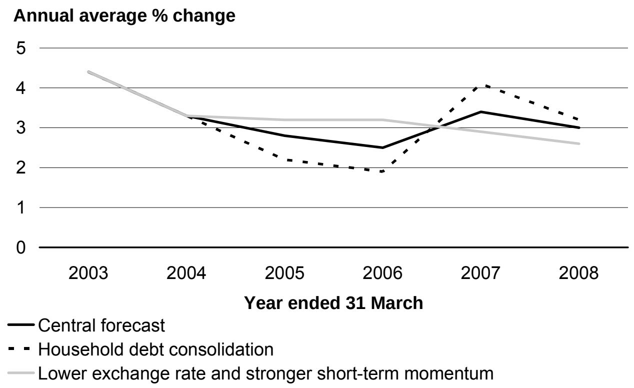
3

Risks and Scenarios

Summary

- The *Budget Update* forecasts reflect a number of judgements about how different 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.
- As discussed in Chapter 1, we appear to be approaching a further slowdown in economic growth. The future pace and depth of that slowdown rely on how different factors evolve. This chapter explores what is likely to happen to economic and fiscal outcomes if a few key factors evolve differently.

Figure 3.1 – Real GDP



Source: The Treasury

- Private consumption growth is a key risk to the central forecast as household debt has increased faster than household income. The scenario of rapid household debt consolidation shows a temporary reduction in real GDP but permanently lower nominal GDP, which results in a deterioration of the fiscal position.
- Weighing up the impact of the exchange rate cycle on the economy and likely future movements have been key judgements in forming the central forecast. The second scenario is based on a more rapid depreciation of the exchange rate, combined with a period of stronger near-term momentum. This scenario results in a period of sustained economic growth and permanently raises nominal GDP, improving the fiscal position.

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 develop. This requires a number of key judgements to be made about how the various forces affecting the economy will evolve. If actual events differ from these judgements, the economy may deviate from our central forecast.

Many of the key risks are domestically focused

Many of the key judgements underpinning the central forecast centre on the domestic economy. This is because the outlook for the external economy appears to be more certain than it has for the past few years. There are upside and downside risks around the economic outlook.

In the near term there is a risk that the central forecast has underestimated the strength of current domestic momentum. Since the central forecast was finalised there have been a number of data outturns that have been more positive than expected, including strong employment growth and a fall in the unemployment rate in the March quarter, combined with strong retail spending in the month of March.

A risk to the central forecast is that it incorporates an ongoing build up in household debt. The ratio of debt to household income is at record high levels. A key uncertainty in the economic outlook is around households' willingness to continue to expand debt further, with the associated cash flow implications of higher interest payments. One of the scenarios in the subsequent section considers how the economy may develop if households attempt a more aggressive consolidation of their balance sheets.

An additional risk to domestic demand is that net migration could fall faster or further than the assumption contained in the central forecast. A significantly lower level of net migration is likely to cause household spending to moderate, reduce residential investment and reduce support for wealth increases from high house prices, and is likely to reduce current inflationary pressure in the non-tradable sector and therefore reduce the requirement for any further monetary policy response.

Productive capacity has been propelled by significant increases in labour utilisation over the past decade. Implicit in the central forecast is a view that labour utilisation does not have much further scope to increase, requiring firms to meet output growth by increasing capital inputs. Output capacity growth could be reduced if capital deepening does not occur as forecast.

The historically low unemployment rate also increases the risk of wages rising more sharply than in the central forecast. The *December Update* showed a band of estimates of the non-accelerating inflation rate of unemployment (NAIRU) that indicated that the current level of the unemployment rate could be adding to wage pressure. Additional indicators of wage pressure include high survey measures of labour shortages and labour as a limiting factor on production. If wages accelerated more sharply than in the central forecast, this could flow into a more widespread increase in inflationary pressure and act as a further constraint on production.

But the international backdrop remains important

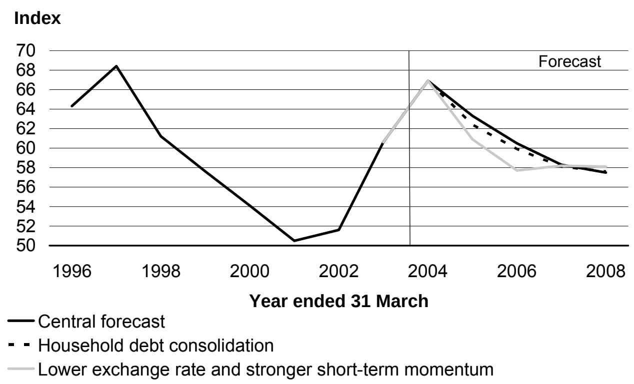
Developments in the world economy can be an important driver of domestic activity, largely through the impact on both the prices and volumes of exports and imports, as well as through interest rates and confidence. Chapter 1 outlined the *Consensus* forecasts for trading partner growth that underpin the central forecast. Over time *Consensus* forecasts of global growth for 2004 have continued to be revised up, with increasing signs of a global recovery and lower perceptions of geopolitical risk.

There are still some upside risks around the global outlook. Recent data has largely surprised on the upside, particularly for the US. If global growth is stronger than expected due to very stimulatory monetary policy (and fiscal policy in the US) then some countries could face inflationary risks. A strong monetary policy response would likely cause a larger global economic cycle, implying stronger demand for New Zealand exports through most of the forecast period, but possibly lead to weaker demand for exports further out.

However, the global economy still contains a number of structural imbalances, which continue to be exacerbated as US domestic demand has risen faster than that of other countries. A particular concern is how the sizeable US current account and budget deficit adjustment will work through, including the response of the US dollar. As we have witnessed recently, our exchange rate is closely related to perceptions of the US economy. If the US dollar weakens as part of this adjustment process, it could lead to a significant appreciation of the New Zealand dollar, with a subsequent impact on New Zealand's economic outlook.

The effects of the recent exchange rate cycle on the economy and the future path of the exchange rate are key judgements. Analysis of the impact of the exchange rate on the economy is complicated by the importance of cross rates with particular trading partners, various hedging strategies of firms, and commodity price movements. The central forecast incorporates a negative impact from the exchange rate on services and manufactured export volumes, with a lag of up to two years. The extent to which exporters' incomes suffer from the previous level of the exchange rate and how this feeds through into domestic spending behaviour is a risk to the outlook. However, if the pace of the recent depreciation of the exchange rate continues, there is potential for higher export receipts, with a flow-on impact on real and nominal GDP growth. This possibility is included as a scenario in the next section.

Figure 3.2 – Trade weighted index



Source: The Treasury

Economic Scenarios

The following scenarios present two possible growth paths for the economy when some of the key judgements underlying the central forecast are altered. In the first scenario, labelled "Household debt consolidation", domestic momentum is weaker than in the central forecast as households reduce expenditure due to high levels of debt and the rising cost of debt servicing, combined with fears around the level of future house prices. The second scenario labelled "Lower exchange rate and stronger short-term momentum" shows the exchange rate falling more quickly through 2004 and slightly stronger initial domestic momentum than in the central forecast. 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 Estimate	2004/05 Forecast	2005/06 Forecast	2006/07 Forecast	2007/08 Forecast
Production GDP (annual average % change, March years)						
Central forecast	4.4	3.3	2.8	2.5	3.4	3.0
Household debt consolidation	4.4	3.3	2.2	1.9	4.1	3.2
Lower exchange rate and stronger short-term momentum	4.4	3.3	3.2	3.2	2.9	2.6
Nominal Expenditure GDP (annual average % change, March years)						
Central forecast	3.8	6.1	5.7	4.3	5.0	5.3
Household debt consolidation	3.8	6.1	5.1	3.2	5.0	5.2
Lower exchange rate and stronger short-term momentum	3.8	6.1	6.1	5.3	5.0	5.2
OBERAC ($ billion, June years)						
Central forecast	5.6	6.0	5.7	5.0	5.1	5.4
Household debt consolidation	5.6	6.0	5.2	4.3	4.6	4.9
Lower exchange rate and stronger short-term momentum	5.6	5.9	6.0	5.6	5.4	5.6

Sources: Statistics New Zealand, The Treasury

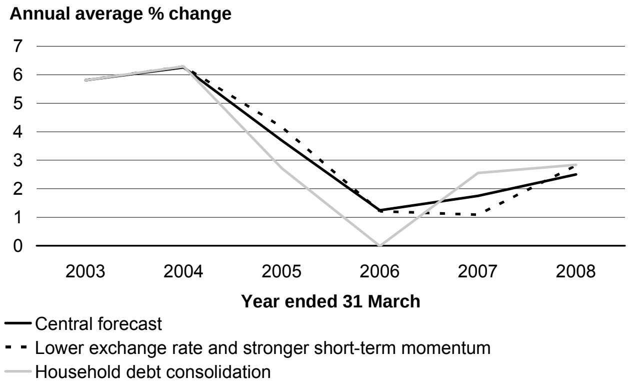
Household debt consolidation

In the central forecast, real GDP growth shows a modest slowdown, before rebounding to above trend in 2006/07. In this scenario initial GDP growth is weaker as households are assumed to reduce the growth rate on their level of debt by cutting back on consumption and residential investment. This consolidation is due to rising unease about a number of risk factors around rising levels of debt and exposure to the housing market. The risk factors leading to household unease include: a ratio of debt to household income at record high levels; recent very rapid house price increases; falling net migration lowering housing demand; and expectations of further interest rate increases raising debt servicing costs. This weaker domestic momentum sees real GDP growth fall to 2.2% in 2004/05 and 1.9% in 2005/06 and then rising to above trend as the domestic economy recovers.

Discomfort with current levels of debt combined with rising debt servicing costs is assumed to lead to households reducing consumption growth.

Concern about the state of the housing market and levels of debt also leads to households reducing demand for residential investment. Once the backlog of residential orders is cleared, residential investment growth turns negative in 2005/06. Residential investment cycles of this size have not been uncommon in history.

Figure 3.3 – Growth in consumption and residential investment



Source: The Treasury

Falling domestic demand eases capacity constraints and lowers firms' profit margins. Businesses respond to this weaker demand by slowing their rates of investment.

Table 3.2 – Household debt consolidation

(Annual average % change, March years)	**2002/03 Actual**	**2003/04 Estimate**	**2004/05 Forecast**	**2005/06 Forecast**	**2006/07 Forecast**	**2007/08 Forecast**
Private consumption	4.4	5.4	2.8	1.6	2.6	2.8
Residential investment	23.4	15.7	2.0	-15.7	2.0	3.3
Business investment	5.6	12.9	8.2	1.8	3.4	5.1
Gross national expenditure	4.6	7.1	4.0	1.0	3.1	3.2
Exports of goods and services	7.0	0.3	5.4	4.1	5.7	4.3
Imports of goods and services	9.4	11.8	9.4	0.9	3.1	4.1
GDP (production measure)	**4.4**	**3.3**	**2.2**	**1.9**	**4.1**	**3.2**
Employment growth	2.6	2.8	1.4	0.1	1.2	1.7
Unemployment rate[1]	4.9	4.6	4.8	5.6	5.3	5.0
90-day bank bill rate[2]	5.8	5.5	5.7	5.3	5.6	5.7
TWI[2]	60.6	66.9	62.4	59.9	58.1	57.6
CPI[3]	2.5	1.5	2.5	1.7	1.7	1.9
Current account balance (% GDP)	-3.9	-4.8	-5.8	-5.4	-4.8	-4.6
Nominal GDP (expenditure measure)	3.8	6.1	5.1	3.2	5.0	5.2

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.

With slower growth, businesses cut back on employment plans and employment growth is flat in the 2005/06 year, pushing the unemployment rate to a peak of 5.6%. Lower income growth and job security fears flow into household behaviour, compounding the impact of reduced household willingness to take on debt.

In this scenario the Reserve Bank responds with a lag and 90-day bill rates remain at neutral through 2004. With falling non-tradable inflation due to capacity constraints easing, the Reserve Bank starts a programme of rate cuts, with 90-day bill rates dropping to 5.3% in 2005.

By the end of 2006, households have reduced their levels of debt to a level with which they are comfortable and the cost of servicing that debt is reduced. This is combined with a period of a low exchange rate and supportive interest rates. So from 2006 private consumption, residential investment and business investment all grow faster than in the central scenario, boosting GDP growth.

By the end of the forecast period real economic activity is almost back to the central forecast level. However, the negative price level shock is permanent, and nominal GDP is around $2.9 billion lower than in the central forecast, which has a negative impact on the OBERAC. Moreover, with a number of years of weak GDP growth, profit growth will be under considerable pressure and could lead to an increased build-up of tax losses.

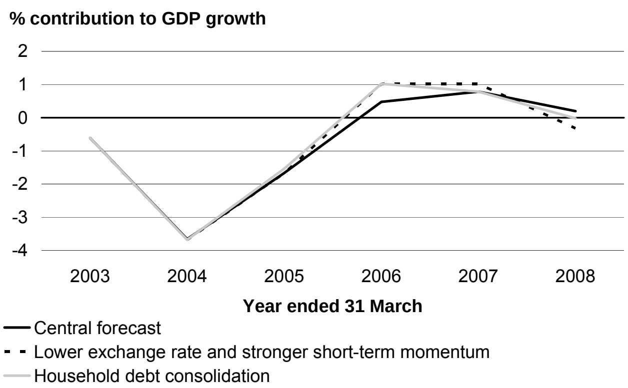
Lower exchange rate and stronger short-term momentum

This scenario illustrates the impact of the exchange rate falling more sharply in 2004, leading to stronger exports and weaker imports, combined with slightly stronger initial domestic momentum. Stronger growth in the first half of the forecast period exacerbates capacity constraints, with the interest rate response leading to below-trend growth from 2007.

Since our forecasts were finalised the exchange rate has been dropping faster than anticipated, largely on the back of positive news about the US economy. This scenario assumes expectations about the US and other key economies continue to improve, and the interest rate differential between New Zealand and other economies continue to close.

The faster fall in the exchange rate provides a greater boost to export volumes, contributing to ongoing real GDP growth of around 3.2% through to 2006. Growth rates ease back to slightly below trend from 2007, as the Reserve Bank moves to dampen inflationary pressure with higher interest rates.

Figure 3.4 – Net external sector



Source: The Treasury

The exchange rate falls to a low of almost 57 in 2006, leading to stronger export growth and weaker import growth than in the central scenario. The current account deficit is smaller than in the central forecast, particularly through the middle of the forecast period where it drops to a low of -4.6% of GDP in 2007/08.

Stronger initial household momentum boosts private consumption in 2004, but from 2005 consumption growth is lower than in the central scenario, largely due to higher interest rates. Stronger household demand also boosts initial residential investment. Business confidence is also supported by stronger domestic momentum and the falling exchange rate.

Employment growth is initially buoyed by stronger output expansion than in the central forecast. With the unemployment rate falling to a low of 4.1% in 2006, the tight labour market leads to wage increases of around 4% for most of the forecast period, which leads to a slowing in employment growth. Strong labour income growth and higher levels of job security boost household confidence and help to offset the negative impact of high interest rates on private consumption from 2005.

Table 3.3 – Lower exchange rate and stronger short-term momentum

(Annual average % change, March years)	**2002/03 Actual**	**2003/04 Estimate**	**2004/05 Forecast**	**2005/06 Forecast**	**2006/07 Forecast**	**2007/08 Forecast**
Private consumption	4.4	5.4	3.7	2.2	2.4	3.1
Residential investment	23.4	15.7	8.7	-7.9	-12.3	-0.6
Business investment	5.6	12.9	8.8	4.7	0.5	3.8
Gross national expenditure	4.6	7.1	5.0	2.1	1.8	3.0
Exports of goods and services	7.0	0.3	5.5	5.8	6.1	3.0
Imports of goods and services	9.4	11.8	9.9	2.4	2.8	3.7
GDP (production measure)	**4.4**	**3.3**	**3.2**	**3.2**	**2.9**	**2.6**
Employment growth	2.6	2.8	1.5	1.6	1.8	0.6
Unemployment rate[1]	4.9	4.6	4.5	4.1	4.6	5.0
90-day bank bill rate[2]	5.8	5.5	5.8	6.6	6.0	5.8
TWI[2]	60.6	66.9	60.9	57.7	58.2	58.1
CPI[3]	2.5	1.5	2.7	2.9	2.7	2.2
Current account balance (% GDP)	-3.9	-4.8	-5.9	-5.3	-4.6	-4.8
Nominal GDP (expenditure measure)	3.8	6.1	6.1	5.3	5.0	5.2

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.

In this scenario tradable inflation rises rapidly as import prices increase from the depreciating exchange rate. In addition, the stronger economy puts further pressure on non-tradable inflation as capacity constraints intensify. To combat inflationary pressures 90-day bill rates are required to rise above neutral, peaking at 6.6% in 2006.

Interest rate increases lead to residential investment falling and business investment growing weakly in 2006/07, helping to slow the domestic economy.

In this scenario, the level of real GDP at the end of the forecast period is almost back to the level in the central forecast. However, the price-level shock is permanent, so nominal GDP is $2 billion higher at the end of the forecast period, with a positive impact on the OBERAC. In addition, strong real GDP growth in the middle years of the forecast period will boost profit growth and limit the build-up of tax losses.

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.
- Annual wage growth – higher wage growth increases labour costs, which contribute to most expense classes. This lowers the operating balance and lifts debt levels.
- 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 number of unemployment beneficiaries rises. This decreases the operating balance and raises debt levels.
- CPI inflation – as most benefits are indexed to CPI movements, higher inflation increases benefit costs. This reduces the operating balance and increases debt.

Table 3.4 – Alternative scenarios: OBERAC and gross debt

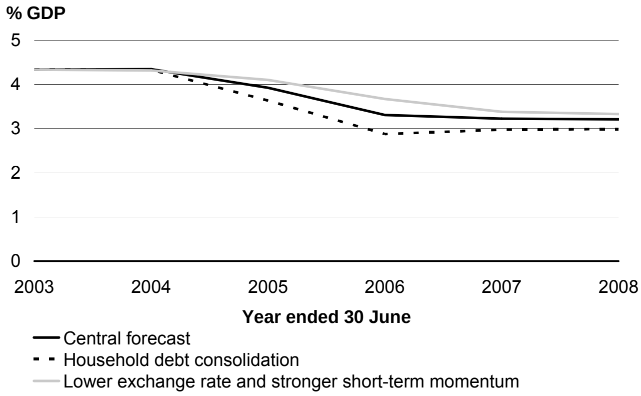
June years	2002/03 Actual	2003/04 Estimate	2004/05 Forecast	2005/06 Forecast	2006/07 Forecast	2007/08 Forecast
OBERAC ($ billion)						
Central forecast	5.6	6.0	5.7	5.0	5.1	5.4
Household debt consolidation	5.6	6.0	5.2	4.3	4.6	4.9
Lower exchange rate and stronger short-term momentum	5.6	5.9	6.0	5.6	5.4	5.6
Gross sovereign-issued debt ($ b)						
Central forecast	36.1	34.0	32.7	33.6	34.9	36.3
Household debt consolidation	36.1	34.1	33.2	34.8	36.6	38.5
Lower exchange rate and stronger short-term momentum	36.1	34.1	32.4	32.8	33.8	34.9
OBERAC (% GDP)						
Central forecast	4.3	4.3	3.9	3.3	3.2	3.2
Household debt consolidation	4.3	4.3	3.6	2.9	3.0	3.0
Lower exchange rate and stronger short-term momentum	4.3	4.3	4.1	3.7	3.4	3.3
Gross sovereign-issued debt (% GDP)						
Central forecast	28.0	24.7	22.6	22.3	22.0	21.8
Household debt consolidation	28.0	24.7	23.2	23.5	23.5	23.4
Lower exchange rate and stronger short-term momentum	28.0	24.7	22.3	21.4	21.0	20.7

Sources: Statistics New Zealand, The Treasury

The two alternative scenarios have contrasting impacts on the key fiscal indicators, although the differences from the central forecast are more pronounced for the "Household debt consolidation" scenario. In this scenario the reduction in economic growth, compared with the central forecast, is more severe than the corresponding rise in growth in the "Lower exchange rate and stronger short-term momentum" scenario.

In the "Household debt consolidation" scenario the OBERAC is below the central forecast value in every year of the Budget forecast. Weaker GDP growth translates to reduced tax revenue. While a lower inflation track reduces benefit growth and weaker wage growth lowers other expenses, these effects are not enough to offset the fall in tax revenue.

Figure 3.5 – OBERAC

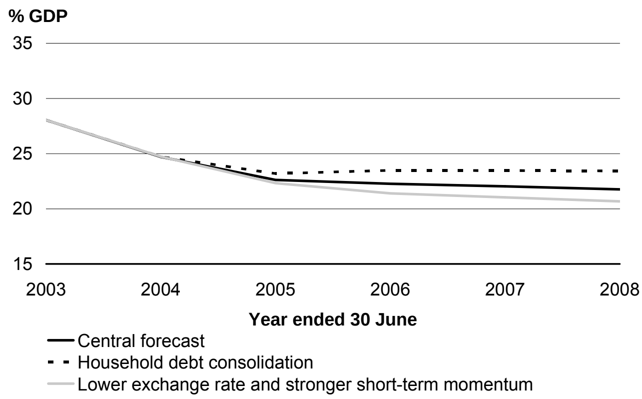


Source: The Treasury

Compared with the central forecast, the OBERAC is stronger under the "Lower exchange rate and stronger short-term momentum" scenario in the final four years. The difference is greatest in 2005/06, with the gap almost closing by the end of the forecast period. In this scenario, stronger GDP growth from 2004/05 onwards produces higher tax revenue. In 2004/05 and 2005/06 increased debt financing costs, due to higher interest rates in these years, marginally reduce the impact of stronger tax flows on the OBERAC. Interest rates are higher due to the scenario's weaker exchange rate. In 2006/07 and 2007/08, stronger wage growth and higher inflation increase operating expenses above their levels in the central forecast. This dampens the impact of higher tax revenue on the OBERAC in these years.

Reduced operating balances in every year of the forecast track, under the "Household debt consolidation" scenario, mean borrowing requirements are higher in every year. This has a cumulative effect in increasing gross sovereign-issued debt (GSID) over the forecast horizon. The result is a relatively flat GSID-to-GDP track, rather than the decreasing profile in the central forecast.

Figure 3.6 – Gross sovereign-issued debt



Source: The Treasury

For the "Lower exchange rate and stronger short-term momentum" scenario, GSID has a lower track, compared with the central forecast, from 2004/05 onwards. Higher operating balances result in lower borrowing, which reduces debt. Because the increases in the OBERAC from the central forecast were not as great as the decreases were in the "Household debt consolidation" scenario, the decreases in GSID are also not as marked as the increases were in the other scenario.

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	**2004/05 Forecast**	**2005/06 Forecast**	**2006/07 Forecast**	**2007/08 Forecast**
1% Lower Nominal GDP Growth per Annum				
Revenue	(425)	(870)	(1,380)	(1,905)
Expenses (mainly debt servicing)	15	50	120	220
Impact on the Operating Balance	**(440)**	**(920)**	**(1,500)**	**(2,125)**
Revenue Impact of a 1% Decrease in the Growth Rates of:				
Wages and salaries	(180)	(375)	(590)	(825)
Taxable business profits	(95)	(210)	(335)	(470)
One Percentage Point Lower Interest Rates				
Interest income	(24)	(32)	(42)	(53)
Expenses	(124)	(167)	(212)	(243)
Impact on the Operating Balance	**100**	**135**	**170**	**190**
One Percentage Point Lower Real Interest Rates				
ACC liability (SOE and Crown entity surpluses)	(700)			
GSF 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 NZS 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%	+0.155	+0.165	+0.180	+0.195

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