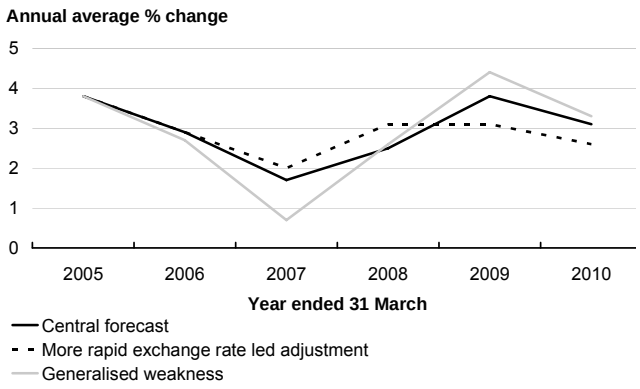
3

Risks and Scenarios

Summary

- The *Half Year Update* forecasts reflect a number of judgements about how the economy is likely to develop. If actual events evolve differently from these judgements, the economy could take an alternative path to that of our central forecast, with consequential impacts on the fiscal outlook.
- The central forecast presented in the Economic and Tax Outlook chapter shows an economy that is expected to continue slowing over the next two years before rebounding in the year to March 2008. Whether the economy develops as forecasts depends on how different factors evolve. This chapter explores what is likely to happen to economic and fiscal outcomes if some of the factors evolve differently.

Figure 3.1 - Real GDP



Source: The Treasury

- Although we place greatest weight on the economy evolving in a manner consistent with the central forecast presented in the Economic and Tax Outlook chapter, we present two scenarios in the second part of this chapter which illustrate alternative paths. These are just two of a number of possible outcomes and therefore do not fully illustrate the full range of possible outcomes.
- The first scenario shows the evolution of the economy in the event that there is a more rapid depreciation of the exchange rate. This scenario results in a period of higher economic growth than outlined in the central forecast and permanently raises nominal GDP, improving the fiscal position. The second scenario illustrates generalised weakness where households reduce spending relative to the central forecast and exports are also weaker. It shows a temporary reduction in real GDP but permanently lower nominal GDP, which results in a deterioration of the fiscal position.

Introduction

The central forecast, as set out in the Economic and Tax Outlook chapter, reflects the balancing of 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 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. The first part of this chapter, Economic Risks, outlines some of the risks around the economic outlook. There are both upside and downside risks – some domestically and some internationally oriented.

The second part of this chapter, Economic Scenarios, presents in more detail two scenarios that could develop.

Economic Risks

Domestically oriented risks

Businesses have been facing inflationary pressures in the form of rising inputs and capital costs, as well as higher labour costs. This has been reflected in declining margins and weaker business confidence. Profits are expected to fall in 2007. One of the key judgements underpinning the central forecast is that the response to weak profits is relatively muted due to strong corporate balance sheets. There is a risk that if significant upward pressure on costs were to continue, the squeeze on business sector margins would be even greater. This would feed through into lower business sector investment and employment than outlined in the central forecasts.

In contrast to a business sector under pressure, household consumption has been strong. The Economic and Tax Outlook chapter highlighted that private consumption growth is expected to decline in line with a slowing labour market, higher effective mortgage rates, and a reduction in the positive wealth effects associated with slowing house price growth. There is a risk that the expected downward adjustment in house prices will be more abrupt than expected in the central forecast. It is also possible that the likely negative wealth effect associated with this adjustment will have a greater than expected impact on household expenditure. Both these potential outcomes could result in lower consumption growth. The longer households continue to spend more than they earn, the greater the likelihood of a more severe adjustment in the future.

If the economy does not slow as expected and domestic inflation is higher than currently forecast, interest rates may rise higher than expected. This would also be likely to impact negatively on household expenditure in the medium term. One of the scenarios in the following section of this chapter considers how the economy might evolve if the current strength in household expenditure were to dissipate faster and more deeply than expected in the central forecast.

The strong labour market, which has been a key feature of the recent economic expansion, is expected to soften over the course of the next two years. There is a risk to the central forecast that strong employment and wage growth continues for longer than expected. If employment growth were to continue - amplifying difficulties in finding labour - wage pressures may be stronger than expected. This would have flow-on impacts for household spending through higher incomes and increased confidence and potentially increased inflationary pressure, or alternatively it would provide more room for debt consolidation.

Net migration has had a significant impact on New Zealand population growth in recent years which has relevance for the size of the workforce as well as demand for goods and services. In the central forecast net migration inflows are assumed to be 7,000 in the year to March 2006, then hold steady at 10,000 people a year for the rest of the forecast period. There is a risk that as employment growth slows and the economy weakens, net migration will be lower than forecast or even turn negative. This would result in lower domestic demand than built into the central forecast. Alternatively an increase in net migration will provide a boost to economic demand.

Climatic conditions are an important influence on agricultural-related production in New Zealand. According to the National Institute of Water and Atmospheric Research (NIWA), over the next three months from November, rainfall is likely to be near normal in all regions, except in the east of the North Island where it may be below normal. A more severe outcome with drier conditions than predicted could have a detrimental impact on agricultural production and hydro electric generation.

A reasonably weak dairy season is built into the central forecast. If dairy production is higher than forecast this is likely to have a positive impact on exports as well as domestic consumption as rural incomes are given a boost.

Internationally oriented risks

Developments in the world economy are important drivers of economic activity in New Zealand through the impact on both the prices and volumes of exports and imports, and through interest rates and confidence. Over the next year, steady economic growth for New Zealand's largest trading partners is expected. If world economic growth were to slow, New Zealand's export volumes and prices could fall faster than forecast and economic growth would slow accordingly. China is expected to remain a significant driver of world economic growth over the forecast period and the New Zealand economy is exposed to a risk of a slowdown in demand from China.

The future path of the exchange rate and how it impacts on the future performance of the economy is a key judgement of the forecasts. The central forecast sees the New Zealand dollar depreciating over the forecast period from around 71 on the TWI to settle at 58.5. There is a lot of uncertainty around the timing and extent of the expected depreciation which will affect the economic outlook largely through the resultant growth in exports as well as the level of tradables inflation. The New Zealand dollar is susceptible to a variety of factors. For example if New Zealand's large current account deficit causes overseas investors to lose confidence, it could fall further and faster than set out in the central scenario. Such a scenario is explored further later in the chapter.

Uncertainties around how the sizeable US current account and fiscal deficits may impact on global exchange rates are also a factor. If the US dollar were to weaken further in response to the twin deficits, the New Zealand dollar might appreciate with a subsequent impact on New Zealand's economic outlook. In particular, there would be a greater negative impact on export volumes and on the receipts of exporters than built into the central forecast.

The high level of the terms of trade, largely driven by the record high commodity prices recently recorded for some agricultural commodities, has been one of the key contributors to growth over the past couple of years. The high prices have been due to strong world demand and some temporary supply issues including lower lamb production in the UK after the 2001 foot and mouth outbreak, the effect of the BSE scare on Canadian and US beef

exports and the drought in Australia. Some of the agricultural commodity prices are forecast to fall over the forecast period as supply returns to normal and world growth weakens. If some of these tight supply conditions were to continue, world prices of these commodities may hold up for longer, resulting in higher than expected incomes for agricultural producers. On the other hand, if supply were to return to normal more quickly than expected, for example if US beef were accepted back into Asia earlier than expected, or if world growth were to slow faster than thought, it would pose some downside risk to the central forecast.

Another factor that poses risk to the global outlook and the terms of trade is the recent volatility in oil prices. Between January and September 2005 oil prices increased 67%. They have since fallen 15%. If prices were to reverse their recent fall and increase significantly, world growth would most likely be negatively affected. Conversely, if they were to fall faster than our forecast, New Zealand's terms of trade would most likely stay higher than forecast.

The outcome of the current Doha Development Round of international trade negotiations is as yet unknown. Therefore its effects are not factored into this forecast. A successful round could raise the relative prices and volumes for some exports towards the end of the forecast period. A failure could lead to some turbulence in international trading arrangements. An intermediate outcome, with smaller price and volume effects, is also possible.

The World Health Organisation (WHO) and other health authorities have warned of the risk of an influenza pandemic with the emergence and spread of a highly pathogenic strain of avian influenza, H5N1. The continued spread of avian influenza (as an animal disease, rather than human disease) may itself pose some risks to our forecasts through its impact on trading partners and possible risks to the poultry industry in New Zealand. Moreover, the risk of a pandemic may itself have some impact on international travel, tourism, and trade in services. Finally, while the likelihood of a pandemic, and its severity should it occur, is unknown, it is clear that a serious pandemic would have major human, social and economic costs.

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.

1. Generalised weakness - a harder landing scenario - This scenario involves households reducing their spending relative to the central forecast and exports also being weaker.

2. More rapid exchange rate led adjustment - This scenario illustrates the implications for the economy if the exchange rate depreciates more rapidly than in the central scenario.

The scenarios are two of a large number of possible outcomes, and do not represent upper or lower bounds for the central forecast, with more extreme paths being possible.

Table 3.1 – Alternative scenarios: summary

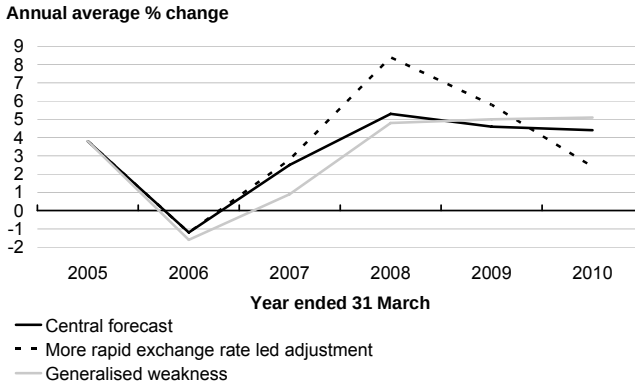
	2005 Actual	2006 Forecast	2007 Forecast	2008 Forecast	2009 Forecast	2010 Forecast
Production GDP (annual average % change, year ending 31 March)						
Central forecast	3.8	2.9	1.7	2.5	3.8	3.1
Generalised weakness	3.8	2.7	0.7	2.6	4.4	3.3
More rapid exchange rate led adjustment	3.8	2.9	2.0	3.1	3.1	2.6
Nominal Expenditure GDP (annual average % change, year ending 31 March)						
Central forecast	7.5	5.6	2.9	3.7	5.2	5.1
Generalised weakness	7.5	5.4	1.5	2.9	5.2	5.0
More rapid exchange rate led adjustment	7.5	5.5	2.7	5.2	5.4	5.0
OBERAC ($ billion, year ending June)						
Central forecast	8.9	5.9	5.9	4.1	3.4	5.1
Generalised weakness	8.9	5.8	4.9	2.4	2.0	3.8
More rapid exchange rate led adjustment	8.9	6.0	6.1	4.5	3.5	5.2

Sources: Statistics New Zealand, the Treasury

Generalised weakness – a harder landing scenario

The generalised weakness scenario illustrates an alternative path for the economy in the event that households reduce spending relative to the central forecast and exports are also weaker. Lower household spending on both consumption items and housing could occur due to households displaying a greater responsiveness to interest rates and debt levels than is incorporated in the central forecast. Weaker export growth could stem from the recent high level of the exchange rate having a larger negative impact on export volumes than is incorporated in the central forecast or could reflect weaker agricultural production or weaker trading partner growth.

Figure 3.2 – Total exports



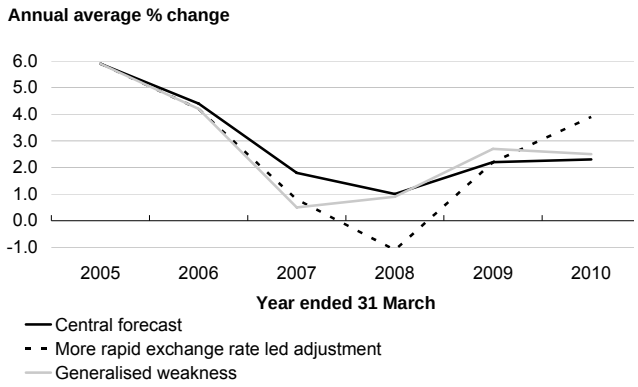
Source: The Treasury

In the central forecast, real GDP growth is expected to slow over the course of 2006 to 1.7% in the year to March 2007 and 2.5% in the year to March 2008. In this scenario, growth is slightly lower in the 2006 March year as household concern about debt levels and the associated servicing costs sees them begin to reduce their rate of expenditure growth. The trough in real GDP growth in the year to March 2007 is deeper with growth slowing to 0.7% prior to stronger growth in the year to March 2009 of 4.4% as households and businesses respond to lower interest rates.

Under this scenario, private consumption growth is particularly weak in the year to March 2007 with growth of only 0.5%. In addition residential investment is a little weaker than the central forecast, contracting 11.3% in the 2007 March year. The impact of the recent high level of the exchange rate has a longer-lasting impact on export volumes making the recovery in export volumes in the March 2007 year weaker than in the central forecast.

With slower domestic demand and falling demand for New Zealand exports, businesses cut back on employment plans and annual average employment growth falls to 0.1% in each of the 2007 and 2008 March years, pushing the unemployment rate to 4.8% by the end of the forecast period. With weaker demand pressures and a less-tight labour market, both general price and wage inflation are lower than in the central forecast.

Figure 3.3 – Private consumption



Source: The Treasury

With less inflationary pressure, an easing in monetary policy is possible with 90-day bill rates lower from the end of 2006. Lower interest rates eventually encourage households to increase their spending growth and also contribute to stronger residential and business investment growth in the March 2009 year relative to the central forecast.

Under the generalised weakness scenario, the negative impact of lower exports on the current account more than offsets the lower demand for imports stemming from weaker domestic demand, resulting in a slight widening of the current account deficit relative to the central forecast.

Table 3.2 – Generalised weakness

(Annual average % change, Year ending 31 March)	2005 Actual	2006 Forecast	2007 Forecast	2008 Forecast	2009 Forecast	2010 Forecast
Private consumption	5.9	4.2	0.5	0.9	2.7	2.5
Residential investment	2.0	-4.4	-11.3	-2.5	8.9	5.9
Business investment	12.9	11.1	-1.7	0.2	4.9	3.7
Gross national expenditure	6.8	5.6	0.0	1.0	3.5	2.7
Exports of goods and services	3.8	-1.6	0.9	4.8	5.0	5.1
Imports of goods and services	12.9	7.7	-0.2	-0.6	2.5	3.4
GDP (production measure)	3.8	2.7	0.7	2.6	4.4	3.3
Employment growth	3.6	2.8	0.1	0.1	1.0	1.4
Unemployment rate[1]	3.9	3.4	4.1	4.6	4.7	4.8
90-day bank bill rate[2]	6.9	7.5	5.8	5.5	5.5	5.5
TWI[2]	69.6	67.8	61.3	59.6	59.2	59.1
CPI[3]	2.8	3.4	2.6	1.5	1.7	1.8
Current account balance (% GDP)	-7.4	-9.2	-8.7	-7.4	-6.7	-5.9
Nominal GDP (expenditure measure)	7.5	5.4	1.5	2.9	5.2	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.

By the end of the forecast period real economic activity is around $450 million lower than the central forecast. The effect of the lower price inflation accumulates so that by the end of the forecast period, nominal GDP is approximately $4.6 billion lower than in the central forecast. This has a negative impact on the size of the OBERAC.

More rapid exchange rate led adjustment

This scenario illustrates a possible path for the economy if the exchange rate were to depreciate more rapidly and reach a lower trough than is incorporated in the central forecast. Such a scenario would have implications for the manner in which imbalances in the economy unwind.

Table 3.3 – More rapid exchange rate led adjustment

(Annual average % change, year ending 31 March)	**2005 Actual**	**2006 Forecast**	**2007 Forecast**	**2008 Forecast**	**2009 Forecast**	**2010 Forecast**
Private consumption	5.9	4.2	0.8	-1.1	2.2	3.9
Residential investment	2.0	-4.4	-11.6	-6.5	-0.1	8.6
Business investment	12.9	11.1	-2.0	-2.3	3.1	6.1
Gross national expenditure	6.8	5.7	0.1	-0.7	2.6	4
Exports of goods and services	3.8	-1.2	2.8	8.4	5.8	2.4
Imports of goods and services	12.9	7.7	-1.7	-3.9	4.3	6.5
GDP (production measure)	3.8	2.9	2.0	3.1	3.1	2.6
Employment growth	3.6	2.8	0.4	1.3	0.8	0.8
Unemployment rate[1]	3.9	3.4	3.6	4.0	4.3	4.8
90-day bank bill rate[2]	6.9	7.5	8.2	7.3	5.9	5.3
TWI[2]	69.6	67.8	49.9	54.6	58.6	59.8
CPI[3]	2.8	3.4	3.2	3.1	3.0	2.2
Current account balance (% GDP)	-7.4	-9.1	-7.7	-3.6	-3.3	-4.3
Nominal GDP (expenditure measure)	7.5	5.5	2.7	5.2	5.4	5.0

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

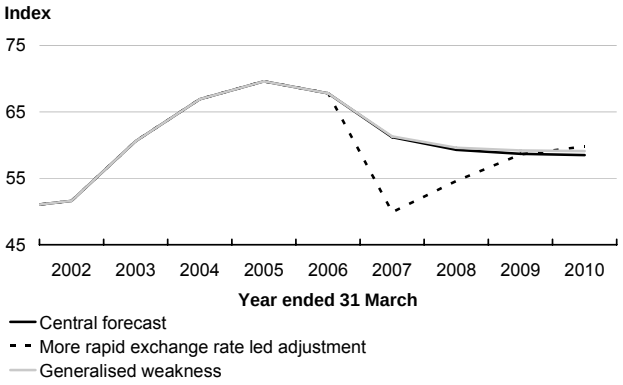
NOTES: 1 Percentage of labour force, March quarter, seasonally adjusted.
2 Average for March quarter.
3 Annual percentage change, March quarter.

The Economic and Tax Outlook chapter highlighted that recent economic developments have led to the build up of imbalances in the economy. This has been due to a relatively unbalanced growth profile in which the strength in domestic demand has dominated overall growth. Exchange rate developments are likely to play an important role in the manner in which these imbalances are unwound and a more balanced growth profile achieved. Under the central forecast the New Zealand dollar is expected to fall over the forecast period. It is currently at a historically high level and imbalances in the economy, such as the present size of the current account deficit, pose a risk that the exchange rate could fall more quickly than assumed. When sentiment related to a currency turns negative, previous experience suggests that depreciation can be rapid.

In this scenario the exchange rate falls more rapidly in the first half of calendar 2006 and remains lower than the central track until the beginning of the 2009 calendar year.

The high exchange rate has contributed to increased demand for imported goods and services by both consumers and businesses. The lower exchange rate under this scenario makes such imports more expensive, contributing to lower consumption and investment growth relative to the central forecast until the final year of the forecast when the exchange rate returns to the central forecast level.

Figure 3.4 Trade weighted index



Source: The Treasury

Tradable inflation rises rapidly as import prices increase. Monetary policy reacts to dampen the higher inflation and the associated interest rate increases also contribute to slower growth in consumption as well as slower residential and business investment than was set out in the central scenario. Despite tighter monetary policy, higher inflation relative to the central forecast persists over the 2008 and 2009 March years.

Under this scenario the depreciation is more rapid than in the central forecast with the TWI falling 26% between March 2006 and March 2007. The exchange rate depreciation increases the competitiveness of our exporters with export growth stronger than the central forecast. In this scenario it is assumed that export growth exhibits quite a rapid response to the large depreciation in the exchange rate. This is likely to be the case in sectors such as tourism and potentially forestry, however the response of some types of manufacturing may not be as rapid due to the relocation of some production lines offshore. This poses a risk that export growth may be more muted than is incorporated into this scenario. Under this scenario export growth is modestly stronger in the 2007 March year prior to being 3% higher than the central forecast in the 2008 March year with export volume growth of 8.4%.

The combination of stronger export growth and lower import demand results in a reduction in the current account deficit relative to the central forecast with the deficit falling below 8% of nominal GDP in the March 2007 year and below 4% in the following two years. The current account deficit ends the forecast period a little over 4% in 2010.

The aggregate impact of the shock on real GDP growth is relatively small with March year growth not varying from the central forecast by much more than ½% over the forecast period. However, the composition of growth is quite different. Real GDP growth is stronger in the March 2007 and 2008 years as a combination of higher exports and lower imports growth more than offset lower domestic demand growth. Domestic demand growth is particularly weak in 2008 with consumption growth just over 2% lower than the central forecast and residential and business investment lower by around 5% and 3% respectively. Real GDP growth is lower relative to the central forecast in the March 2009 and 2010 years as the stimulus to export growth from the lower exchange rate diminishes and import demand increases.

In this scenario, the level of real GDP at the end of the forecast period is around $500 million lower than the central forecast. However, the price-level shock is permanent, so nominal GDP is about $2.5 billion higher at the end of the forecast period. Higher nominal GDP will flow through to a higher nominal tax take. However, with higher inflation, it is likely that the Government would require higher nominal expenditure in order to maintain real service provision at a similar level to the central forecast.

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 in the determinant, the opposite impact applies for a decrease.

- Nominal GDP – higher 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 also increases, 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 an increase in 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 results in increased benefit costs. This reduces the operating balance and increases debt.

Table 3.4 – Alternative scenarios: OBERAC and gross debt

Year ending 30 June	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
	Actual	**Forecast**	**Forecast**	**Forecast**	**Forecast**	**Forecast**
OBERAC ($ billion)						
Central forecast	8.9	5.9	5.9	4.1	3.4	5.1
Generalised weakness	8.9	5.8	4.9	2.4	2.0	3.8
More rapid exchange rate led adjustment	8.9	6.0	6.1	4.5	3.5	5.2
Gross sovereign-issued debt ($ billion)						
Central forecast	35.0	33.3	33.0	35.7	36.1	36.2
Generalised weakness	35.0	33.4	34.0	38.5	40.2	41.7
More rapid exchange rate led adjustment	35.0	33.2	32.7	35.1	35.3	35.2
OBERAC (% GDP)						
Central forecast	5.9	3.7	3.6	2.4	1.9	2.7
Generalised weakness	5.9	3.7	3.1	1.4	1.2	2.1
More rapid exchange rate led adjustment	5.9	3.8	3.7	2.6	2.0	2.8
Gross sovereign-issued debt (% GDP)						
Central forecast	23.2	20.9	20.2	21.0	20.2	19.3
Generalised weakness	23.2	21.1	21.3	23.2	23.0	22.7
More rapid exchange rate led adjustment	23.2	20.9	20.1	20.4	19.5	18.5

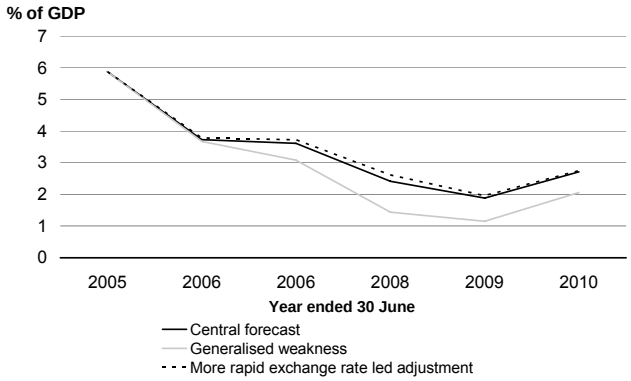
Sources: Statistics New Zealand, The Treasury

The generalised weakness scenario is characterised by lower nominal GDP, lower interest rates, a higher unemployment rate and lower inflation in comparison to the central forecast.

Lower nominal GDP and higher unemployment result in a decrease in taxes collected and an increase in benefit payments. Lower inflation results in a partial reduction in benefit payments and lower interest rates result in a reduction in debt servicing costs, but the overall impact of this scenario is a lower OBERAC and higher debt.

By 2007/08 the OBERAC is around half a percentage point of GDP lower than the central forecast and by the end of the period gross sovereign-issued debt (GSID) is around 3.5 percentage points of GDP higher than the central forecast.

Figure 3.5 – OBERAC

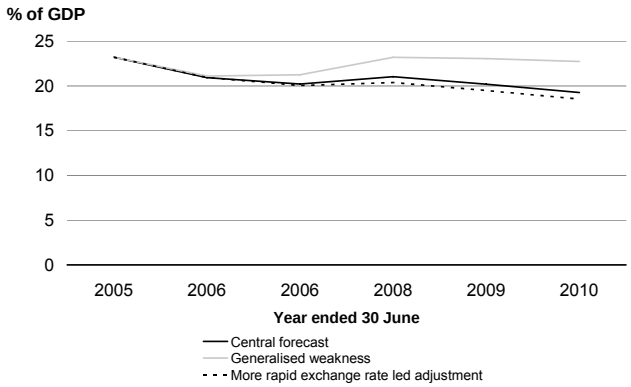


Source: The Treasury

The more rapid exchange rate led adjustment scenario is characterised by a more cyclical profile for unemployment and interest rates. Inflation is higher throughout the forecast period in comparison to the central forecast. Nominal GDP is higher than the central forecast for most of the forecast period.

Higher nominal GDP leads to higher tax revenue in the more rapid exchange rate led adjustment scenario, but higher interest rates and unemployment in the early part of the forecast also result in higher expenses. The overall impact of higher taxes and expenses is a small increase in the OBERAC by around 0.1 percentage points of GDP throughout most of the forecast period. The cumulative impact of having a higher OBERAC is a reduction in GSID by less than a percentage point of GDP by the end of the period compared to the central forecast.

Figure 3.6 – Gross sovereign-issued debt



Source: The Treasury

The net impact of generalised weakness scenario is much larger than the net impact of the more rapid exchange rate led adjustment 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) June years	2006 Forecast	2007 Forecast	2008 Forecast	2009 Forecast	2010 Forecast
1% Lower Nominal GDP Growth per Annum					
Revenue	(470)	(985)	(1,505)	(2,030)	(2,755)
Expenses (mainly debt servicing)	15	60	135	240	380
Impact on the Operating Balance	**(485)**	**(1,045)**	**(1,640)**	**(2,270)**	**(3,135)**
Revenue Impact of a 1% Decrease in the Growth Rates of:					
Wages and salaries	(205)	(430)	(670)	(935)	(1,225)
Taxable business profits	(110)	(250)	(385)	(520)	(725)
One Percentage Point Lower Interest Rates					
Interest income	(9)	(23)	(32)	(38)	(40)
Expenses	(75)	(161)	(199)	(225)	(263)
Impact on the Operating Balance	**66**	**138**	**167**	**187**	**223**
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 on 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) 2006/07	2007/08	2008/09	2009/10
Expected gross rate of return	-1%	-0.71%	+0.203	+0.218	+0.236	+0.255

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