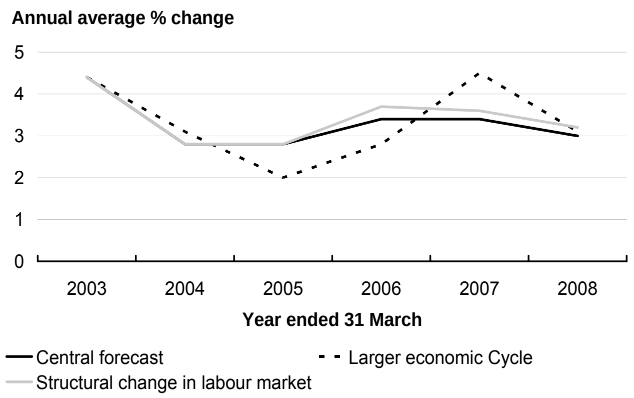
3

Risks and Scenarios

Summary

- The *December Update* forecasts reflect the balancing of a number of judgements about how the various factors affecting the economy will evolve.
- If actual events evolve differently from these judgements, the economy could go down an alternative path to that of our central forecast, with consequent impacts on the fiscal outlook.
- Weighing up the strength of domestic demand against the effects of the appreciation of the exchange rate on the economy has been a key judgement in forming the central forecast. The extent to which the fall in export receipts flows through into domestic spending behaviour poses a risk to the outlook for GDP growth.
- In addition, a larger negative impact on export volumes from the exchange rate appreciation than in the central forecast would see lower real and nominal GDP growth.
- Such a fall in GDP growth can be expected to flow through to the fiscal position with the OBERAC being smaller than under the central forecast and gross debt higher.
- A lower, sustainable, long-run rate of unemployment than in the central forecast would see higher real GDP for a period, lower inflation and slightly lower nominal GDP.

Figure 3.1 – Real GDP



Source: The Treasury

Economic Risks

The central forecast reflects the balancing of the upside and downside risks facing the economy to arrive at our best assessment of the way the economy is likely to evolve. This requires a number of key judgements to be made about how the various forces affecting the economy will evolve. These judgements include those about cyclical drivers of activity and those about the structural characteristics of the economy. If actual events differ from these judgements, the economy may deviate from our central forecast.

The international back-drop remains important …

Developments in the world economy can be an important driver of economic activity in New Zealand, through the impact on both the prices and volumes of New Zealand's exports and imports. Chapter 1 describes the outlook for trading partner growth that underpins the central forecast. This outlook would represent the best two-year period of growth since 1999 and 2000. In addition, the risks around the world outlook look to be more balanced than in the past, with evidence of growth picking up in the US and elsewhere.

As we have noted in previous *Updates*, the *Consensus* based forecasts point to a more muted recovery than normal, with growth returning only to something like trend rather than rising above it. The very rapid September quarter GDP growth out-turns in the US, Australia and Asia are a timely reminder that a much stronger rebound is possible at least for a period. However, looking further out, a number of major economies, including the US, face a number of structural challenges. The *Consensus* forecasts incorporate a view that these challenges will be worked through in a relatively benign manner. A less sanguine scenario leading to weaker trading partner growth would provide downside risk to the rebound in export growth built into the central forecast.

While some of the uncertainties and risks flowing from non-economic factors, including conflict in Iraq and SARS, have dissipated as assumed in the *Budget Update*, they have not disappeared. Perhaps the most visible outlet of risk is in the outlook for oil prices. A pick-up in geo-political uncertainty could see the gradual decline in oil prices over 2004 built into the central forecast fail to eventuate, and impact adversely on the outlook for the global economy, and New Zealand's terms of trade. More generally, in the central forecast a positive outlook for the price of a number of New Zealand's agricultural commodities provides an important boost for the terms of trade and incomes. Should this not eventuate, or the price of other categories of exports, with forestry prices perhaps the most likely candidate, fall further, the terms of trade will decline relative to the central forecast, with a subsequent flow-on to economic activity.

Weighing up the effects of the appreciation of the exchange rate on the economy has been a key judgement in forming the central forecast. Analysis of the effects on the economy of the exchange rate appreciation is complicated by the differing paths of the bilateral exchange rates of New Zealand's trading partners. The central forecast incorporates a sustained period of slow growth in non-commodity exports. A larger negative impact on export volumes would see a fall in real and nominal GDP growth. Another dimension of the appreciation of the exchange rate is through the effect on incomes. Exporters' incomes have fallen with the appreciation of the exchange rate. The extent to which this feeds through into domestic spending behaviour poses a risk to the outlook. The central forecast may underestimate the impact of the pass-through from the exchange rate into domestic spending, particularly if exports are more negatively affected. This would see a sharper slowing in consumption and investment spending.

… but many of the key risks are domestic this time around

With the outlook for the world economy improving and the risks more balanced compared with those which have prevailed in recent years, more of the key judgements underpinning the economic outlook centre around home grown drivers of growth.

If the judgements around net migration, labour income growth and the willingness of households to take on debt prove incorrect, the economy would evolve differently from that described in the central forecast.

Higher levels of net migration or employment growth continuing at the same pace as in the past 12 months would see further boosts to household spending, prolonging the expansion in residential investment and stimulating further increases in wealth through house prices. This could also see growth put further pressure on resources and increase inflationary pressures in the non-tradables sector of the economy. Wage developments are also an area of uncertainty. With the unemployment rate currently at the lowest point in 16 years, and forecast to remain low in the near term, wages could accelerate more sharply than contained in the central forecast. This could then flow into a more widespread increase in inflation pressure than is currently the case.

The central forecast incorporates an on-going build-up in household debt, with the cost of debt servicing rising. The ratio of debt to household income is at record high levels and households' willingness to continue to take this even higher, as well as the associated cash-flow implications of higher interest payments, are key areas of uncertainty around the growth outlook.

These risks largely relate to different cyclical drivers of economic activity. The structural characteristics of the economy, including such concepts as the long-term trend economic and productivity growth, and the long-term sustainable rate of unemployment, are important determinants of economic activity and national income over the longer term. Such concepts are difficult to measure and any estimates tend to have substantial uncertainty around the precise magnitudes. The second scenario in the subsequent section considers how the economy may develop if one of the judgements about the underlying structure of the economy, and specifically the labour market, is different from that underpinning the central forecast.

Economic Scenarios

The following scenarios present two possible growth paths for the economy if some of the key judgements underlying the central forecast are altered. The first scenario illustrates a larger GDP growth cycle, where initial momentum in domestic demand is stronger and the subsequent slowdown in the economy sharper. The second scenario assumes some changes in the underlying structure of the economy. The scenarios are two of a large number of possible examples, and do not represent upper or lower bounds for the central forecast, with more extreme paths possible.

Table 3.1 – Alternative scenarios: summary

	2002/03 Actual	2003/04 Forecast	2004/05 Forecast	2005/06 Forecast	2006/07 Forecast	2007/08 Forecast
Production GDP (annual average % change, March years)						
Central forecast	4.4	2.8	2.8	3.4	3.4	3.0
Larger economic cycle	4.4	3.1	2.0	2.8	4.5	3.1
Structural change in labour market	4.4	2.8	2.8	3.7	3.6	3.2
Nominal Expenditure GDP (annual average % change, March years)						
Central forecast	4.0	4.7	5.6	5.3	5.2	5.1
Larger economic cycle	4.0	5.0	5.0	4.2	5.4	5.0
Structural change in labour market	4.0	4.7	5.3	5.2	5.1	5.0
OBERAC ($ billion, June years)						
Central forecast	5.6	5.2	6.4	5.8	5.9	6.2
Larger economic cycle	5.6	5.5	5.0	3.9	4.1	4.2
Structural change in labour market	5.6	5.2	6.2	5.7	5.8	6.1

Sources: Statistics New Zealand, The Treasury

A larger economic cycle

Under the central forecast, real GDP growth slows from 4.4% in 2002/03 to 2.8% in 2003/04 and 2004/05, before lifting to 3.4% in 2005/06 and 2006/07.

This first scenario illustrates a larger economic cycle, where initial momentum in domestic demand is stronger than the central forecast, and the subsequent slowdown in the economy is sharper. In this scenario, exogenous drivers of growth, including net migration, the exchange rate in the near term, and the global economy evolve in line with the central forecast.

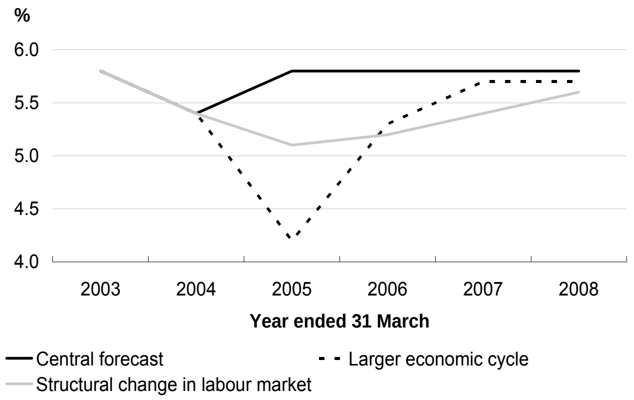
We have proxied a larger economic cycle by assuming a greater impact on export volumes from the current exchange rate appreciation and by households being less willing to fund residential investment and consumption out of debt. In the short term there is more momentum in domestic demand, contributing to real GDP growth of 3.1% in 2003/04. The stronger cycle comes about through a greater fall in activity in 2004/05, with weaker export volume growth and a larger slowing in household spending, seeing real GDP growth fall to 2.0% in 2004/05. GDP growth recovers to 2.8% in 2005/06 and 4.5% in 2006/07, in part due to the recovery in exports.

Momentum in domestic demand sees consumption and residential investment both grow more strongly over the end of the 2003/04 year. Consumption growth reaches 4.5% and residential investment grows 23.2%.

In this scenario, the current appreciation of the exchange rate is assumed to have a greater impact on the competitiveness of New Zealand exporters, leading to slower growth in export volumes of 3.0% and 4.0% in 2004/05 and 2005/06 respectively. Smaller growth in exports sees the current account deficit widen to 6.5% of GDP in 2005/06. In the domestic sectors, consumption and residential investment growth slows relative to the central forecast as households are less willing to take on debt.

With slower growth, businesses cut back on employment plans and employment falls in the 2005/06 year, pushing the unemployment rate to a peak of 6.6%. An increase in labour market slack sees lower wage growth, which, together with the slowing in employment growth, see smaller growth in labour income than in the central forecast.

Figure 3.2 – 90 Day Bill Rates



Source: The Treasury

Reduced income growth and job security flows into household behaviour, compounding the impact of reduced household willingness to take on debt. Consumption growth slows to 2.6% in the 2004/05 year and 2.0% in the 2005/06 year. Residential investment also experiences a larger cycle than in the central forecast, with growth of 4.4% in 2004/05 and a fall of 11.0% in 2005/06. With weaker domestic activity imports fall. Annual average GDP growth slows to 2.0% in 2004/05 and 2.8% in 2005/06.

While in annual average terms growth holds up at 2.0% in 2004/05, and 2.8% in 2005/06, this hides a prolonged period of weak growth. Growth over the second half of the 2004 calendar year is very weak, with some quarters where the economy contracts, and by March 2005 the level of real GDP is only slightly higher than the level in March 2004.

Table 3.2 – Larger economic cycle

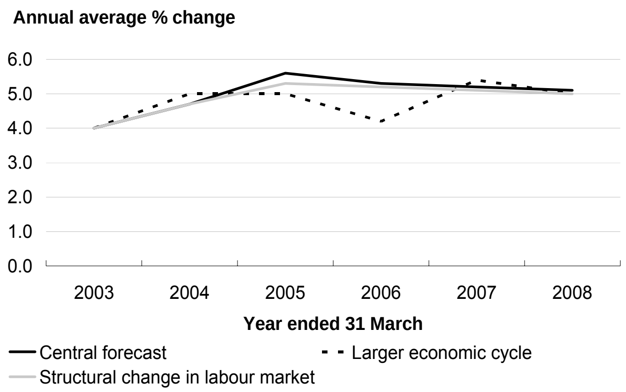
(Annual average % change, March years)	2002/03 Actual	2003/04 Forecast	2004/05 Forecast	2005/06 Forecast	2006/07 Forecast	2007/08 Forecast
Private consumption	3.8	4.5	2.6	2.0	2.4	2.9
Residential investment	23.3	23.2	4.4	-11.0	2.0	-0.6
Business investment	4.1	9.2	6.2	9.7	3.9	1.4
Gross national expenditure	4.5	5.7	3.6	2.7	2.8	2.4
Exports of goods and services	7.0	1.7	3.0	4.0	8.3	4.3
Imports of goods and services	9.4	12.0	7.5	3.3	3.6	2.5
GDP (production measure)	**4.4**	**3.1**	**2.0**	**2.8**	**4.5**	**3.1**
Employment growth	2.6	3.0	1.2	-1.1	1.7	2.2
Unemployment rate[1]	4.9	4.3	5.5	6.6	5.6	5.3
90-day bank bill rate[2]	5.8	5.4	4.2	5.3	5.7	5.7
TWI[2]	60.6	64.5	61.7	58.4	57.6	57.7
CPI[3]	2.5	1.4	2.5	1.5	1.8	1.9
Current account balance (% GDP)	-3.9	-5.5	-6.4	-6.5	-5.4	-4.7
Nominal GDP (expenditure measure)	4.0	5.0	5.0	4.2	5.4	5.0

Sources: Statistics New Zealand, Reserve Bank of New Zealand, The Treasury

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

Weaker growth and in particular reduced domestic demand flow through to lower inflationary pressures, with annual CPI inflation remaining low at 1.5% in 2005/06. This sees interest rates fall from the second half of 2004, with 90-day bank bills falling to 4.2% during 2005, around one and a half percentage points lower than under the central forecast. Lower interest rates help support business investment, with growth of 6.2% in the 2004/05 year and 9.7% in 2005/06.

Figure 3.3 – Nominal GDP



Source: The Treasury

With weaker growth the exchange rate is assumed to decline a little faster than in the central forecast, boosting export growth in 2006/07 and suppressing import growth. This helps support a rebound in GDP growth in 2006/07. In turn, businesses begin hiring again, and the unemployment rate falls back to 5.3% by the end of the forecast period. With excess capacity declining over the latter part of the forecast horizon, interest rates gradually rise to offset any emerging inflationary pressures.

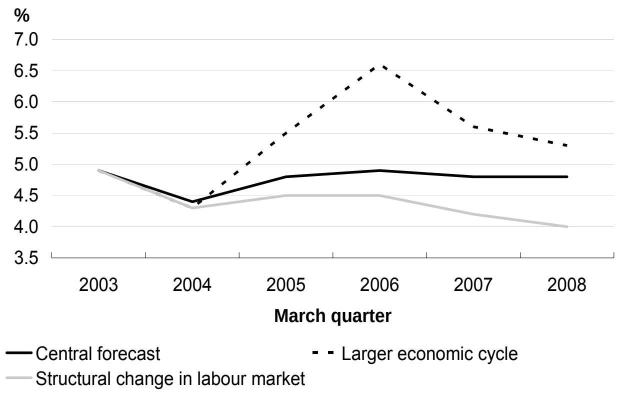
The level of nominal GDP is initially higher than in the central forecast due to the extra impetus to domestic demand. From the 2004/05 year onwards, the combined effect of lower output growth and lower inflation is a lower level of nominal GDP throughout the forecast period, despite a rebound in real GDP growth in 2006/07. By the end of the forecast period real economic activity is almost back to the central forecast level. However, the price level shock is permanent, and nominal GDP is about $2.3 billion lower than in the central forecast at the end of the forecast period. Moreover, with a number of years of weak GDP growth, profit growth will be under considerable pressure, to the extent of an increased build-up of tax losses.

Structural change in the labour market

Structural factors are also important determinants of economic activity, determining the growth path of the economy over the long term. This scenario considers the impact of ongoing falls in the long-run sustainable rate of unemployment over the rest of the forecast period. The actual unemployment rate is lower than in the central forecast and the economy grows more strongly, with growth of 3.7% and 3.6% in 2005/06 and 2006/07 respectively.

Estimates of the rate of unemployment that the economy can sustain without a marked build-up in inflationary pressures have declined over the past decade. The actual rate of unemployment has followed a similar pattern. A recent OECD paper suggested that a number of countries, including New Zealand, had experienced falls of around 0.5% per annum in structural unemployment over the past decade. In the New Zealand context this has occurred alongside improved economic performance and changes to the way the labour market operates. Increasing skill levels may also push the rate down. Treasury analysis supports the OECD's conclusion, although there is considerable uncertainty about precise estimates and future developments. In the central forecast, unemployment settles at around 5%. This scenario assumes a further fall of around one percentage point over the forecast period.

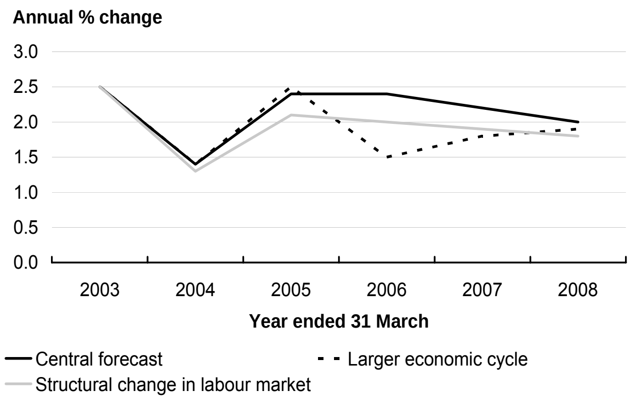
Figure 3.4 – Unemployment rate



Source: The Treasury

With the cyclical drivers of activity in this scenario the same as in the central forecast, it is labour market dynamics that drive developments in other sectors of the economy relative to the central forecast. With a lower sustainable unemployment rate, ongoing employment growth generates less pressure on resources in the economy, weaker wage growth and reduced inflationary pressures. Greater utilisation of labour allows trend output to increase for a period. CPI inflation is around 0.4 percentage points weaker than in the central forecast, staying around 2.0% for the entire forecast period, excluding the 2003/04 year where falls in tradable sector inflation see overall inflation of just 1.3%.

Figure 3.5 – CPI inflation



Source: The Treasury

Reduced inflationary pressure sees a lower track for interest rates. Lower interest rates provide a boost to both residential and business investment, increasing growth in 2005/06 and 2006/07. With higher investment than the central forecast, imports are also higher and the current account deficit is 5.6% of GDP at the end of the forecast period. Stronger economic growth drives a stronger labour market as firms look to take on more workers and employment growth is higher than in the central forecast. The unemployment rate gradually falls to 4.0% over the course of the forecast period.

Overall the lower long-term structural rate of unemployment sees real GDP growth lift relative to the central forecast for a period, with growth reaching 3.7% and 3.6% in 2005/06 and 2006/07 respectively, before falling back to 3.2% in 2007/08. This all translates into higher growth in real GDP per capita of 2.7% in 2005/06 and 2006/07.

Table 3.3 – Structural change in the labour market

(Annual average % change, March years)	**2002/03 Actual**	**2003/04 Forecast**	**2004/05 Forecast**	**2005/06 Forecast**	**2006/07 Forecast**	**2007/08 Forecast**
Private consumption	3.8	4.3	2.9	2.9	3.1	3.2
Residential investment	23.3	20.3	5.4	-4.6	0.9	1.5
Business investment	4.1	9.1	5.9	7.8	4.5	4.3
Gross national expenditure	4.5	5.4	3.8	3.4	3.2	3.1
Exports of goods and services	7.0	1.7	4.2	6.1	5.7	3.8
Imports of goods and services	9.4	11.9	7.1	5.1	4.6	3.4
GDP (production measure)	**4.4**	**2.8**	**2.8**	**3.7**	**3.6**	**3.2**
Employment growth	2.6	3.0	1.4	0.9	1.7	1.7
Unemployment rate[1]	4.9	4.3	4.5	4.5	4.2	4.0
90-day bank bill rate[2]	5.8	5.4	5.1	5.2	5.4	5.6
TWI[2]	60.6	64.5	63.3	61.0	59.8	58.9
CPI[3]	2.5	1.3	2.1	2.0	1.9	1.8
Current account balance (% GDP)	-3.9	-5.5	-5.9	-5.8	-5.8	-5.6
Nominal GDP (expenditure measure)	4.0	4.7	5.3	5.2	5.1	5.0

Sources: Statistics New Zealand, Reserve Bank of New Zealand, The Treasury

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

Under this scenario, the level of real GDP is just over $0.8 billion larger than in the central forecast by the end of the forecast period. However, with less inflation than the central forecast the nominal economy gets progressively smaller than under the central forecast, with nominal GDP being $1.0 billion lower at the end of the forecast period.

Fiscal Scenarios

The fiscal position is strongly influenced by the economy. The major economic determinants, and how they impact on the fiscal position, are listed below. While each effect is expressed in terms of an increase, the opposite impact applies for a decrease.

- Nominal GDP – stronger GDP levels are reflected in a higher tax take, which increases the operating balance and lowers the Government's debt.
- Interest rates – higher interest rates lead to increased debt financing costs. While interest-based revenue increases too, the negative effect of higher finance costs on the operating balance dominates, meaning debt increases.
- The level of unemployment – higher levels of unemployment translate to increased spending, because the numbers of unemployment beneficiaries rise. This decreases the operating balance and raises debt levels.
- CPI inflation – as most benefits are indexed to CPI movements, higher inflation results in increased benefit costs. This reduces the operating balance and increases debt.

Table 3.4 shows the effects of the two scenarios on the operating balance and gross debt.

Table 3.4 – Alternative scenarios: OBERAC and gross debt

June years	**2002/03 Actual**	**2003/04 Forecast**	**2004/05 Forecast**	**2005/06 Forecast**	**2006/07 Forecast**	**2007/08 Forecast**
OBERAC ($ billion)						
Central Forecast	5.6	5.2	6.4	5.8	5.9	6.2
Larger Economic Cycle	5.6	5.5	5.0	3.9	4.1	4.2
Structural Change in the Labour Market	5.6	5.2	6.2	5.7	5.8	6.1
Gross sovereign-issued debt ($ b)						
Central Forecast	36.1	34.5	32.9	33.0	33.6	34.1
Larger Economic Cycle	36.1	34.2	34.0	35.9	38.3	40.7
Structural Change in the Labour Market	36.1	34.5	33.1	33.3	34.0	34.6
OBERAC (% GDP)						
Central Forecast	4.3%	3.8%	4.4%	3.8%	3.7%	3.7%
Larger Economic Cycle	4.3%	4.0%	3.5%	2.6%	2.6%	2.6%
Structural Change in the Labour Market	4.3%	3.8%	4.3%	3.8%	3.7%	3.7%
Gross sovereign-issued debt (% GDP)						
Central Forecast	28.0%	25.3%	23.0%	21.9%	21.2%	20.4%
Larger Economic Cycle	28.0%	25.0%	24.0%	24.1%	24.5%	24.8%
Structural Change in the Labour Market	28.0%	25.3%	23.3%	22.2%	21.6%	20.9%

Sources: Statistics New Zealand, The Treasury

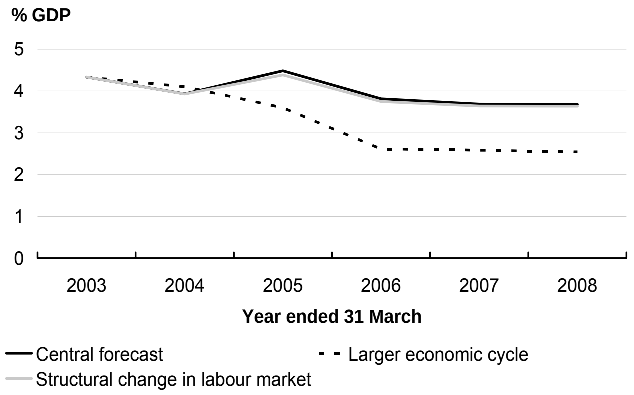
Of the two alternative scenarios, the differences from the central forecast are far more marked in the “larger economic cycle” scenario.

Strong growth in corporate tax has been a notable feature of the increase in tax revenue and in ratio of tax-to-GDP of the last two years, and the central forecast largely maintains this ratio over forecast period. However, it is possible that some of the increase of recent years is not sustained and that the overall tax-to-GDP ratio over the forecast period is lower than anticipated.

In the “larger economic cycle” scenario, we have proxied this by lowering corporate tax, over and above that implied by the weaker economy. This could come about if there was an increase in the amount of tax losses available to offset taxable income as a result of the two years of lower profit growth. It could also arise if more of the recent rise is due to cyclical factors than we currently anticipate.

The OBERAC track across the forecast years 2003/04 to 2007/08 is only slightly weaker, under the "structural change in the labour market" scenario, than it is in the central forecast. A marginally weaker GDP track results in small annual decreases in tax revenue. Much of this effect is negated by a lower expense track, chiefly due to reduced expenditure on unemployment benefits. The latter occurs because, in this scenario, the unemployment rate is considerably lower between 2005/06 and 2007/08.

Figure 3.6 – OBERAC

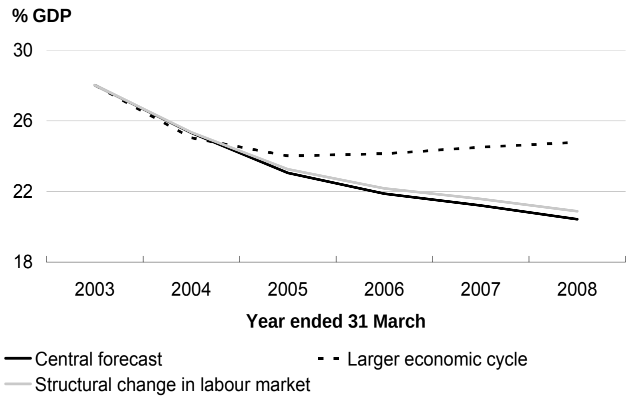


Source: The Treasury

By contrast, from 2004/05 onwards, OBERAC follows a significantly reduced pathway under the "larger economic cycle" scenario. Two factors are largely responsible. Firstly, as mentioned above, this scenario features a large corporate tax reaction to the reduced economic growth. By 2007/08, this loss in corporate tax revenue strips over $1 billion out of the operating balance. Secondly, economic growth is weaker in this scenario, so the ensuing reduction in other tax types, such as PAYE and GST, is more pronounced. Higher inflation in the early years increase benefit expenses above those in the central forecast, and a higher unemployment rate also pushes up benefit costs. While lower interest rates initially reduce the cost of debt, the build-up of debt results in significantly higher finance costs by 2007/08. The combination of weaker revenues and increased expenses means a reduced operating balance.

The small difference in the OBERAC track, between the "structural change in the labour market" scenario and the central forecast, translates to minor changes in the pathway of gross sovereign-issued debt (GSID). The slightly reduced operating balances result in a marginally higher debt track.

Figure 3.7 – Gross sovereign-issued debt



Source: The Treasury

For the "larger economic cycle" scenario, the cumulative effect of increasingly larger reductions in the operating balance over the forecast years results in quite a large wedge between this scenario's GSID track and that of the central forecast. Each year after 2003/04 sees less tax dollars available to pay for spending, and hence higher borrowing requirements. Added to this are higher non-finance expenses in the first years, and an increasing finance cost as the debt stock grows. By 2007/08, GSID is nearly 4.5% higher, as a percentage of GDP, than under the central forecast.

Fiscal Sensitivities

The scenario above indicates the sensitivity of fiscal aggregates to changes in economic conditions. Table 3.5 provides some "rules of thumb" on the sensitivities of the fiscal position to changes in specific variables.

Table 3.5 – Fiscal sensitivity analysis

($ million) June Years	2003/04 Forecast Actual	2004/05 Forecast	2005/06 Forecast	2006/07 Forecast	2007/08 Forecast
1% Lower Nominal GDP Growth per Annum					
Revenue	(435)	(900)	(1,400)	(1,975)	(2,560)
Expenses (mainly debt servicing)	15	55	120	225	360
Impact on the Operating Balance	**(450)**	**(955)**	**(1,520)**	**(2,200)**	**(2,920)**
Revenue Impact of a 1% Decrease in the Growth Rates of rates of:					
Wages and salaries	(170)	(355)	(560)	(780)	(1,020)
Taxable business profits	(85)	(200)	(325)	(450)	(595)
One Percentage Point Lower Interest Rates					
Interest income	(9)	(17)	(21)	(26)	(33)
Expenses	(74)	(139)	(165)	(197)	(218)
Impact on the Operating Balance	**65**	**122**	**144**	**171**	**185**
One Percentage Point Lower Real Interest Rates					
ACC liability (SOE and Crown entity surpluses)	(700)				
Government Superannuation Fund liability (expenses)	(1,900)				
Impact on the Operating Balance	**(2,600)**				

The forecasts of capital contributions for 2004/05 to 2007/08 are sensitive to the expected net after-tax annual return of the New Zealand Super Fund, which in turn depends on the expected gross rate of return assumed on the Fund's assets:

Table 3.6 – New Zealand Superannuation Fund contributions sensitivity analysis

Variable	**Marginal change** (%age points)	**Effect on net return after tax** (%age points)	**Effect on capital contribution ($ billion)** 2004/05	2005/06	2006/07	2007/08
Expected gross rate of return	-1%	-0.67%	+0.150	+0.160	+0.175	+0.190

A +1% change in the gross rate of return would have symmetrical, negative effects on the required capital contribution track across these years.