4

Risks and Scenarios

Introduction

There are a number of risks associated with economic forecasts. The actual growth path of the economy is likely to differ from the Central Forecast if some of the risks do eventuate.

The first part of this chapter discusses the main areas of risk that we see around the Central Forecast. The second section of the chapter discusses two alternative paths for the economy under different judgements from the Central Forecast. The scenarios are two of a number of possible examples, and do not represent upper or lower bounds for the Central Forecast. The actual magnitude of the difference from the Central Forecast or any given alternative scenario depends on uncertain alternative assumptions.

Economic Risks

The Central Forecast is determined by balancing risks facing the economy, on both the upside and the downside, to provide our best assessment of the way the economy is likely to evolve. Inevitably, some events will unfold differently over time from what we have assumed, which may result in the economy deviating from the Central Forecast.

In forming the Central Forecast we have assumed that future international political or military actions do not have significant negative effects on the international economic climate. The events of 11 September have clearly given rise to considerably more uncertainty than usual around the international economic outlook and the likely impact on the New Zealand economy. This makes an awareness of the risks surrounding the Central Forecast all the more important at this time.

In the Economic Outlook chapter, we highlighted the main channels through which we saw events in the rest of the world impacting on the New Zealand economy. Judgements around these represent three of the key risks to the Central Forecast:

- Developments in the world economy, and the risk that the slowdown in trading partner growth may evolve in a way materially different from current expectations.
- The impact of weaker international growth on the New Zealand economy through changes in export demand, import prices and export prices.
- The impact of heightened uncertainty and risk aversion on domestic confidence, investment and consumption activity.

The Central Forecast embodies *Consensus* forecasts and assumes that trading partner growth remains weak through the first half of calendar 2002 before recovering back to around trend in the latter half of the year. However, recent events have created a wider than usual divergence of views among international analysts around this central world growth profile. A weaker or more prolonged economic slowdown among New Zealand's trading partners compared with current expectations would likely see lower New Zealand GDP growth over the first half of the forecast horizon.

However, the risks around the international outlook are not one-way. Despite projecting a sustained period of weakness between late 2000 and 2002, current *Consensus* forecasts do not embody a strong rebound above trend in 2003/04 for trading partner growth. Historically, periods of significant world economic slowdown have tended to be followed by a sharp pick-up in growth. This suggests that there may be an upside risk that the rebound in world growth could be larger and more rapid than assumed in the Central Forecast. The pattern of growth in the US over the next 18 months will likely be the key driver of international developments.

In the past, changes in demand and prices for New Zealand's exports have been among the primary transmission mechanisms through which the international economy has impacted the New Zealand economy. In the face of subdued world economic growth, our Central Forecast is for a sharp deterioration in export prices and the terms of trade over the next year from current historically high levels. Should export prices fall by more, or import prices remain higher than expected, the terms of trade could be hit harder. However, it is also worth noting that despite trading partner growth deteriorating by even more than assumed in the 2001 Budget Weaker World Growth scenario, New Zealand's terms of trade has remained considerably stronger to date than our 2001 Budget Central Forecast.

There are also significant risks around New Zealand's export volume growth, especially tourism. The 11 September terrorist attacks have severely curtailed international travel around the world. A key judgement in the Central Forecast is that the heightened aversion to travel among tourists in the wake of the attacks diminishes from mid-2002 and tourism flows revert to being driven by fundamentals. However, the nature of the shock is unusual historically and difficult to assess - there is a risk that the effects of heightened travel aversion (particularly in the Northern American and Japanese markets) will persist for longer than expected.

The risks around the indirect impact of the current international situation on the domestic economy primarily concern the extent to which recent weakness in confidence reflects non-economic forces (heightened insecurity and risk aversion). The Central Forecast is for firms and households to hold back on spending plans over the first few quarters of the forecast horizon until the outlook becomes clearer. Given recent strong income gains, if the domestic confidence shock proves lighter or more short-lived, domestic activity could be stronger than expected.

An additional risk surrounds the net migration assumptions of the Central Forecast. Recent large net migration outflows have begun to turn around and we have revised up our net migration inflow assumptions to a net inflow of 10,000 for the year ended June 2002, reducing to 5,000 in subsequent years. However, there is a risk that arrivals into New Zealand will increase and/or departures drop by more than expected into 2002 and that flows materially exceed the 10,000 level. The 11 September terrorist attacks may contribute to these risks by increasing the desirability of living in New Zealand relative to overseas, thus depressing long-term departures and increasing long-term arrivals. Such an outcome would act to support domestic demand by more than we have built into the Central Forecast, as well as boost labour supply.

Economic Scenarios

The scenarios below present two possible growth paths for the economy if some of the key judgements underlying the Central Forecast evolve differently. Both scenarios are based on changes to the demand side of the economy. The first scenario assumes a more prolonged slowdown in trading partner growth than is assumed in the Central Forecast. The second scenario assumes that the New Zealand economy is more resilient to the impact of the slowdown in the world economy than assumed in the Central Forecast.

Table 4.1 – Alternative scenarios: summary

	2000/01 Actual	2001/02 Forecast	2002/03 Forecast	2003/04 Forecast	2004/05 Forecast	2005/06 Forecast
Production GDP (Annual average % change, March years)						
Central Forecast	2.6	3.1	1.9	3.7	2.6	2.8
Delayed Global Recovery	2.6	3.0	1.2	3.8	3.0	3.2
More Resilient Terms of Trade and Confidence	2.6	3.2	2.9	3.2	2.4	2.6
Nominal expenditure GDP (Annual average % change, March years)						
Central Forecast	5.5	5.9	2.6	5.5	4.4	4.2
Delayed Global Recovery	5.5	5.5	0.9	4.9	5.1	5.0
More Resilient Terms of Trade and Confidence	5.5	6.1	4.4	5.7	4.2	4.1
Operating balance ($ billion, June years)						
Central Forecast	1.4	1.0	1.8	2.9	3.6	3.8
Delayed Global Recovery	1.3	0.4	0.7	1.4	2.4	2.8
More Resilient Terms of Trade and Confidence	1.3	0.9	2.2	3.5	4.2	4.3

Sources: Statistics New Zealand, The Treasury

Delayed Global Economic Recovery

This scenario is based around world growth not rebounding as quickly as expected in the Central Forecast, but remaining sub-trend through the second half of calendar 2002, before a more accelerated pick-up and a period of above-trend growth in 2003 and 2004.

Under this scenario, the more prolonged period of weakness in the world economy reduces New Zealand's production GDP growth to 1.2% in 2002/03. However, growth recovers to 3.8% in 2003/04 on the back of a strong rebound in world economic growth.

More persistent weakness in the world economy directly impacts on the New Zealand economy through lower international demand for New Zealand's exports. As a result, growth in the volume of New Zealand's goods and services is more subdued through 2002/03 (+1.2%), before rebounding in 2003/04. In addition, export prices fall lower for longer than in the Central Forecast, but bounce back strongly as world growth picks up in 2003/04. Import prices also decline further, but to a lesser extent than export prices. Overall, the terms of trade troughs around 3% lower than the Central Forecast before recovering rapidly from the beginning of calendar 2004.

Table 4.2 – Delayed Global Economic Recovery

(Annual average % change, March years)	**2000/01 Actual**	**2001/02 Forecast**	**2002/03 Forecast**	**2003/04 Forecast**	**2004/05 Forecast**	**2005/06 Forecast**
Private consumption	1.3	1.8	1.4	2.7	3.3	3.1
Business investment	7.2	6.7	-7.5	6.2	5.7	5.1
Gross national expenditure	-0.2	1.3	1.0	4.2	3.2	2.9
Exports of goods and services	6.8	2.9	1.2	7.0	6.1	5.8
Imports of goods and services	0.4	0.1	0.3	9.0	7.0	5.2
GDP (Production Measure)	**2.6**	**3.0**	**1.2**	**3.8**	**3.0**	**3.2**
Unemployment rate[1]	5.4	5.6	6.1	5.4	5.2	5.0
90-day rate[2]	6.4	4.3	4.7	5.5	6.1	6.2
TWI[2]	50.5	49.0	50.2	52.0	53.1	53.7
CPI[3]	3.1	2.3	1.0	1.3	1.2	1.5
Current account balance (% GDP)	-4.8	-3.3	-4.9	-5.2	-4.1	-3.2
Nominal GDP (expenditure measure)	5.5	5.5	0.9	4.9	5.1	5.0

Source: Statistics New Zealand, Datastream, The Treasury

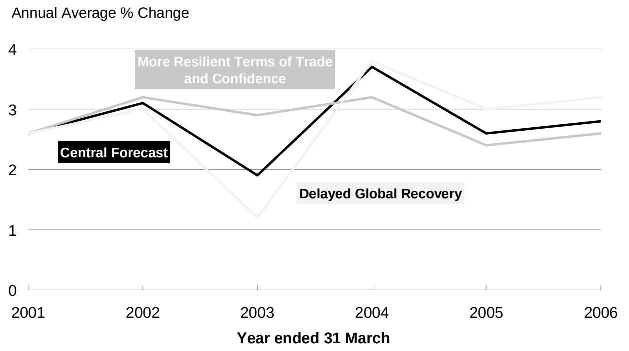
NOTES:
1 Percentage of labour force, March quarter, seasonally adjusted.
2 Average for March quarter.
3 This is the CPI-consistent series targeted by the Reserve Bank. Annual percentage change, March quarter.

Although the effects of current uncertainty are still expected to dissipate within a few quarters, weaker export income and prospects in 2001/02 and 2002/03 have a significant negative impact on the New Zealand domestic business sector. Business investment reduces sharply by 7.5% in 2002/03. Lower demand for labour leads firms to also cut back on employment, resulting in an increase in the unemployment rate to 6.1% in 2002/03. This eases some of the pressure in the labour market and leads to softer wage increases across the forecast period.

Rising unemployment and lower income growth result in a moderation in household spending. Growth in private consumption falls to 1.4% in 2002/03 and remains weaker than the Central Forecast through until the end of the forecast horizon.

Together with lower business investment, the moderation in domestic consumption reduces import demand in 2002/03 and 2003/04. While the size of the fall in import volumes is similar to the fall in export volumes relative to the Central Forecast, the deterioration in the terms of trade means that the current account deficit worsens to -5.2% of GDP in 2003/04, but then improves as New Zealand's terms of trade strengthens further out.

Figure 4.1 – Real GDP growth



Sources: Statistics New Zealand, The Treasury

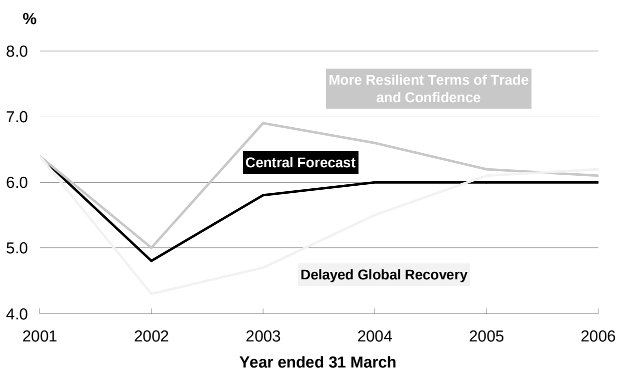
The net impact of weaker exports, imports, investment and consumption expenditure is to reduce production GDP growth to 1.2% in 2002/03, compared to 1.9% in the Central Forecast.

The decrease in GDP growth widens the gap between actual and potential GDP growth in 2002/03 and thus further reduces inflationary pressure during this period. The rate of annual CPI inflation declines to 1.0% for 2002/03. The Reserve Bank is assumed to act quickly in cutting interest rates further, providing more stimulatory monetary conditions than assumed in the Central Forecast. However, the extent of the weakness in the world economy does surprise policy-makers, and hence the Reserve Bank is unable to fully offset the shock.

More stimulatory monetary conditions help support the rebound in GDP growth in 2003/04. In particular, residential investment picks up markedly from 2002/03 owing to the lower financing cost of housing. Production-based GDP grows by 3.8% in 2003/04 and 3.0% in 2004/05.

In the nominal economy, the combined effect of lower output and reduced inflation leads to substantial falls in nominal GDP growth over the short term. While the rebound in real economic activity increases nominal GDP, the permanent price level shock leads to a lower level of nominal GDP through to the end of the forecast horizon. The difference in nominal GDP compared with the Central Forecast is greatest in 2003/04 at -2.5% and narrows to –1.2% by the end of the forecast period.

Figure 4.2 – 90-day rates



Sources: Statistics New Zealand, The Treasury

More Resilient Terms of Trade and Confidence

In this alternative scenario the projected weakness in world growth has a less severe negative impact on the New Zealand economy than assumed in the Central Forecast. In some ways this mirrors the experience thus far in 2001. It is proxied by changes to two key judgements – the terms of trade and the "wait and see" attitudes of households and businesses.

Under this scenario GDP growth remains relatively robust at 2.9% in 2002/03. Although the economy is still adversely affected by the deterioration in the world outlook, the impact is more muted and the rebound in quarterly growth occurs during the first half of 2002. Growth strengthens to 3.2% in 2003/04, before easing back to trend in later years.

While still declining through until mid-2002, the fall in the terms of trade is more moderate and troughs around 2% higher than the Central Forecast. Such an outcome could occur because either New Zealand's export prices prove more resilient than expected, or import prices fall by more than expected in response to weaker world growth.

Table 4.3 – More Resilient Terms of Trade and Confidence

(Annual average % change, March years)	**2000/01 Actual**	**2001/02 Forecast**	**2002/03 Forecast**	**2003/04 Forecast**	**2004/05 Forecast**	**2005/06 Forecast**
Private consumption	1.3	1.9	2.6	2.9	2.8	2.9
Business investment	7.2	7.5	-0.8	6.3	4.6	1.2
Gross national expenditure	-0.2	1.6	3.0	3.7	3.0	2.5
Exports of goods and services	6.8	2.9	2.7	8.0	4.8	4.0
Imports of goods and services	0.4	0.2	2.4	10.6	7.1	4.2
GDP (Production Measure)	**2.6**	**3.2**	**2.9**	**3.2**	**2.4**	**2.6**
Unemployment rate[1]	5.4	5.6	5.3	4.9	5.1	5.2
90-day rate[2]	6.4	5.0	6.9	6.6	6.2	6.1
TWI[2]	50.5	49.5	52.4	54.8	55.3	54.8
CPI[3]	3.1	2.4	1.7	2.4	1.9	1.6
Current account balance (% GDP)	-4.8	-3.0	-3.4	-3.6	-4.1	-4.1
Nominal GDP (expenditure measure)	5.5	6.1	4.4	5.7	4.2	4.1

Sources: Statistics New Zealand, Datastream, The Treasury

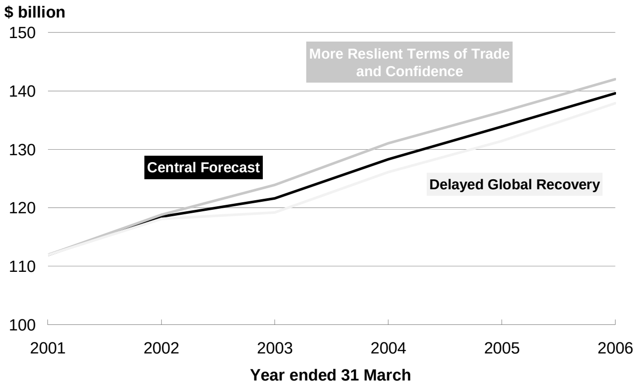
NOTES: 1 Percentage of labour force, March quarter, seasonally adjusted.
2 Average for March quarter.
3 This is the CPI-consistent series targeted by the Reserve Bank. Annual percentage change, March quarter.

The negative impact of uncertainty on household spending decisions is shorter-lived than the Central Forecast, and leads to a rapid resumption of growth in consumption expenditure and residential investment from 2002/03. Private consumption growth lifts from 1.9% in 2001/02 to 2.6% in 2002/03.

Similarly, the rebound in domestic confidence together with stronger export income acts to support business investment. Nevertheless, business investment still declines by 0.8% in 2002/03, before picking up sharply in the following year.

Despite an increase in imports owing to stronger domestic demand, the more robust terms of trade results in a smaller current account deficit than the Central Forecast over the first three years of the forecast horizon. As a proportion of nominal GDP, the current account deficit is at its lowest (3.0%) in 2001/02 before gradually widening through the forecast period to 4.1% in 2005/06.

Figure 4.3 – Nominal GDP



Sources: Statistics New Zealand, The Treasury

Stronger domestic demand results in an increase in employment and reduces the unemployment rate to 4.9% in 2003/04. The tight labour market puts more pressure on wages, which increase 4.2% in 2003/04. With the output gap remaining in positive territory over the medium term, CPI inflation also lifts from 1.7% in 2002/03 to 2.4% in 2003/04.

The Reserve Bank responds to the greater inflationary pressure by lifting the OCR from early in the 2002 calendar year, which sees the 90-day rate pick up to 6.9% in 2002/03, before easing in subsequent years as the rate of inflation tracks back towards the mid-point of the target band.

Higher output and prices, relative to the Central Forecast, result in higher nominal GDP. The difference in nominal GDP peaks at 2.1% in 2003/04 before declining to 1.7% in 2005/06.

Fiscal Scenarios

The main economic determinants of the fiscal position are:

- nominal GDP – components of GDP are the main drivers of tax revenue
- interest rates – higher interest rates increase revenue received from interest, but also increase finance costs paid on government borrowing. Changes in interest rates also affect the valuation of the GSF and ACC liabilities, which flow through the operating balance
- the level of unemployment – an increase in the number of people unemployed will increase the number of unemployment beneficiaries and increase spending
- CPI inflation – most benefits are indexed to CPI movements.

Table 4.4 shows the effects of the two scenarios on the operating balance and net debt.

Table 4.4 – Alternative scenarios: operating balance and net Crown debt

($ billion June years)	2000/01 Actual	2001/02 Forecast	2002/03 Forecast	2003/04 Forecast	2004/05 Forecast	2005/06 Forecast
Operating Balance						
Central Forecast	1.4	1.0	1.8	2.9	3.7	3.9
Delayed Global Recovery	1.4	0.7	1.0	1.7	2.8	3.2
More Resilient Terms of Trade and Confidence	1.4	1.2	2.5	3.9	4.6	4.8
Net Debt						
Central Forecast	20.0	21.7	23.3	24.6	24.7	24.9
Delayed Global Recovery	20.0	22.0	24.4	26.9	27.9	28.7
More Resilient Terms of Trade and Confidence	20.0	21.5	22.3	22.7	21.9	21.1
% GDP June years						
Operating Balance						
Central Forecast	1.2	0.8	1.5	2.2	2.7	2.7
Delayed Global Recovery	1.2	0.6	0.9	1.4	2.1	2.3
More Resilient Terms of Trade and Confidence	1.2	1.0	2.0	2.9	3.3	3.3
Net debt						
Central Forecast	17.5	18.2	18.9	19.0	18.2	17.6
Delayed Global Recovery	17.5	18.6	20.2	21.3	20.9	20.6
More Resilient Terms of Trade and Confidence	17.5	17.9	17.8	17.2	15.9	14.7

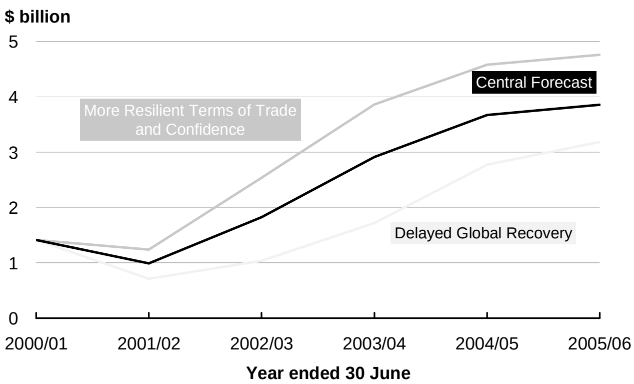
Sources: Statistics New Zealand, The Treasury

In the Delayed Global Recovery scenario, the operating balance is lower in every year compared with the Central Forecast. However, the impact lessens over time, as higher real economic growth increases growth in nominal GDP relative to the Central Forecast, and as expenses decrease as unemployment falls.

In the More Resilient Terms of Trade and Confidence scenario, the operating balance is higher than the Central Forecast throughout the forecast horizon. The drivers of the higher operating balance are higher output, higher prices and lower unemployment relative to the Central Forecast Track.

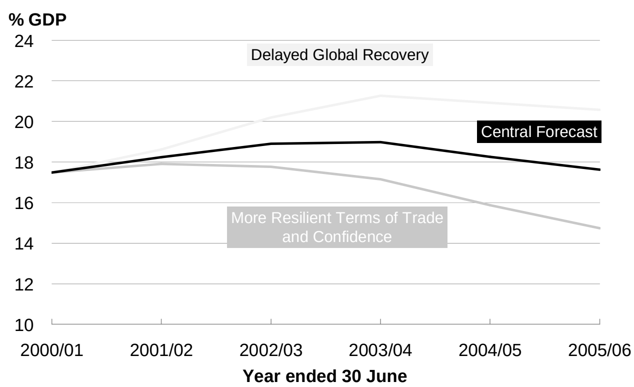
The changes in the operating balance impact on net debt. In the Delayed Global Recovery scenario, net debt is around 3% of GDP higher than in the Central Forecast by the end of the forecast period. Net debt is around 3% of GDP lower by the end of the forecast period in the More Resilient Terms of Trade and Confidence scenario than in the Central Forecast.

Figure 4.4 – Operating balance



Sources: Statistics New Zealand, The Treasury

Figure 4.5 – Net debt



Sources: Statistics New Zealand, The Treasury

Fiscal Sensitivities

The scenarios above indicate the sensitivity of fiscal aggregates to changes in economic conditions. Table 4.5 provides some "rules of thumb" on the sensitivities of the fiscal position to changes in specific variables.

Table 4.5 – Sensitivity analysis

($ million)	**2002 Forecast**	**2003 Forecast**	**2004 Forecast**	**2005 Forecast**	**2006 Forecast**
1% higher nominal GDP growth per annum					
Tax Revenue	(380)	(790)	(1,240)	(1,730)	(2,230)
Expenses (mainly debt servicing)	(10)	(50)	(120)	(200)	(290)
Impact on the operating balance	**(390)**	**(840)**	**(1,360)**	**(1,930)**	**(2,520)**
Revenue impact of a 1% increase in the growth rate of:					
Wages and salaries	160	330	530	740	960
Taxable business profits	70	170	280	400	520
One percentage point lower interest rates					
Interest income	(10)	(40)	(50)	(60)	(60)
Expenses	40	130	210	280	310
Impact on the operating balance	**30**	**90**	**160**	**220**	**250**
One percentage point lower real interest rates					
ACC liability (SOE and Crown entity surpluses)	(500)	-	-	-	-
GSF liability (expenses)	(1,700)	-	-	-	-
Impact on the operating balance	**(2,200)**	-	-	-	-

Source: The Treasury