4

Risks and Scenarios

Introduction

As with any economic forecasts, there are a number of risks surrounding the Central Forecast. If some of the risks eventuate, the actual growth path of the economy is likely to differ from the Central Forecast.

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. More extreme paths are certainly possible. 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 both the upside and downside risks facing the economy, to provide our best assessment of the way the economy is likely to evolve. Some of the key judgements we have applied may evolve differently, resulting in the economy deviating from the Central Forecast.

In forming the Central Forecast we have assumed that the "non-economic" factors driving sentiment following the events of 11 September have largely dissipated, and any possible future international political or military tensions will not have any material effect on the global economic recovery. This is not to say that the risks surrounding the external environment have largely disappeared. The cyclical risks around the pace of the recovery in the global economy were discussed in the Economic Outlook chapter.

Over the medium term the global economy could also develop differently from that underpinning our Central Forecast. The key downside risks have been canvassed in recent editions of the *IMF World Economic Outlook*, and include: the US current account deficit and its counterpart surpluses elsewhere; the apparent overvaluation of the US dollar and undervaluation of the Euro; the extent of optimism built into equity prices; and the structural issues facing the Japanese economy. On the other hand, current medium-term *Consensus Forecasts* tend to build in lower trend growth for key economies like the US than they have experienced over the recent past. Recent strong productivity figures in the US tend to lend support to the view that the average growth recorded in the second half of the 1990s may be more realistic, and represents more of a trend shift than may have been thought midway through last year. How these issues develop, will form an important backdrop for the New Zealand economic outlook over the medium term, and certainly for the drivers of growth.

With the risks around the external environment now more balanced than previously, many of the key risks to the Central Forecast look to be around the domestic sector, particularly in household spending.

As discussed in the Economic Outlook chapter, the domestic economy has over the recent past been more buoyant than expected. This has been driven by a quick recovery in consumer confidence, strong employment and farm income growth, the large net migration inflow, and stimulatory monetary conditions. Assessments of the relative contribution to household spending emanating from each of these drivers are amongst the key judgements for this set of forecasts.

The household spending path in the Central Forecast is predicated on solid income growth over the medium term, monetary conditions that are around neutral on average, sustained but diminishing net migration inflows, and a willingness to take on more debt, albeit at a more gradual pace than during the early 1990s. If developments in these areas evolve differently, then household spending patterns are also likely to differ, perhaps markedly:

- A greater willingness to take on debt, perhaps as a result of faster than expected growth in house and other asset prices, would likely see household spending growing more strongly for longer.
- Households may respond more to the forecast slowdown in disposable income, cutting back their spending and investment in housing in order to maintain their current financial position, perhaps prompted by rising interest rates and higher petrol prices.

Developments such as these could see the economy develop quite differently from that outlined in the Central Forecast.

The size of the turnaround in net migration has been one of the key differences between the *December Update* and this *Budget Update*. This highlights the risk looking forward. Migration flows have historically been volatile, and there is a risk that the upswing in net migration inflows may unwind faster than expected. The implications of an unexpected reversal in net migration would be to reduce domestic demand and subtract from labour supply. However, there are also potential upside risks to the migration judgement, including the current net migration inflows persisting for longer periods, or that the demand impacts from migration have been underestimated in the Central Forecast. These upsides could see the current strength in domestic demand persisting for longer or even accelerate in the short term.

The Central Forecast assumes normal growing seasons throughout the forecast period, which sees agricultural production driven by livestock numbers and productivity improvements. Variability in climatic conditions, and the effect of these fluctuations on agricultural production, has been a significant influence on economic growth in recent years. Less favourable climatic conditions, such as those experienced in the late 1990s, would pose downside risks to the Central Forecast. There is growing evidence of an El Nino weather pattern emerging, although it is still too early to predict whether drought conditions will appear. Similar risks of droughts were being aired this time last year. Should drought materialise for this coming growing season, lower agricultural production could occur at the same time as export prices are declining, the reverse of the experience of the past few years. This would further reduce farm incomes, affect rural confidence, and potentially flow through to other parts of the economy.

Economic Scenarios

The following scenarios 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, and assume that the world economy evolves as expected in the Central Forecast. The first scenario assumes stronger domestic demand than is assumed in the Central Forecast. The second scenario assumes less resilient domestic demand over the remainder of the year with lower consumption growth and residential investment.

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	2.7	3.1	3.1	3.0	2.9	2.8
Stronger Domestic Demand	2.7	3.1	3.5	3.3	2.6	2.7
Less Resilient Domestic Demand	2.7	3.1	2.7	2.3	3.3	2.8
Nominal expenditure GDP (annual average % change, March years)						
Central Forecast	5.8	6.6	3.7	5.0	4.6	4.3
Stronger Domestic Demand	5.8	6.6	4.1	5.7	4.8	4.4
Less Resilient Domestic Demand	5.8	6.5	3.2	3.9	4.2	3.8
Operating balance ($ billion, June years)						
Central Forecast	1.4	2.6	2.3	3.1	3.9	4.2
Stronger Domestic Demand	1.4	2.7	2.6	3.7	4.7	5.1
Less Resilient Domestic Demand	1.4	2.6	2.1	2.4	3.0	3.0

Sources: Statistics New Zealand, The Treasury

Stronger Domestic Demand

This scenario presents a possible growth path for the economy where private consumption and residential investment hold up through 2002/03 by more than anticipated in the Central Forecast, and where the turnaround in net migration adds less to productive capacity. In some ways, this mirrors the experience over recent quarters. Under this scenario, GDP growth accelerates to 3.5% in 2002/03 compared with 3.1% in the Central Forecast. However, with the economy growing materially above capacity, inflationary pressures quickly build up and monetary conditions are tightened to keep inflation within the target band. This leads to slower growth in the following years.

Table 4.2 – Stronger Domestic Demand

(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	1.6	2.8	3.7	3.0	1.7	2.2
Residential investment	-15.9	6.8	20.4	-4.3	1.4	3.5
Gross national expenditure	0.2	3.4	4.0	3.7	2.1	2.2
Exports of goods and services	6.8	1.8	6.8	6.4	5.4	4.1
Imports of goods and services	0.4	3.5	7.1	7.7	4.2	3.0
GDP (production measure)	**2.7**	**3.1**	**3.5**	**3.3**	**2.6**	**2.7**
Unemployment rate[1]	5.4	5.4	5.1	4.7	4.8	4.9
90-day rate[2]	6.4	5.0	6.7	6.3	6.2	6.0
TWI[2]	50.5	51.6	53.6	53.0	53.1	53.6
CPI[3]	3.1	2.6	2.5	2.1	2.0	1.6
Current account balance (% GDP)	-4.8	-3.2	-4.7	-5.5	-4.6	-3.7
Nominal GDP (expenditure measure)	5.8	6.6	4.1	5.7	4.8	4.4

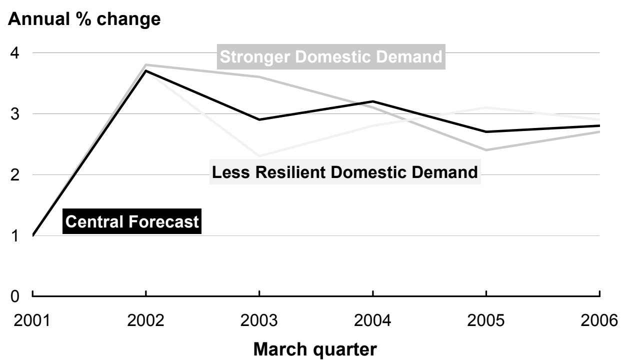
Sources: Statistics New Zealand, Datastream, The Treasury

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

Strong income growth and declining interest rates together with relatively low unemployment rates provided a favourable environment for household spending in the 2001/02 year. Under the Stronger Domestic Demand scenario, the current momentum in domestic demand accelerates into 2002/03. There are various reasons for domestic demand to be stronger than the Central Forecast. A greater willingness by households to take on more debt to fund consumption and residential investment would have the effect of stronger near-term demand. In addition, the demand impacts from the current net migration inflows could be greater than assumed in the Central Forecast, with most of the additional demand for consumption and housing being met by stronger migrant transfer inflows.

The stronger near-term domestic demand results in consumption growth increasing to 3.7% in 2002/03 and residential investment growth rising to 20.4%. With the economy already operating at close to capacity in 2001/02, and migration not adding as much to capacity as in the Central Forecast, the bigger acceleration in domestic demand cannot be met out of spare capacity. As a result inflationary pressures build. Real GDP growth reaches 3.5% in 2002/03, compared with 3.1% in the Central Forecast, and

Figure 4.1 – Real GDP growth



Sources: Statistics New Zealand, The Treasury

CPI inflation reaches 2.5% in 2002/03. The unemployment rate falls to 5.1% in 2002/03, creating upward pressure on wages. The current account deficit worsens relative to the Central Forecast to -4.7% of GDP, as the strong consumption growth feeds through into higher imports.

The Reserve Bank is assumed to respond by tightening monetary conditions, and moving beyond neutral in an attempt to bring inflation down. Ninety-day bill rates reach 6.7% in 2002/03, causing a slowdown in consumption spending as household debt servicing costs increase and residential investment slumps. Consumption growth eases to 3.0% in 2003/04 and slows to 1.7% in 2004/05. Residential investment contracts by 4.3% in 2003/04.

Nominal GDP is consistently higher relative to the Central Forecast owing to the combined effect of higher output and inflation. The difference in nominal GDP increases throughout the forecast period from $0.6 billion greater than the Central Forecast in 2002/03 to $2.0 billion greater in 2005/06.

Less Resilient Domestic Demand

In this alternative scenario, domestic demand growth loses momentum more quickly with lower consumption, residential investment and employment growth in the near term compared with the Central Forecast. Under this scenario, GDP growth slows to 2.7% in 2002/03 and 2.3% in 2003/04. Growth recovers to 3.3% in 2004/05 as monetary conditions remain stimulatory for longer.

Table 4.3 – Less Resilient Domestic Demand

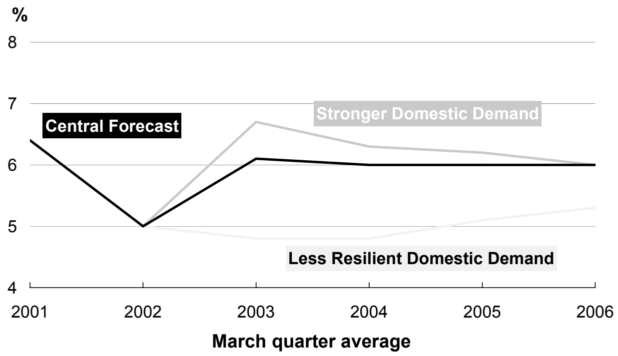
(Annual average % change, March years)	**2000/01 Actual**	**2001/02 Forecast**	**2002/03 Forecast**	**2003/04 Forecast**	**2004/05 Forecast**	**2005/06 Forecast**
Private consumption	1.6	2.8	2.2	1.4	3.2	3.2
Residential investment	-15.9	6.6	15.6	-8.3	5.7	5.2
Gross national expenditure	0.2	3.3	2.9	2.2	3.5	3.0
Exports of goods and services	6.8	1.8	6.6	6.1	3.9	3.6
Imports of goods and services	0.4	3.5	5.8	5.8	4.9	4.5
GDP (production measure)	**2.7**	**3.1**	**2.7**	**2.3**	**3.3**	**2.8**
Unemployment rate[1]	5.4	5.4	5.4	6.0	6.0	5.9
90-day rate[2]	6.4	5.0	4.8	4.8	5.1	5.3
TWI[2]	50.5	51.6	54.1	55.5	56.6	56.8
CPI[3]	3.1	2.6	2.2	0.9	1.1	1.1
Current account balance (% GDP)	-4.8	-3.2	-4.4	-4.5	-4.4	-4.3
Nominal GDP (expenditure measure)	5.8	6.5	3.2	3.9	4.2	3.8

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.

This scenario assumes that households respond more to the prospect of much lower growth in household income, particularly from the farming sector. Higher oil prices and the consequent effect of eroding household discretionary income also work in the same direction. With household debt levels at record highs relative to disposable income, households could be less willing to smooth their consumption or take on more debt. As this feeds into weaker consumption and residential investment growth, GDP growth slows compared with the Central Forecast. As a consequence, business investment and employment growth are also lower, resulting in higher unemployment rates throughout most of the forecast period compared with the Central Forecast, and exacerbating the slowdown in household incomes.

Figure 4.2 – 90-day rates

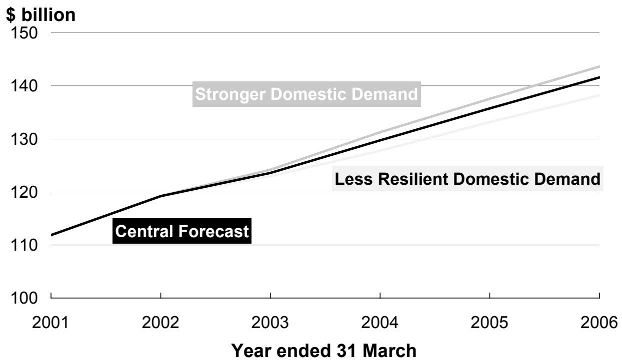


Sources: Statistics New Zealand, The Treasury

Overall, economic growth slows to 2.7% in 2002/03 and 2.3% in 2003/04, compared with 3.1% and 3.0% respectively in the Central Forecast. The unemployment rate rises to 6.0% in 2003/04 and wage growth eases throughout the forecast period. Consumption growth slows to 1.4% and residential investment contracts by 8.3% in 2003/04 as the slowdown in domestic demand reaches its trough.

With the economy operating below potential, wage and inflationary pressures are reduced. CPI inflation drops to 0.9% in 2003/04 compared with 1.8% in the Central Forecast. The much more benign outlook for inflation causes the Reserve Bank to ease interest rates and maintain stimulatory monetary conditions for longer. The extended period of low interest rates eventually provides some relief for the domestic sector. Consumption and investment recover over the latter part of the forecast period, boosting GDP growth above that in the Central Forecast in 2004/05.

Figure 4.3 – Nominal GDP



Sources: Statistics New Zealand, The Treasury

Weaker near-term consumption demand lowers import growth, resulting in a lower current account deficit over most of the forecast period relative to the Central Forecast.

Under this scenario, the nominal economy is around $0.6 billion smaller in 2002/03 owing to the combination of weaker growth and lower inflation compared with the Central Forecast. The gap in nominal GDP between this scenario and the Central Forecast widens to around $3.4 billion by 2005/06, driven by the sustained gap in CPI inflation.

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 gross debt.

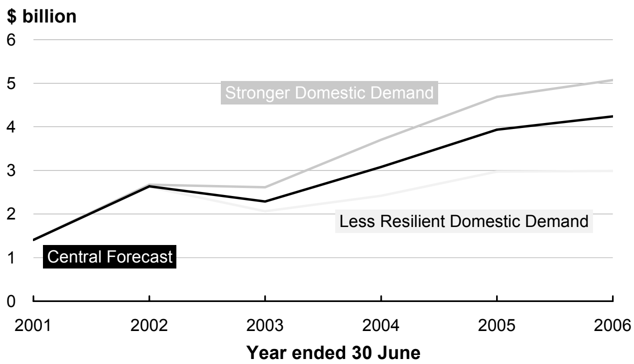
June years	2000/01 Actual	2001/02 Forecast	2002/03 Forecast	2003/04 Forecast	2004/05 Forecast	2005/06 Forecast
Operating balance ($ billion)						
Central Forecast	1.4	2.6	2.3	3.1	3.9	4.2
Stronger Domestic Demand	1.4	2.7	2.6	3.7	4.7	5.1
Less Resilient Domestic Demand	1.4	2.6	2.1	2.4	3.0	3.0
Gross debt ($ billion)						
Central Forecast	36.8	36.3	35.8	38.4	39.5	40.7
Stronger Domestic Demand	36.8	36.3	35.4	37.4	37.8	38.1
Less Resilient Domestic Demand	36.8	36.3	36.0	39.3	41.4	43.8
% GDP June years						
Operating balance (%)						
Central Forecast	1.2	2.2	1.8	2.3	2.9	3.0
Stronger Domestic Demand	1.2	2.2	2.1	2.8	3.4	3.5
Less Resilient Domestic Demand	1.2	2.2	1.7	1.9	2.2	2.1
Gross debt (%)						
Central Forecast	32.2	30.2	28.6	29.2	28.8	28.4
Stronger Domestic Demand	32.2	30.1	28.1	28.2	27.2	26.3
Less Resilient Domestic Demand	32.2	30.2	29.1	30.4	30.8	31.4

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

Sources: Statistics New Zealand, The Treasury

In the Stronger Domestic Demand scenario, the higher nominal GDP relative to the Central Forecast results in higher tax revenues. The higher CPI inflation increases benefit indexation costs, but the lower unemployment rate helps offset some of the increase. The higher interest rates through most of the forecast period compared with the Central Forecast increase the Government's financing costs.

Figure 4.4 – Operating balance



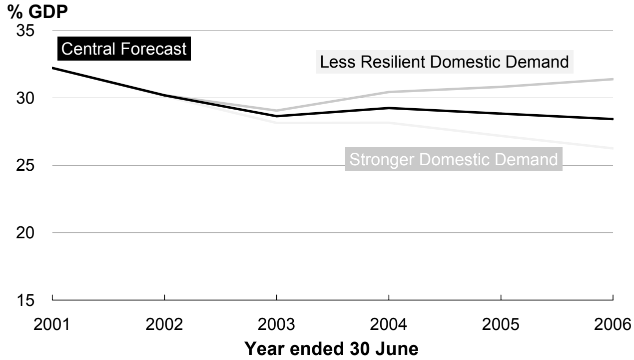
Sources: Statistics New Zealand, The Treasury

Overall, the operating balance is

higher under the Stronger Domestic Demand scenario than under the Central Forecast throughout the forecast period. At the end of the forecast period, the operating balance reaches $5.1 billion compared with $4.2 billion in the Central Forecast.

In the Less Resilient Domestic Demand scenario, the operating balance is lower than the Central Forecast throughout the forecast period. The lower nominal GDP leads to lower tax revenue, while the higher unemployment rate increases expenditure on benefits, although this is offset somewhat by a reduction in indexation costs owing to lower CPI inflation. Lower financing costs from the lower interest rates throughout the forecast period compared with the Central Forecast help offset some of the reduced tax revenue. At the end of the forecast period, the operating balance is $3 billion under the Less Resilient Domestic Demand scenario.

Figure 4.5 – Gross debt



Sources: Statistics New Zealand, The Treasury

The changes in the operating balance impact on gross debt. In the Stronger Domestic Demand scenario, gross debt is 2.1% of GDP lower than in the Central Forecast by the end of the forecast period. Gross debt is 3% of GDP higher by the end of the forecast period in the Less Resilient Domestic Demand scenario than in the Central Forecast.

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)	2002/03 Forecast	2003/04 Forecast	2004/05 Forecast	2005/06 Forecast
1% higher nominal GDP growth per annum				
Tax revenue	390	810	1,280	1,770
Expenses (mainly debt servicing)	(10)	(60)	(130)	(210)
Impact on the operating balance	**400**	**870**	**1,410**	**1,980**
Revenue impact of a 1% increase in the growth rates of:				
Wages and salaries	170	360	570	800
Taxable business profits	70	170	280	390
One percentage point lower interest rates				
Interest income	(20)	(50)	(50)	(60)
Expenses	(100)	(170)	(240)	(290)
Impact on the operating balance	**80**	**120**	**190**	**230**
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