.8	9.8	11.5	12.4	8.6			
Transport equipment	-24.5	14.5	25.1	13.7	7.7	-1.5	-0.9	6.6	12.5	8.6			
Commercial buildings	-20.9	25.5	20.8	11.0	6.8	13.2	-23.7	10.2	8.3	6.2			
Other	-38.4	2.1	26.1	26.9	22.8	-0.3	-1.4	2.2	14.5	12.4			
	9.5	-30.7	-7.3	-7.6	22.6	7.4	8.8	-2.1	12.3	-1.2			
Market sector business investment (excluding computers)	-20.7	5.3	20.3	16.1	14.2	5.0	1.7	8.4	12.2	8.0			
Market sector residential investment	-21.3	4.3	19.6	12.9	11.7	2.5	-2.9	7.5	12.1	7.9			
Total market sector investment	-15.3	2.7	17.0	12.3	-0.7	2.0	8.0	-4.6	0.7	2.7			
Government (non-market) investment	-19.2	4.6	19.4	15.0	10.1	4.3	3.2	5.1	9.5	6.9			
Total investment (excluding computers)	-3.7	-3.1	8.4	37.3	3.5	22.7	17.0	3.6	6.2	6.5			
	-17.6	3.7	18.2	17.2	9.4	6.3	5.0	4.9	9.1	6.9			
	-18.1	3.0	17.5	15.0	7.3	4.2	1.5	3.9	8.5	6.5			

e = estimate.

Table G
Trade volumes and the current account

March year	Actuals							Projections		
	1992	1993	1994	1995	1996	1997	1998e	1999	2000	2001
Trade volumes (Percentage change in real annual totals)										
Exports of goods	10.3	0.6	6.9	7.2	0.8	6.8	5.0	1.7	4.5	3.2
Exports of services	5.9	9.5	11.3	12.5	4.7	-1.8	-8.5	1.6	8.9	6.1
Total exports	9.3	2.5	7.9	8.4	1.8	4.6	1.8	1.7	5.4	3.9
Imports of consumption goods	2.7	8.3	7.2	12.9	6.9	3.3	17.3	0.3	-7.1	4.7
Imports of capital goods (ex-transport and computers)	-13.1	-10.0	18.2	18.8	10.0	4.3	-3.2	8.8	15.0	13.8
Imports of intermediate goods	-3.2	12.5	11.9	9.4	2.1	2.1	3.5	-0.9	0.7	2.7
Total imports	-3.8	7.4	8.0	14.2	7.3	6.9	3.1	1.2	2.7	6.5
Current account (\$ billion March year annual total)										
Merchandise trade balance	3.6	3.4	3.1	2.1	0.9	0.9	0.7	1.6	2.9	2.5
Services balance	-1.4	-1.7	-0.9	-0.6	-0.4	-0.6	-1.3	-2.1	-1.7	-1.5
Investment income balance	-4.8	-3.9	-4.5	-6.2	-6.3	-7.1	-7.9	-8.2	-8.3	-8.7
Transfers balance	0.7	0.9	1.5	1.8	2.5	2.3	0.6	0.7	0.9	1.0
Current account	-1.9	-1.3	-0.8	-2.9	-3.3	-4.5	-7.8	-8.0	-6.2	-6.8
(% of nominal production GDP)	-2.6	-1.7	-1.0	-3.3	-3.6	-4.7	-7.8	-7.5	-5.5	-5.8
(% of nominal production GDP ex migrants' transfers)	-3.3	-2.6	-2.3	-5.0	-5.9	-6.2	-7.9	-7.6	-5.9	-6.1

e = estimate.

Note: Imports of consumption goods include HMNZS *Te Kaha* and *Te Mana*.

Table H

Labour market

March year	Actuals							Projections		
	1992	1993	1994	1995	1996	1997	1998e	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	15.7	15.7	15.8
Net migration (000's)	1.7	2.8	6.5	9.2	13.0	9.1	0.6	3.0	4.9	4.5
Increase in participation (000's)	-10.0	-14.5	27.9	9.6	29.3	0.1	-2.7	19.1	8.7	5.6
Total change in labour force (000's)	9.1	2.1	49.8	34.8	58.6	25.9	17.6	37.7	29.3	25.9
March quarter:										
Population of working age (000's)	2574	2600	2634	2673	2718	2757	2788	2816	2847	2877
Labour force participation rate (%)	63.8	63.2	64.3	64.7	65.7	65.7	65.6	66.3	66.6	66.8
Total labour force (000's)	1641	1643	1693	1728	1787	1813	1830	1868	1897	1923
Total employment (000's)	1460	1475	1532	1608	1671	1688	1694	1732	1776	1809
Annual growth (%)	-0.8	1.0	3.9	5.0	3.9	1.1	0.3	2.3	2.5	1.8
Unemployment (000's)	181	168	161	120	116	124	136	135	121	114
Unemployment rate	11.1	10.2	9.5	6.9	6.5	6.9	7.4	7.3	6.4	5.9
Unemployment rate (s.a.)	10.6	9.8	9.1	6.6	6.1	6.5	7.0	6.8	6.0	5.6
Total hours worked										
Annual growth (%)	0.4	2.8	3.4	6.2	4.3	-2.2	1.6	3.1	2.4	1.8
Labour productivity										
Annual growth (%)	1.2	-0.4	2.2	0.1	-0.6	1.1	2.1	1.1	1.5	0.5
QES private sector wages (\$)	14.0	14.1	14.3	14.6	15.1	15.7	16.2	16.6	17.1	17.6
Annual growth (%)	2.8	0.7	1.4	2.1	3.7	4.0	2.9	2.8	2.9	2.8

e = estimate.