4

Risks and Scenarios

Introduction

There are always a number of risks and uncertainties that surround any economic forecast. Should any of these actually occur then it is likely that the economy will evolve differently from our central forecast, with associated flow-on effects for the fiscal position.

The first part of this chapter discusses the major areas of risk and uncertainty that we see around the central forecast. As has been the case for the last year and a half, one of the major sources of risk is the international economic outlook. At present, there appear to be more easily identifiable downside risks to the global outlook, although we do not rule out the possibility that sentiment could turn around quite quickly and world growth could be stronger than expected. The second section of this chapter therefore provides an alternative path for the economy in the event the global economy weakens again and recovery is pushed out to 2004. Under these circumstances we would likely see further pressure on the terms of trade and demand for New Zealand goods, and hence weaker growth and inflation. This would have implications for the fiscal position.

While both the New Zealand economy and the Government's tax take have yet to show any significant effects of the global slowdown, should the major identifiable risks around the outlook come to pass, this could see some unwinding of the recent better-than-expected performance.

Clearly, the scenario discussed in part two of this chapter is one of a number of possible ways in which the actual growth profile of the economy could deviate from our central forecast. Other scenarios are certainly possible, including those that have a more positive outlook for the New Zealand economy. Indeed, some of the risks discussed in the following section, especially around the domestic economy, could work together to see the New Zealand economy perform better than projected in our central forecast, particularly over the short term.

Economic Risks

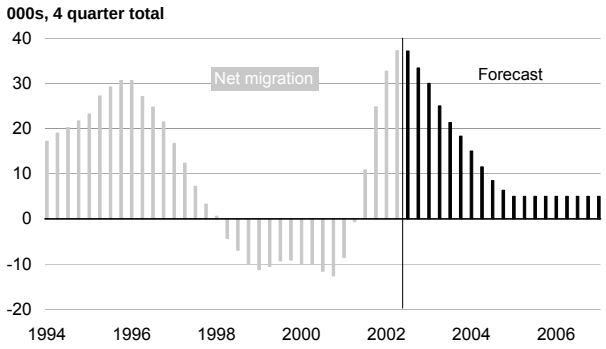
In the Economic Outlook chapter, we highlighted the two main competing forces at work now and over the forecast horizon:

- Weak global growth that feeds through into the domestic economy via declining terms of trade and lacklustre demand for exports, versus
- A household sector buoyed by a number of years of strong income growth, high net inflows of migrants and students, and rising house prices.

In the central forecast domestic demand is projected to ease as the current fall in the terms of trade feeds through into domestic spending in 2003. As the global economy and exports pick up, domestic demand recovers. Should the timing and magnitude of the effects of these two forces differ from the judgements underpinning our central forecast, the growth path of the economy could evolve differently.

As discussed in the Economic Outlook chapter, while the domestic economy turned out much as expected in the first half of 2002, it looks to have held up in the second half of 2002. Ongoing employment and income growth, continued high levels of net migration, rising house prices and a lag in the fall of the terms of trade flowing through into rural spending all support ongoing, albeit slowing, domestic demand into 2003. However, a combination of either a longer delay, or less flow-through of this year's fall in the terms of trade, and stronger household demand or multipliers in urban areas, particularly Auckland, could see the economy develop differently from that outlined in the central forecast. A stronger cycle of rising house prices, stronger net migration and employment growth would pose upside risk to our GDP forecast over the short term, with possible implications for monetary policy and the path of the economy further out.

Figure 4.1 – Migration assumption



Sources: Statistics New Zealand, The Treasury

One of the factors underpinning domestic demand holding up for longer is net migration. Net migration flows in the year to June 2002 were higher than expected, and we have substantially revised up our net migration projections for the year to June 2003, before they are expected to tail off in the following years. Built into this profile is a marked easing in quarterly inflows from the second half of 2003, reflecting a combination of an easing in inflows of migrants and a turnaround in the numbers of people leaving, as global growth becomes more robust. If net migration flows hold up for longer, we would likely see support for domestic demand, and an increase in labour supply over the short to medium term. However, since net migration is traditionally volatile, there are also downside risks.

There is a broader set of uncertainties in the *December Update* around the issue of how close to capacity the economy is currently operating. It is not possible to be definitive about the extent of pressure on resources or the amount of spare productive capacity still available, with standard measures of potential or trend growth subject to considerable

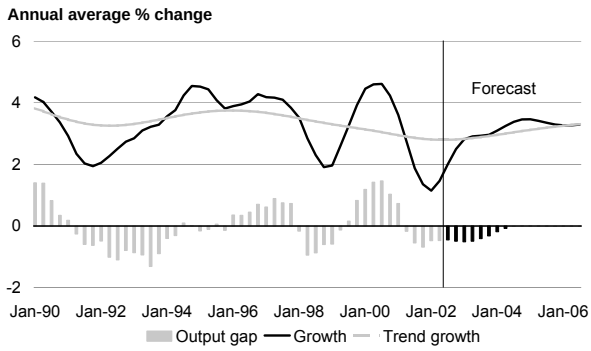
confidence bounds. Many commentators have observed that the economy is currently operating at or above capacity, pointing to a range of partial indicators returning to levels last seen in 1994. The RBNZ in its November *Monetary Policy Statement* provide a summary of a number of these.

We agree that the amount of spare labour and other productive capacity has reduced through 2002, perhaps significantly. This is consistent with stronger price increases in some parts of the economy. However, while GDP growth has been strong, especially over the first half of the year, we also appear to have observed a rise in the potential growth rate of the economy. This has been facilitated by strong labour force growth that is running at about 3% per annum at present, underpinned by high levels of labour force participation and strong net migration. We expect labour force growth will continue to remain solid, albeit slightly lower than recent high levels, before easing later in the forecast period. There are risks on both sides around this judgement. If we have overestimated the short-term rise in potential then we may see greater pressure on inflation and asset prices, or higher imports and a deterioration in the current account. On the other hand, if the rise is more structural in nature we may see less pressure over the forecast period.

Several risks surround our reading of the nominal economy. This could have implications for the fiscal position given the importance of nominal GDP as a driver of tax revenue. In the near term, uncertainty surrounds the magnitude of recent price changes in the economy. Statistics New Zealand has noted the difficulty it has had in calculating the implicit price deflators for GDP and Gross National Expenditure in the June 2002 quarter, and that these may not accurately reflect price changes owing to the extreme compositional changes that occurred during the quarter. In some ways more nominal GDP would help reconcile developments in the economy with the tax take. Any significant changes to recent price movements will affect the starting point for our nominal GDP forecasts, and hence for the calculation of various fiscal ratios. Further out in the forecast period, CPI inflation is forecast to track around 2%, higher than previously forecast, but in line with historical outturns. In arriving at this position, the recent changes to the RBNZ's Policy Targets Agreement are not forecast to lead to any marked change in price-setting behaviour. This is an issue that we will monitor closely. Slightly higher inflation on average over the forecast period gives a significant boost to the fiscal position, as was discussed in Chapter 3.

On the external side, the Central Forecast is underpinned by figures from the November *Consensus Forecasts*, and assumes only a mild recovery in global growth. However, in the Economic Outlook chapter we discussed how sentiment around the global outlook has turned more negative in recent months, and should economic indicators continue to disappoint then we could see further downward revisions to the international outlook. Moreover, as we discussed in the *Pre-Election Update,* a number of the major economies face a number of structural challenges. Most analyst forecasts going into the *Consensus Forecasts* tend to

Figure 4.2 – International demand



Sources: Statistics New Zealand, The Treasury

build in the view that these structural challenges are worked through in a relatively benign manner. A more hesitant global recovery in 2003 would likely see downside risk to New Zealand GDP growth next year. Such a scenario is modelled in more detail later in the chapter.

When thinking about the global backdrop to these forecasts, our starting assumption has been that future international political or military tensions will not have any material impact on our forecasts over and above those already built into sentiment and market expectations. This is not to say that such risks have disappeared. Indeed, this *December Update* was put together against the backdrop of ongoing international tension around Iraq, and the war on terrorism moving closer to home with the tragic events in Bali. However, at this stage the magnitude and direction of such risks are less than clear. It is possible, for example, that a prompt resolution of the Iraqi situation could assist a global pick-up by removing one negative overhang on sentiment.

Despite the generally downbeat sentiment about the global outlook, not all of the risks around the international outlook are to the downside. Over recent weeks we have even seen data outturns in the US surprise on the upside. More fundamentally, we should not overlook the substantial monetary and fiscal stimulus already in the pipeline, not only in the US, but also elsewhere, which should provide some support to growth. The early November reduction in the US federal funds rate to 1¼% will only add to this stimulus, as will any potential easing of US fiscal policy following the results of the mid-term Congressional election. The pattern of growth in the US over the short term will continue to be a key driver of the global outlook. Furthermore, while the current *Consensus*-based forecast of trading partner growth builds in three consecutive years of weak growth, the *Consensus Forecasts* do not project a rebound above trend in 2003 for trading partner growth. Yet historically, periods of sustained global weakness have often been followed by a sharp pick-up in growth. We do not therefore discount the possibility of a sharper rebound in global growth.

Export prices and volumes are among the primary transmission mechanisms through which changes in external developments usually affect the New Zealand economy. On the price side, despite the global economy being weaker than expected in the *Pre-Election Update,* until recently export prices have actually held up better than previously forecast. Nevertheless, in the *December Update* we forecast the recent fall in world prices for New Zealand exports to continue over the rest of 2002. Import prices are also expected to fall, although by a lesser amount, causing a deterioration in the terms of trade. The fall in the terms of trade is therefore dependent on the relative movement of export and import prices. A stronger-than-expected rebound in global growth would likely exert some upward pressure on export prices. Similarly, as the experience of the dairy and meat sectors over the last couple of years has demonstrated, market-specific factors are also an important consideration. Depending on oil prices, we would also expect to see higher import prices if the global recovery were stronger than our central forecast. However, the extent to which export or import prices exert the greater influence on the terms of trade would depend on their relative movements.

If eventualities such as these transpire, the growth path for the economy and the composition of that growth could look very different.

Economic Scenarios

The following scenario presents one possible growth path for the economy if some of the key judgements underlying the central forecast evolve differently. The scenario is based on changes to the demand side of the economy, and assumes a slower recovery in global growth than is assumed in the central forecast.

Table 4.1 – Alternative scenario: summary

	2001/02 Actual	2002/03 Forecast	2003/04 Forecast	2004/05 Forecast	2005/06 Forecast	2006/07 Forecast
Production GDP (annual average % change, March years)						
Central forecast	3.3	4.0	2.5	2.9	3.0	2.8
Delayed global recovery	3.3	3.9	1.5	3.2	3.5	3.1
Nominal expenditure GDP (annual average % change, March years)						
Central forecast	6.4	3.6	5.0	4.9	4.9	4.6
Delayed global recovery	6.4	3.2	3.0	4.5	5.5	4.8
Operating balance ($ billion, June years)						
Central forecast	2.4	2.5	3.8	4.5	5.2	5.9
Delayed global recovery	2.3	2.0	2.4	3.2	4.2	4.9

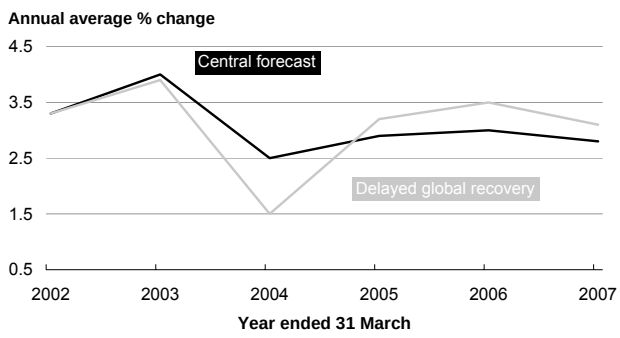
Sources: Statistics New Zealand, The Treasury

Delayed global recovery

This scenario is based on a slower recovery in global growth. While a range of scenarios is possible around lacklustre world growth, we have assumed trading partner growth is 2.0% in the 2003 calendar year, 3.0% in 2004, and 4.0% in calendar 2005. Such an outcome could arise if a sustained rebound in US growth were delayed until 2004 and growth remain weak in Europe and Japan.

Under this scenario, the effects of weak global growth reinforce the slowdown in domestic spending already built into the central forecast. This shaves a little off growth in the year to March 2003, with the major impact occurring in the year to March 2004 as GDP growth slows to 1.5%. While more stimulatory monetary policy provides some offset, underpinning GDP growth of 3.2% in the year to March 2005, it is not until global growth recovers further out that the New Zealand economy fully recovers from the external shock to demand.

Figure 4.3 – Real GDP



Sources: Statistics New Zealand, The Treasury

A delayed recovery in trading partner growth in 2003 and 2004 would flow through to the New Zealand economy via lower export volumes and prices. Growth in export volumes is much more subdued in the year to March 2004 before bouncing back the following year. Furthermore, relative to the central forecast, export prices fall into 2003 and then remain lower for longer over 2004. As global growth rebounds to above trend, export prices gradually recover to levels similar to the central forecast in the latter half of 2005. The overall effect is that income earned by New Zealand exporters is much more cyclical than in the central forecast. Import prices are also assumed to decline, although to a lesser extent. As a result, the terms of trade fall through 2003 before picking up from late 2004 as the global economy begins to recover.

Table 4.2 – Delayed global recovery

(Annual average % change, March years)	**2001/02 Actual**	**2002/03 Forecast**	**2003/04 Forecast**	**2004/05 Forecast**	**2005/06 Forecast**	**2006/07 Forecast**
Private consumption	2.4	3.7	2.5	1.8	2.1	2.7
Residential investment	3.2	18.2	5.8	3.5	5.4	0.2
Gross national expenditure	2.6	3.5	3.6	2.5	2.6	3.0
Exports of goods and services	2.0	8.8	2.1	5.0	5.6	4.7
Imports of goods and services	2.1	8.8	7.7	2.9	2.7	4.2
GDP (production measure)	**3.3**	**3.9**	**1.5**	**3.2**	**3.5**	**3.1**
Unemployment rate[1]	5.3	5.8	6.5	5.9	5.2	5.1
90-day rate[2]	5.0	6.0	4.6	5.1	5.7	5.8
TWI[2]	51.6	56.5	54.2	53.4	53.8	55.3
CPI[3]	2.6	2.3	1.6	1.3	1.3	1.8
Current account balance (% GDP)	-2.1	-3.9	-6.3	-6.4	-4.5	-3.9
Nominal GDP (expenditure measure)	6.4	3.2	3.0	4.5	5.5	4.8

Sources: Statistics New Zealand, Datastream, The Treasury

NOTES: 1 Percentage of labour force, March quarter, seasonally adjusted.
2 Average for March quarter.
3 Annual percentage change, March quarter.

In the "Delayed global recovery" scenario, the global economy is still expected to bounce back, although weaker prospects and export income in 2003 and 2004 have a negative impact on the domestic business sector. Firms delay or defer investment plans and business investment slows sharply over the coming year, recording annual average growth of 4.6% in the year to March 2004, less than projected in our central forecast. Firms also cut back employment plans. This sees the unemployment rate rise relative to the central forecast, peaking at just over 6.5% in 2003/04. This results in a considerable easing of recent labour market pressures, and more subdued wage growth over the short term.

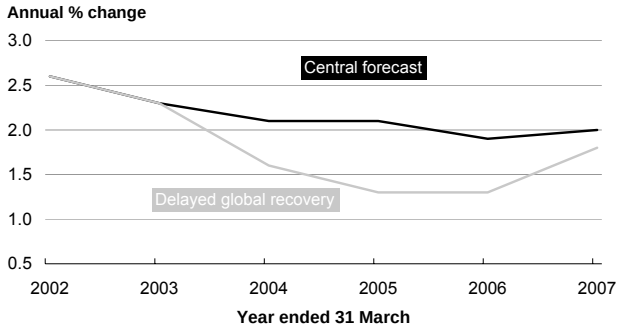
A softer labour market and weaker income growth spill over to some moderation in household spending behaviour. In the shorter term, households become less willing to leverage up in a more uncertain environment, leading to a slowing in the current residential investment cycle. As the unemployment rate worsens in the latter half of 2003,

private consumption weakens going into 2004, remaining lower than our central forecast in the years to March 2005 and March 2006.

Together with lower business investment, the moderation in domestic consumption reduces import demand, particularly in 2004/05 and 2005/06. However, the size and timing of the negative shocks to both exports and imports have significant implications for the current account. This sees the current account deficit widen significantly, peaking at 6.7% of GDP in late 2004, before easing slowly to just above 4.0% of GDP at the end of the forecast horizon, as export prices improve on the back of the global recovery.

The net effect of weaker exports and investment in the coming year, and more subdued consumption expenditure and imports results in production GDP growth of 1.5% in March 2004, compared with 2.5% in our central forecast.

Figure 4.4 – CPI inflation



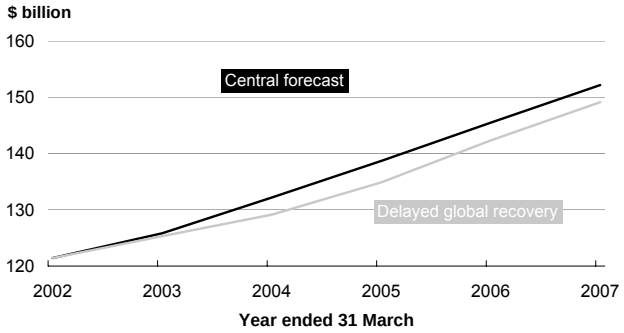
Sources: Statistics New Zealand, The Treasury

Significantly lower GDP growth over 2003/04 leads to lower inflationary pressures. Annual CPI inflation declines to 1.3% in 2005/06. This reduced pressure on inflation gives the RBNZ room to cut the OCR, and it is assumed to do so by about 150 basis points in several successive cuts beginning in 2003. However, the extent of the weakness in global growth does surprise policy makers, and given the lag with which monetary policy operates, the stimulus provided by looser monetary policy does not fully offset the shock.

More stimulatory monetary conditions help support a rebound in GDP growth in 2004/05. Uncertainty around the outlook dissipates as the global recovery takes hold in 2005, while the lagged effect of lower interest rates helps drive the rebound in residential investment. As exports and domestic demand recover, firms begin investing and hiring again. A resumption in labour market growth leads to income gains and stronger private consumption growth. Against a backdrop of the world economy returning to trend growth, as the domestic economy begins to gather steam the RBNZ gradually raises the OCR to offset any emerging inflationary pressures.

The effect of lower output growth and lower inflation is lower nominal GDP throughout the forecast horizon, although growth is higher in the last two years of the forecast period. While real economic activity rebounds to its central forecast level by the end of the forecast period, the price level shock is permanent, leading to a lower level of nominal GDP throughout the forecast period. The greatest difference in nominal GDP compared with the central forecast occurs in the year to March 2005, when nominal GDP is about $3.8 billion smaller. However, even at the end of the forecast horizon nominal GDP is still $3 billion lower than the central forecast.

Figure 4.5 – Nominal GDP



Sources: Statistics New Zealand, The Treasury

Fiscal Scenarios

There are a variety of channels through which the economy influences the fiscal position. In the case of the delayed recovery scenario:

- lower real and nominal GDP – the major drivers of tax revenue – will flow through to a lower tax take
- lower interest rates will lower finance costs paid on government borrowing
- a higher level of unemployment will mean more unemployment beneficiaries and higher spending
- most benefits are indexed to CPI movements, so lower CPI inflation will see lower benefit costs.

Table 4.3 shows the impact on the operating balance and gross debt.

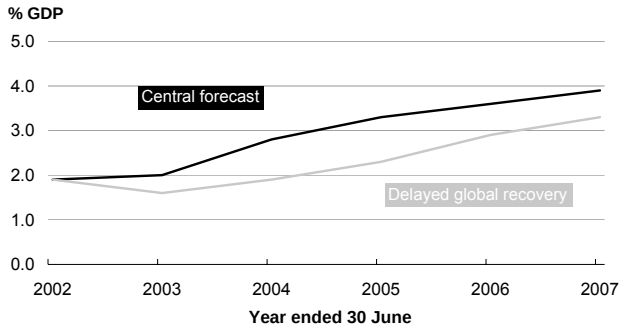
Table 4.3 – Alternative scenarios: operating balance and gross Crown debt

June years	2001/02 Actual	2002/03 Forecast	2003/04 Forecast	2004/05 Forecast	2005/06 Forecast	2006/07 Forecast
Operating balance ($ billion)						
Central forecast	2.4	2.5	3.8	4.5	5.2	5.9
Delayed global recovery	2.3	2.0	2.4	3.2	4.2	4.9
Gross debt ($ billion)						
Central forecast	36.2	35.5	35.9	35.9	36.1	36.2
Delayed global recovery	36.2	36.1	37.9	39.1	40.4	41.5
Operating balance (% GDP)						
Central forecast	2.0%	2.0%	2.9%	3.2%	3.5%	3.9%
Delayed global recovery	1.9%	1.6%	1.9%	2.3%	2.9%	3.3%
Gross debt (% GDP)						
Central forecast	29.6%	27.8%	26.9%	25.5%	24.5%	23.5%
Delayed global recovery	29.6%	28.5%	29.1%	28.6%	28.0%	27.6%

Sources: Statistics New Zealand, The Treasury

Like the fiscal outlook for the central forecast, economic developments over the next year or two under the delayed global recovery scenario are important drivers of the fiscal position for the period as a whole. Lower real GDP growth, a further fall in the terms of trade and lower domestic inflation over the year ahead see lower nominal GDP growth than in the central forecast over the year ahead. This will flow through to lower tax revenue and, together with

Figure 4.6 – Operating balance



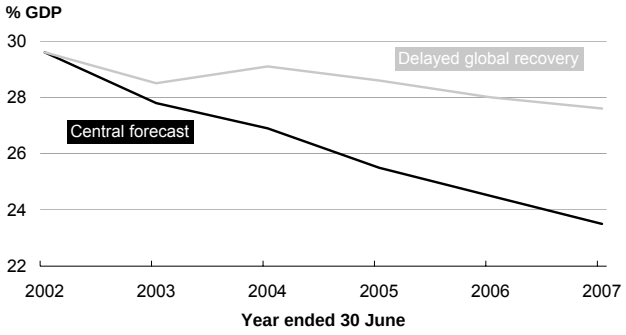
Sources: Statistics New Zealand, The Treasury

higher unemployment, is the main driver of a lower operating balance in 2003/04. Lower CPI inflation feeding through to lower indexed expenditures provides only a partial offset. Reduced cash flows will see higher gross debt and hence higher finance costs in aggregate, despite marginally lower interest rates.

This creates a dynamic for the rest of the forecast period. Lower cash flows and higher gross debt see the operating balance remain lower throughout the forecast horizon, despite a bounce-back in real and nominal GDP growth. At the end of the forecast period, the operating balance reaches $4.9 billion compared with $6.0 billion in the central forecast, despite the level of real GDP returning to around its central forecast level.

In turn, the changes in the operating balance impact on the repayment of gross debt. In the delayed global recovery scenario, gross debt is 4.1% of GDP higher than in the central forecast by the

Figure 4.7 – Gross debt



Sources: Statistics New Zealand, The Treasury

Fiscal Sensitivities

The scenario above indicates the sensitivity of fiscal aggregates to changes in economic conditions. Table 4.4 provides some "rules of thumb" on the sensitivities of the fiscal position to changes in specific variables.

Table 4.4 – Sensitivity Analysis

($ million)	**2002/03 Forecast**	**2003/04 Forecast**	**2004/05 Forecast**	**2005/06 Forecast**	**2006/07 Forecast**
1% lower nominal GDP growth per annum					
Tax Revenue	(380)	(790)	(1,230)	(1,705)	(2,205)
Expenses (mainly debt servicing)	10	50	120	220	360
Impact on the operating balance	**(390)**	**(840)**	**(1,350)**	**(1,925)**	**(2,565)**
Revenue impact of a 1% decrease in the growth rates of:					
Wages and salaries	(155)	(330)	(515)	(720)	(940)
Taxable business profits	(80)	(185)	(300)	(420)	(550)
One percentage point lower interest rates					
Interest income	(8)	(20)	(25)	(31)	(36)
Expenses	60	144	183	208	230
Impact on the operating balance	**52**	**124**	**158**	**177**	**194**
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)**				