3

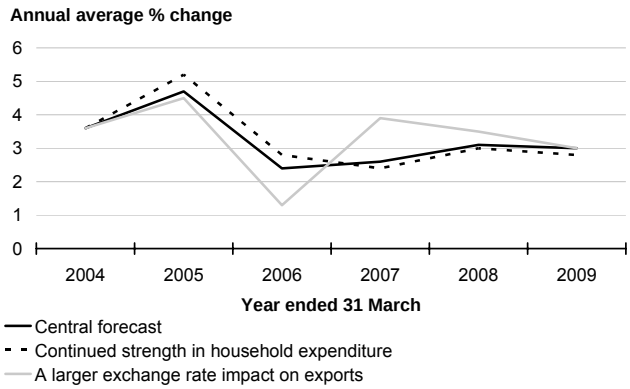
Risks and Scenarios

Summary

- The *December Update* forecasts reflect a number of judgements about how different factors that may affect the economy will evolve. If actual events evolve differently from these judgements, the economy could take an alternative path to that of our central forecast, with consequent impacts on the fiscal outlook.

- In the central forecast presented in Chapter 1, economic growth is expected to remain strong over the remainder of the year to March 2005 prior to the economy entering a period of slower growth. The future pace and depth of that slowdown is dependent on how different factors evolve. This chapter explores what is likely to happen to economic and fiscal outcomes if several of the factors evolve differently.

Figure 3.1 – Real GDP



Source: The Treasury

- The extent to which household debt will impinge upon the spending decisions of households and the associated growth in private consumption and residential investment is one set of key judgements associated with the central forecast. The scenario of continued strength in household expenditure examines the impact of this debt constraint being smaller than the effect built into the central forecasts. The scenario shows a generally diminishing boost to real GDP but higher nominal GDP throughout the forecast period, resulting in a larger fiscal surplus.

- The future path of the exchange rate and its impacts on exporters have also been key judgements in forming the central forecasts. The second scenario is based on a continued appreciation of the exchange rate, combined with a more substantial impact on exporters. This scenario results in a period of slower economic growth and reduces the level of nominal GDP throughout the forecast period.

Economic Risks

The central forecast reflects the balancing of potential 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 the central forecast. There are both upside and downside risks around the economic outlook.

A number of the potential risks are domestically orientated

Climatic conditions are an important influence on agricultural related production in New Zealand. According to NIWA, the tropical Pacific is currently in a weak El Niño state, which is likely to continue into early 2005. El Niño climatic conditions tend to be associated with enhanced westerly winds and drier conditions in the East. A more severe event and the associated dry conditions would have a detrimental impact on agricultural production and if lake levels were to fall significantly could reduce hydro electric generation.

A number of the key judgements underpinning the central forecast relate to the spending and investment behaviour of domestic consumers and businesses.

There is a risk that the central forecast has underestimated the strength of momentum in consumer demand. Spending on consumption items and housing has been strong recently, buoyed by a strong labour market, higher terms of trade and the wealth effects associated with increased house prices. These factors have contributed to a high level of consumer confidence and may have a longer lasting impact on consumer spending than is incorporated in the central forecast.

Implicit in the central forecast is the judgement that the continued accumulation of debt by households will act as a constraint on future private consumption growth. The ratio of debt to household income is at record high levels and despite a forecast slowing in consumption growth this ratio is expected to continue to increase over the forecast period. A key uncertainty in the economic outlook is around households' willingness to continue to expand debt further and the impact of higher debt servicing costs. Should the debt constraint not impinge as strongly on the spending decisions of households then there is likely to be upside risk to household spending on consumption items and residential investment. Alternatively, a more substantial attempt by households at debt consolidation would pose downside risk. One of the scenarios in the subsequent section considers how the economy might develop if the current strength in household expenditure was to persist for longer than factored into the central forecast.

The international backdrop is still important

For a small open economy like New Zealand, developments in the world economy are important drivers of domestic activity, through the impact on both the prices and volumes of exports and imports, and through interest rates and confidence. Chapter 1 outlined the *Consensus* forecasts for trading partner growth that underpin the central forecast. Recently *Consensus* forecasts of global growth for 2005 have been fairly constant albeit with slight downward revisions since mid 2004. Overall the outlook for the world economy remains solid, although growth is expected to be slower than over the past 12 months.

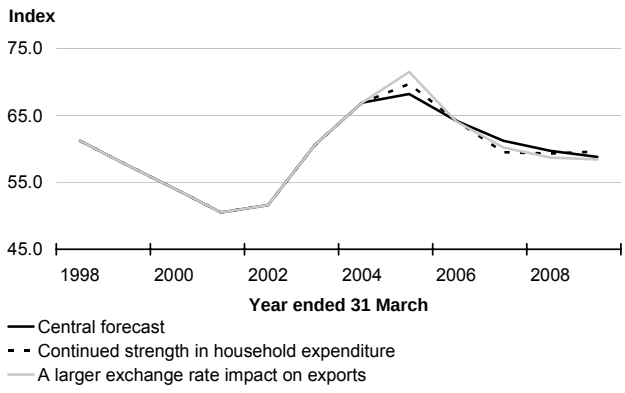
World prices for a number of the commodities that New Zealand exports are at or near record highs. Under the central forecast the world prices for New Zealand's exports are expected to decline over 2005. The current strength in world prices is both due to strong world demand from a buoyant world economy as well as supply side factors that are constraining supply in agricultural markets. Supply side factors include climatic factors in parts of Australia and the United States which have limited the production of dairy and beef. Lamb production in the United Kingdom has still not recovered from the impact of the foot and mouth outbreak in 2001, while the United States has restricted beef imports from Canada following a case of BSE there in 2003. Some on-going support to meat prices, particularly lamb, is built into the central forecast. However, should supply conditions continue to affect production in other countries and markets, world prices for such commodities may remain higher than is incorporated in the central forecast with the result of higher than expected incomes for New Zealand's agricultural producers.

There are also some downside risks to the global outlook. If oil prices were to increase significantly then world growth is likely to be negatively affected. A study by the International Energy Agency suggests that a sustained increase in oil prices of $US10 per barrel would subtract around 0.5% from world growth in the first year following the price increase.

In addition to concerns around oil prices, 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. Any further weakening of the US dollar as part of this adjustment process could lead to a further appreciation of the New Zealand dollar, with a subsequent impact on New Zealand's economic outlook.

How the recent high level of the exchange rate impacts on the future performance of the economy, as well as the future path of the exchange rate are key judgements for the forecasts. 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. There is a risk that the exchange rate may have a larger negative impact on export volumes than is incorporated in the central forecast as well as the possibility of a further appreciation in the exchange rate. Such a 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 "Continued strength in household expenditure", stronger consumption and residential investment growth raises real GDP growth in the near term. The second scenario, labelled "A larger exchange rate impact on exports", shows the impact on GDP growth if a higher exchange rate has a more detrimental impact on export volumes. 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

	2004 Actual	2005 Forecast	2006 Forecast	2007 Forecast	2008 Forecast	2009 Forecast
Production GDP (annual average % change, year ending 31 March)						
Central forecast	3.6	4.7	2.4	2.6	3.1	3.0
Continued strength in household expenditure	3.6	5.2	2.8	2.4	3.0	2.8
A larger exchange rate impact on exports	3.6	4.5	1.3	3.9	3.5	3.0
Nominal Expenditure GDP (annual average % change, year ending 31 March)						
Central forecast	6.2	8.2	4.2	3.3	4.7	5.0
Continued strength in household expenditure	6.2	8.8	5.2	3.4	4.7	4.9
A larger exchange rate impact on exports	6.2	8.0	3.0	3.6	4.8	5.0
OBERAC ($ billion, year ending June)						
Central forecast	6.6	6.5	6.2	5.3	4.9	5.4
Continued strength in household expenditure	6.6	6.8	7.0	6.0	5.4	5.9
A larger exchange rate impact on exports	6.6	6.1	5.6	5.1	4.6	5.2

Sources: Statistics New Zealand, The Treasury

Continued strength in household expenditure

In the central forecast a significant slowing in household expenditure growth is a major driver of the slowdown in real GDP, with residential investment growth turning negative and private consumption slowing considerably. This scenario considers what may happen if households were to continue with a higher level of spending than is factored into the central forecast. Household debt would therefore grow more rapidly than in the central forecast. In this scenario real GDP growth is stronger over the years to March 2005 and 2006 due to both stronger private consumption and residential investment growth relative to the central forecast.

The strong state of the labour market and intense competition by banks diluting the impact of interest rate rises are possible reasons why consumers may continue their momentum in spending. Increased demand for imports offsets some of the increased domestic demand. However, in aggregate, current capacity constraints are intensified with the unemployment rate falling to 3.5%.

Table 3.2 – Continued strength in household expenditure

(Annual average % change, Year ending 31 March)	2004 Actual	2005 Forecast	2006 Forecast	2007 Forecast	2008 Forecast	2009 Forecast
Private consumption	5.3	6.1	3.7	1.5	1.7	3.1
Residential investment	15.8	17.3	2.1	-8.7	-4.4	-1.1
Business investment	12.5	15.3	4.9	0.1	3.0	3.7
Gross national expenditure	6.7	8.0	3.8	1.0	1.8	3.0
Exports of goods and services	0.8	5.5	4.1	6.3	4.4	2.6
Imports of goods and services	11.0	14.2	7.4	2.5	0.6	3.1
GDP (production measure)	**3.6**	**5.2**	**2.8**	**2.4**	**3.0**	**2.8**
Employment growth	2.9	3.3	1.2	1.4	1.3	0.7
Unemployment rate[1]	4.2	3.5	3.7	3.6	4.0	4.4
90-day bank bill rate[2]	5.5	7.0	6.8	6.1	5.9	5.7
TWI[2]	66.9	69.7	64.2	59.5	59.3	59.6
CPI[3]	1.5	3.0	3.4	2.7	2.3	2.1
Current account balance (% GDP)	-4.4	-5.6	-6.7	-6.7	-5.8	-5.8
Nominal GDP (expenditure measure)	6.2	8.8	5.2	3.4	4.7	4.9

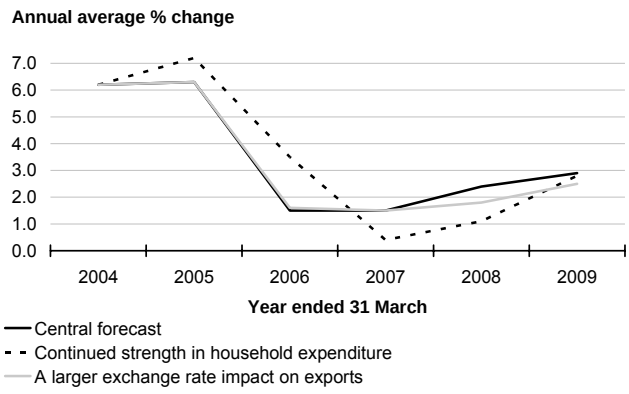
Sources: Statistics New Zealand, Reserve Bank of New Zealand, The Treasury

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

With increased pressure on resources, inflationary pressures intensify resulting in a tightening of monetary policy with interest rates remaining above the central forecast for the majority of the forecast period. Despite the tightening, CPI inflation is higher than the central forecast from the beginning of 2005.

Increased domestic demand results in firms increasing their employment, with employment growth being above the central forecast until the final year. This means that the unemployment rate remains below 4% for the next 3 years. In the near future, firms also increase their business investment; however given higher interest rates this reaction is quite modest.

Figure 3.3 – Growth in private consumption and residential investment



Source: The Treasury

Some of the higher consumption will be met from imports. Higher import volume growth relative to the central forecast drives the current account to a more negative position. The current account deficit approaches 7% of GDP midway through 2006. This contributes to a depreciation of the exchange rate with the TWI falling below the central forecast level between 2006 and 2008.

By the years to March 2007 and 2008 the greater momentum in domestic demand has run its course and growth falls below the central forecast. Contributing to this are higher interest rates and a lower exchange rate pushing up the price of imported goods which constrains household spending. This contributes to GDP growth falling below the central forecast in the year to March 2007 and remaining at or below the central forecast rate for the remainder of the forecast period.

The lower exchange rate also provides some relief to exporters with export volume growth in the year to March 2007 being nearly 1% higher than the central forecast, providing some offset to falling domestic demand growth in this period.

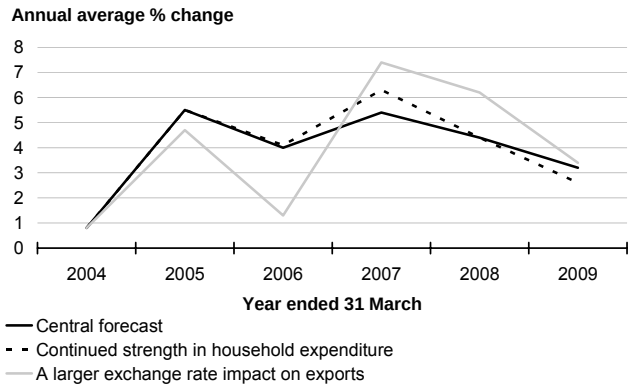
By the end of the forecast period the gap between real economic activity in this scenario and in the central forecast is closing, with the level of real GDP still around $300 million higher than in the central forecast. The effect of the price level shock accumulates so that by the end of the forecast period nominal GDP is around $2.5 billion higher than in the central forecast. This increases the size of the OBERAC.

A larger exchange rate impact on exports

This scenario illustrates the impact of the exchange rate appreciating further, combined with a greater lagged effect on exports of the recent exchange rate appreciation. Export growth is lower than the central forecast from the beginning of 2005 through to early 2006.

The continued appreciation of the exchange rate, coupled with a larger negative impact on export volumes than in the central forecast, constrains growth in export volumes. This contributes to GDP growth falling to 1.3% in the year to March 2006.

Figure 3.4 – Exports



Source: The Treasury

The exchange rate reaches a high of just under 72 on a TWI basis. As well as constraining export growth in the years to March 2005 and particularly in the year to March 2006, the higher exchange rate encourages increased import volumes in the year to March 2006. This contributes to the current account deficit becoming larger, reaching 7.1% of GDP in the year to March 2006.

With production growing less strongly than under the central forecast, there is less demand for labour with the consequence that employment growth is around 1% lower in the year to March 2006. This contributes to the unemployment rate increasing to 5% by the end of the 2006 March year. Capacity constraints also ease, contributing to significantly lower inflationary

pressure and enabling interest rates to fall relative to the central forecast. By the end of 2005 interest rates are around 50 basis points lower than in the central forecast.

A smaller interest rate differential with the rest of the world and the larger deficit on the current account results in the exchange rate depreciating so that by early 2006 the exchange rate is below its level in the central forecast. This helps drive a recovery in net exports with export growth recovering to 7.4% in the year to March 2007, while at the same time the exchange rate depreciation makes imports more expensive causing import growth to slow.

The recovery in exports also contributes to higher business investment growth in the year to March 2007 than in the central forecast; however relative to recent investment growth this is still relatively muted.

Table 3.3 – A larger exchange rate impact on exports

(Annual average % change, Year ending 31 March)	**2004 Actual**	**2005 Forecast**	**2006 Forecast**	**2007 Forecast**	**2008 Forecast**	**2009 Forecast**
Private consumption	5.3	5.5	2.5	2.0	2.1	2.8
Residential investment	15.8	14.3	-6.2	-2.6	-0.9	-1.4
Business investment	12.5	15.2	4.9	2.7	1.5	2.6
Gross national expenditure	6.7	7.4	2.6	2.2	2.0	2.7
Exports of goods and services	0.8	4.7	1.3	7.4	6.2	3.4
Imports of goods and services	11.0	13.7	5.1	2.7	1.8	2.4
GDP (production measure)	**3.6**	**4.5**	**1.3**	**3.9**	**3.5**	**3.0**
Employment growth	2.9	3.3	-0.1	0.4	1.7	1.4
Unemployment rate[1]	4.2	3.6	5.0	4.7	4.5	4.6
90-day bank bill rate[2]	5.5	6.8	5.9	5.9	6.0	5.8
TWI[2]	66.9	71.5	64.1	60.2	58.7	58.4
CPI[3]	1.5	2.8	2.2	1.7	2.2	2.1
Current account balance (% GDP)	-4.4	-5.7	-7.1	-6.7	-5.7	-5.2
Nominal GDP (expenditure measure)	6.2	8.0	3.0	3.6	4.8	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.

In this scenario, the level of real GDP at the end of the forecast period is broadly similar to the level in the central forecast. The price-level shock is permanent, so nominal GDP is around $2 billion lower at the end of the forecast period. This results in a lower OBERAC.

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

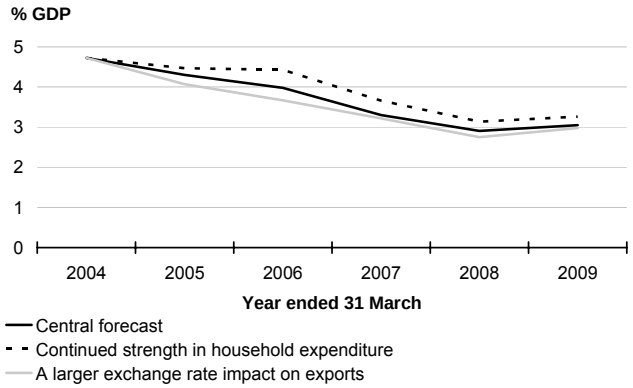
Year ending 30 June	2004 Actual	2005 Forecast	2006 Forecast	2007 Forecast	2008 Forecast	2009 Forecast
OBERAC ($ billion)						
Central forecast	6.6	6.5	6.2	5.3	4.9	5.4
Continued strength in household expenditure	6.6	6.8	7.0	6.0	5.4	5.9
A larger exchange rate impact on exports	6.6	6.1	5.6	5.1	4.6	5.2
Gross sovereign-issued debt ($ b)						
Central forecast	35.5	33.8	33.4	32.9	34.1	34.9
Continued strength in household expenditure	35.5	33.5	32.3	31.1	31.8	32.2
A larger exchange rate impact on exports	35.5	34.2	34.4	34.0	35.5	36.6
OBERAC (% GDP)						
Central forecast	4.7	4.3	4.0	3.3	2.9	3.0
Continued strength in household expenditure	4.7	4.5	4.4	3.7	3.1	3.3
A larger exchange rate impact on exports	4.7	4.1	3.7	3.2	2.7	3.0
Gross sovereign-issued debt (% GDP)						
Central forecast	25.3	22.5	21.4	20.4	20.1	19.6
Continued strength in household expenditure	25.3	22.1	20.4	19.0	18.5	17.9
A larger exchange rate impact on exports	25.3	22.9	22.4	21.3	21.2	20.8

Sources: Statistics New Zealand, The Treasury

The increase to GDP, from the central forecast, in the "Continued strength in household expenditure" scenario is greater in magnitude than the decrease under the "A larger exchange rate impact on exports" scenario. Consequently the impacts on the key fiscal indicators are greater under the "higher GDP" scenario.

In the "Continued strength in household expenditure" scenario the OBERAC is above the central forecast value in every year of the forecast. Stronger GDP growth results in increased tax revenue. While expenses also increase, largely due to a higher labour cost component and the impact of stronger inflation on benefit indexation, the lift in tax revenue is more than enough to offset the increased expenditure.

Figure 3.5 – OBERAC

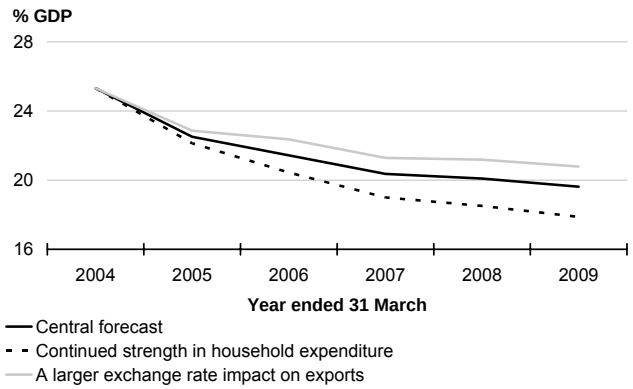


Source: The Treasury

By contrast the OBERAC track for the "A larger exchange rate impact on exports" scenario runs below that of the central forecast. Weaker GDP growth than under the central forecast track leads to reduced tax revenue, but lower wage growth and less inflation provides some offset in the form of lower expenses. While the impact on taxes remains relatively constant across the forecast period, the magnitude of the reduction in expenses grows, mainly because the decrease in labour costs is more significant under this scenario. As a result the gap between the OBERAC track of this scenario and that of the central forecast tends to close towards the end of the forecast period. By this stage, what remains of the gap is as much due to higher finance costs on an increased debt stock as it is to the difference between the contrasting impacts on tax and non-finance cost expenditure.

Higher operating balances in every year of the forecast track, under the "Continued strength in household expenditure" scenario, lead to reduced borrowing in every year. While the interest rate applied to debt is not significantly different under the scenario to that in the central forecast, debt financing costs still reduce due to the lower level of debt. These two factors produce a cumulative effect in decreasing gross sovereign-issued debt (GSID) over the forecast horizon.

Figure 3.6 – Gross sovereign-issued debt



Source: The Treasury

The opposite effects apply in driving the GSID track of the "A larger exchange rate impact on exports" scenario above that of the central forecast. Lower operating balances result in higher borrowing requirements, which increase debt. As the reductions in the OBERAC from the central forecast were not as large as the increases were in the "Continued strength in household expenditure" scenario, the increases in GSID are also of a smaller magnitude than the reductions seen in the other scenario.

Fiscal Sensitivities

The scenarios above indicate 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) Year ending 30 June	**2005**	**2006**	**2007**	**2008**	**2009**
	Forecast	**Forecast**	**Forecast**	**Forecast**	**Forecast**
1% Lower Nominal GDP Growth per Annum					
Revenue	(430)	(905)	(1,410)	(1,965)	(2,555)
Expenses (mainly debt servicing)	15	55	120	225	360
Impact on the Operating Balance	**(445)**	**(960)**	**(1,530)**	**(2,190)**	**(2,915)**
Revenue Impact of a 1% Decrease in the Growth Rates of:					
Wages and salaries	(185)	(400)	(625)	(875)	(1,145)
Taxable business profits	(95)	(220)	(350)	(490)	(650)
One Percentage Point Lower Interest Rates					
Interest income	(15)	(28)	(38)	(48)	(57)
Expenses	(72)	(154)	(202)	(236)	(236)
Impact on the Operating Balance	**57**	**126**	**164**	**188**	**179**
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 to the New Zealand Superannuation (NZS) Fund 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**	**Effect on Net Return After Tax**	**Effect on Capital Contribution ($ billion, year ending 30 June)**			
	(%age points)	(%age points)	**2006**	**2007**	**2008**	**2009**
Expected gross rate of return	-1%	-0.67%	+0.170	+0.180	+0.195	+0.210

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