3

Risks and Scenarios

Overview

There are a number of risks that surround any set of economic forecasts. If events were to develop differently from those embodied in the Central Forecast, the economy is likely to follow a different growth path. This has implications for the fiscal forecast, mainly because differences in the outlook for the economy alter the outlook for tax revenue and expenditure.

The first section of this chapter discusses several risks that could lead to different growth paths for the economy. The subsequent section then presents two alternative economic scenarios: a low growth scenario ("Weaker Domestic Demand and World Growth") and a high growth scenario ("Stronger Economic Recovery"). These scenarios are indicative examples and do not represent upper or lower bounds for the Central Forecast. The final section of this chapter considers the effect of the two alternative economic scenarios on key fiscal aggregates.

Economic Risks

The Central Forecast is determined by making a number of judgements and by balancing upside and downside risks facing the economy, to provide our best assessment of the way the economy is likely to evolve. It is almost inevitable that some of these judgements and risks will evolve differently from those underlying the Central Forecast. Depending on the magnitude and direction of these differences, this could result in different economic outcomes than those outlined in the Central Forecast.

At the current juncture, we see the main risks as being around:

- the evolution of business and consumer confidence and how quickly this translates into firm and household behaviour
- how stimulatory current monetary conditions are relative to historical experience
- future inflation developments following the current inflation spike
- a weaker world outlook over the medium term.

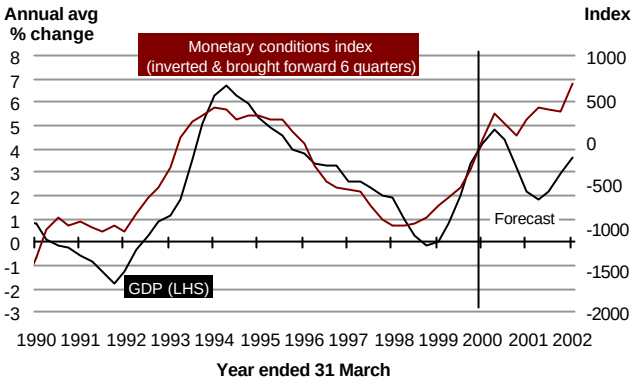
The Central Forecast is consistent with improving confidence levels throughout the remainder of 2000/01 and into 2001/02. However, such developments are inherently

difficult to predict. Furthermore, the link between movements in confidence and current and future activity is also far from precise.

If confidence were to remain weak or if past weakness were to feed more fully into activity than expected, then growth is likely to be weaker over the near-term than in our Central Forecast. Conversely, if confidence were to recover more sharply, and this translated more quickly into firms' hiring and investment decisions or into consumer spending, economic activity may recover more rapidly. We perceive that there are risks on both sides.

By historical standards, overall monetary conditions are at historically stimulatory levels. As is outlined in the Central Forecast, this is expected to bolster export activity, which in turn will provide a stimulus to the rest of the economy as export income flows through to domestic households and firms. However, there is some uncertainty as to the level of economic activity that will result from the current level of overall monetary conditions – much of which is derived from the low exchange rate. In the past, the present level of monetary conditions has been followed by strong recoveries in economic activity. Based on this historical relationship, economic activity may recover more sharply and to a greater extent than embodied in the Central Forecast.

Figure 3.1 – Monetary conditions and GDP growth



Sources: Statistics New Zealand, The Treasury

Inextricably linked to the degree of monetary stimulus, is the outlook for the TWI. Should we see a more sustained period of TWI weakness, both the profile and composition of growth going forward may differ from the Central Forecast. In addition, a more prolonged period of TWI weakness may require a different monetary policy response.

The Central Forecast assumes some second-round effects from the current inflation spike. Firms are forecast to recoup some of the margins lost this year, and some feed through is also built into wages. Combined, these lead to some inflation persistence requiring a tightening in monetary policy. The degree of second-round effects is a key uncertainty around the Central Forecast, and we can see both upside and downside risks. The assessment of these risks is further complicated by institutional changes in the labour market occurring at a time when the economy is experiencing a significant price shock. Greater or more muted second-round effects may lead to a different monetary policy response. In addition, differences in labour productivity growth could serve to mitigate or amplify these second-round effects.

A weaker world economy remains a distinct possibility. The prospect of this happening depends on whether or not oil prices stay higher for longer and if this has a more marked dampening effect on global activity. It is also dependent on whether or not the United States economy undergoes the widely discussed "soft landing". If the United States' economic growth were to slow much more sharply than portrayed in *Consensus* forecasts and this spills over into a global slowdown, the New Zealand economy faces the prospect of weaker economic activity going forward.

The growing season ending June 2000 was much improved compared to the previous two years of drought. The Central Forecast is based on slightly better-than-average growing conditions in the 2000/01 season. Such climatic variability poses an ongoing risk to the Central Forecast. Beyond the current growing season, the Central Forecast is based on what is considered to be an average growing season.

Finally, a key risk for the fiscal forecasts is the path of the nominal economy. Nominal GDP is forecast to grow very rapidly in 2001/02, as prices remain high at the same time as activity picks up. A weaker profile for either economic activity or prices may result in quite different outcomes for key fiscal aggregates.

Economic Scenarios

The following two scenarios provide examples of possible alternative growth paths for the economy if some of the key judgements just discussed were to develop differently than assumed in the Central Forecast. The first scenario illustrates a possible growth path for the economy if confidence remains weak for a more prolonged period of time – with this feeding into economic activity – and world growth slows more sharply than assumed. The second scenario considers a possible path for the economy where economic activity recovers more strongly, as the export stimulus flows more quickly through to the domestic economy. In addition, this recovery occurs in conjunction with more muted second-round effects following the current inflation spike. Furthermore, the economy exhibits stronger labour productivity growth during the upswing of the economic cycle.

Table 3.1 – Alternative scenarios: summary

	1999/00 Actual	2000/01 Forecast	2001/02 Forecast	2002/03 Forecast	2003/04 Forecast	2004/05 Forecast
Production GDP (Annual average % change, March years)						
Central Forecast	4.2	2.2	3.7	2.6	2.6	2.8
Weaker Domestic Demand and World Growth	4.2	1.9	2.9	1.9	2.8	4.2
Stronger Economic Recovery	4.2	2.8	4.7	2.1	2.3	2.6
Nominal expenditure GDP (Annual average % change, March years)						
Central Forecast	4.7	4.0	7.2	4.9	4.4	5.0
Weaker Domestic Demand and World Growth	4.7	3.7	6.2	3.4	4.2	6.6
Stronger Economic Recovery	4.7	4.7	9.0	5.1	4.1	4.5
Operating balance ($ billion, June years)						
Central Forecast	1.4	0.8	2.2	2.8	3.6	4.5
Weaker Domestic Demand and World Growth	1.4	0.5	1.7	1.5	2.3	3.8
Stronger Economic Recovery	1.4	1.2	3.3	4.0	4.7	5.4

Sources: Statistics New Zealand, The Treasury

Both scenarios consider alternative growth paths for the economy that occur predominantly because of changes that emanate from the demand side of the economy. While the nature of these changes means that the growth profile is different to the Central Forecast, the economy grows at around its estimated potential growth over the long run.

Weaker Domestic Demand and World Growth

In comparison with the Central Forecast, this scenario outlines a possible growth path for the economy resulting from a more prolonged period of weak consumer and business confidence – which feeds into near-term domestic activity – and by a faster and more significant slowing in world economic activity than outlined in *Consensus* forecasts. The latter is approximated by reducing annual export growth relative to the Central Forecast by 1.7% on average over the 2002-2004 period.

The combined effect of these two events is that economic growth is projected to slow to 2% in March 2001, recovering somewhat to 2.9% in March 2002, before the impact of a more rapid slowdown in world economic activity beginning in the second half of 2001 sees economic growth slow sharply to 1.9% in the year to March 2003. An extended period of stimulatory monetary conditions results in relatively strong economic activity over the final part of the forecast horizon.

Table 3.2 – Weaker Domestic Demand and World Growth

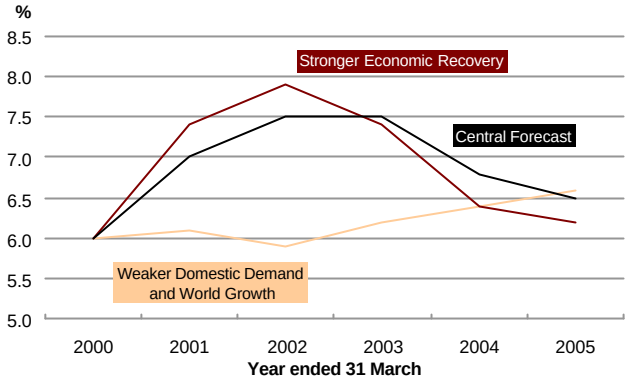
(Annual average % change, March years)	**1999/00 Actual**	**2000/01 Forecast**	**2001/02 Forecast**	**2002/03 Forecast**	**2003/04 Forecast**	**2004/05 Forecast**
Private consumption	2.6	0.9	1.1	1.9	3.1	3.4
Business investment excluding computers	6.4	1.6	-2.9	3.0	4.6	8.1
Gross national expenditure	6.3	0.3	2.7	3.7	5.3	6.0
Exports of goods and services	6.3	7.9	7.7	2.8	4.0	7.1
Imports of goods and services excluding computers	9.3	0.1	4.7	4.8	6.8	5.7
GDP (Production Measure)	**4.2**	**1.9**	**2.9**	**1.9**	**2.8**	**4.2**
Unemployment rate[1]	6.4	6.4	6.8	7.1	6.3	5.7
90-day rate[2]	6.0	6.1	5.9	6.2	6.4	6.6
TWI[2]	54.1	47.4	53.4	55.1	53.2	52.4
CPI[3]	1.5	3.6	1.8	1.3	1.6	2.2
Current account balance (% GDP)	(7.1)	(5.4)	(3.4)	(3.3)	(3.6)	(2.9)
Nominal GDP (Expenditure Measure)	4.7	3.7	6.2	3.4	4.2	6.6

Sources: Statistics New Zealand, Datastream, The Treasury

NOTES:
1 Percentage of labour force, March quarter, seasonally adjusted.
2 Average for March quarter.
3 This is the CPI-consistent series targeted by the Reserve Bank. Annual percentage change, March quarter.

A more prolonged period of weak confidence is reflected in near-term economic activity almost immediately. As a result of a more sustained period of weak confidence, households remain cautious for longer and pull back on their spending relative to the Central Forecast. Weaker income growth also provides less support for consumer spending. Firms' investment expenditure moderates and employment plans are scaled back, in what firms perceive to be a weaker economic environment. As a consequence, the unemployment rate increases during 2002 and 2003. The prospect of less inflation pressure in the future as a result of weaker domestic activity prompts the monetary authority to initially ease monetary policy.

Figure 3.2 – 90-day rate

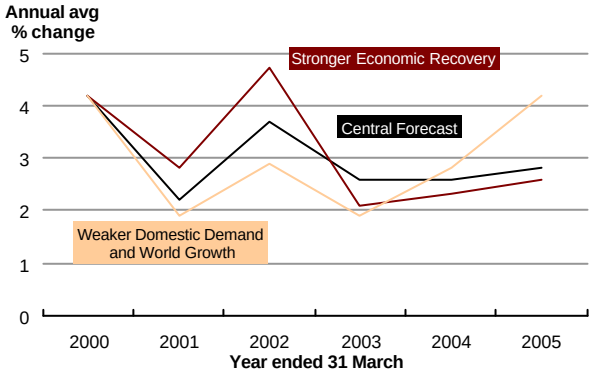


Sources: Statistics New Zealand, The Treasury

Despite weaker near-term activity, economic activity is expected to recover in the year to March 2002, although at a slower pace than in the Central Forecast. However, just as domestic activity begins to pickup some momentum, the slowdown in world growth begins to flow through to the economy. In this direction, weaker world growth beginning in the second half of 2001, leads to a slowing in growth of export volumes commencing in 2002. A weaker world also impacts on sentiment, leading to a reduction in household expenditure. To some extent the "world" shock modelled here is unanticipated, meaning that the monetary authority does not have time to fully offset the shock by easing monetary policy further. As a result, inflation falls below the middle of the target band, despite output falling below potential.

With the economy operating below its potential level over the first half of the projection period, relative to the Central Forecast monetary policy remains at more stimulatory levels for longer. This prolonged period of stimulatory monetary conditions has the effect of boosting activity – particularly investment activity – during the last two years of the forecast horizon.

Figure 3.3 – Real GDP growth



Sources: Statistics New Zealand, The Treasury

Developments in this scenario result in a lower current account deficit over the first two years of the projection relative to the Central Forecast. By March 2005, the current account deficit stands at 2.9% of GDP.

Under these assumptions the greatest deviation in the nominal economy between this scenario and the Central Forecast is reached in March 2004, where the nominal economy is around $3.9 billion lower. Around $1.6 billion of this $3.9 billion is because of weaker activity, with the remainder due to lower inflation. However, on the back of strong economic growth in the last year of the projection, the gap in nominal GDP between this scenario and the Central Forecast narrows to around $2 billion by March 2005.

Stronger Economic Recovery

This scenario outlines a possible growth path for the economy based on the assumption that the recovery in economic activity is faster and stronger compared with the Central Forecast, as the export stimulus flows more quickly into the rest of the economy. At the same time, we have allowed for more muted second-round inflation effects and more cyclical productivity.

Compared with the Central Forecast, economic growth is stronger during the first two years of the projection period, peaking at 4.7% in March 2002. In the later years of the forecast horizon, economic growth slows to more sustainable rates, as tighter monetary policy dampens economic activity.

Table 3.3 – Stronger Economic Recovery

(Annual average % change, March years)	**1999/00 Actual**	**2000/01 Forecast**	**2001/02 Forecast**	**2002/03 Forecast**	**2003/04 Forecast**	**2004/05 Forecast**
Private consumption	2.6	1.9	3.3	2.2	2.6	2.7
Business investment excluding computers	6.4	3.6	5.3	2.1	1.9	1.8
Gross national expenditure	6.3	1.4	5.2	3.8	4.8	4.6
Exports of goods and services	6.3	8.1	8.9	6.0	5.0	4.5
Imports of goods and services excluding computers	9.3	0.6	6.8	6.3	6.6	4.1
GDP (Production Measure)	**4.2**	**2.8**	**4.7**	**2.1**	**2.3**	**2.6**
Unemployment rate[1]	6.4	5.6	5.3	5.5	5.6	5.5
90-day rate[2]	6.0	7.4	7.9	7.4	6.4	6.2
TWI[2]	54.1	48.4	56.1	58.9	57.1	55.9
CPI[3]	1.5	3.9	3.7	2.5	1.5	1.1
Current account balance (% GDP)	(7.1)	(5.5)	(4.0)	(3.7)	(3.9)	(3.7)
Nominal GDP (Expenditure Measure)	4.7	4.7	9.0	5.1	4.1	4.5

Sources: Statistics New Zealand, Datastream, The Treasury

NOTES:
1 Percentage of labour force, March quarter, seasonally adjusted.
2 Average for March quarter.
2 This is the CPI-consistent series targeted by the Reserve Bank. Annual percentage change, March quarter.

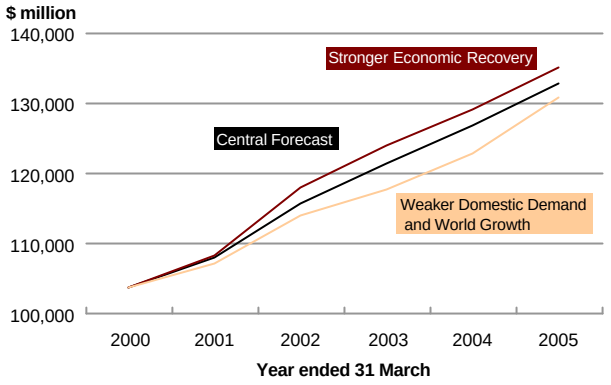
In this scenario, a more rapid flow through of the export stimulus to the rest of the economy leads to a faster and greater recovery in economic activity. Both consumer and business confidence are also likely to turn around quickly, supporting more spending by households and investment and employment by firms. Accordingly, the labour market begins to tighten with the unemployment rate falling to 5.3% by March 2002.

As the labour market tightens, wages begin to rise. However, because inflation expectations are well anchored and wage-setters perceive the oil shock to be temporary, second-round effects are assumed to be more muted compared with the Central Forecast.

Thus, even though wage growth and inflation are higher than in the Central forecast – because of the faster and stronger recovery in economic activity – wage growth and inflation would have been higher still if second-round effects were assumed to be of the same magnitude as in the Central Forecast.

With a stronger economic recovery capacity constraints intensify and inflationary pressures begin to build, leading to tighter monetary policy than in the Central Forecast. 90-day rates reach 7.9% by March 2002. Inflation moves back to the mid-point of the band by March 2004. Due to more muted second-round effects, the monetary response is not as great as would otherwise have been the case.

Figure 3.4 – Nominal GDP



Sources: Statistics New Zealand, The Treasury

The extended period of above trend growth coincides with stronger productivity growth during the upswing of the economic cycle. Relative to the central forecast, productivity growth is around 0.4% higher on average over the 2001-2002 period. The stronger pick-up in labour productivity helps to offset some of the increase in wages faced by firms.

Developments in this scenario mean that the current account deficit is higher relative to the Central Forecast over almost the entire projection period. By March 2005 the current account deficit stands at 3.7% of GDP. This arises because higher household spending and firm investment more than offset slightly stronger exports over the first few years of the forecast horizon.

The greatest deviation in the nominal economy between this scenario and the Central Forecast is reached in March 2003, where the nominal economy is around $2.8 billion higher. Around $1.1 billion of this $2.8 billion is due to a higher level of economic activity, with the rest a consequence of higher inflation. With economic growth moderating during the outer years of the projection period, the difference in the nominal economy between this scenario and the Central Forecast narrows to about $2.1 billion by March 2005.

Fiscal Scenarios

As discussed in Chapter 2, Fiscal Outlook, economic and non-economic outcomes influence the fiscal position. The main economic influences are:

- GDP – components of nominal GDP are the main drivers of tax revenue.
- Interest rates – higher interest rates will increase revenue received from interest income but also increase finance costs paid on government borrowing. Changes in interest rates also affect the valuation of the GSF and ACC liabilities, which flow through the operating balance.
- Unemployment rate – an increase in the unemployment rate will increase the number of unemployment beneficiaries and therefore unemployment spending. Supplementary benefits, such as the accommodation supplement, are also likely to increase.

- CPI inflation – most benefits are indexed to CPI movements, especially New Zealand Superannuation (subject to reaching the 65% wage floor in April 2004, after which it will become wage indexed), the Community Wage and the Domestic Purposes Benefit.

Table 3.4 shows the effect of the two different economic scenarios, described above, on the operating balance and net debt. For the purposes of these illustrations it is assumed:

- changes in the operating balance are assumed to adjust net debt
- no changes in capital contributions for pre-funding future New Zealand Superannuation expense, or NZS asset returns
- no changes in the valuation of the ACC and GSF liabilities. The sensitivities of these liabilities are illustrated in Table 3.5.

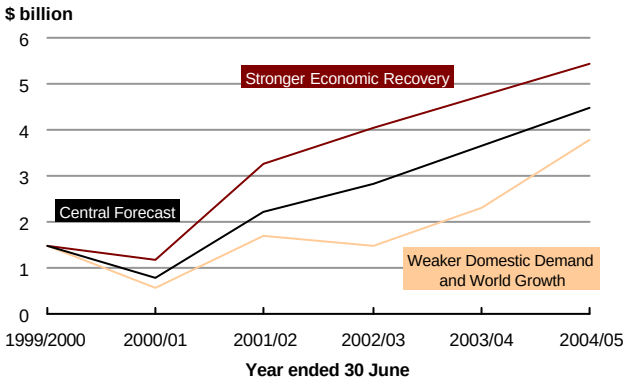
Table 3.4 – Alternative scenarios: Operating balance and net Crown debt[1]

$ billion June years	1999/00 Actual	2000/01 Forecast	2001/02 Forecast	2002/03 Forecast	2003/04 Forecast	2004/05 Forecast
Operating balance						
Central Forecast	1.4	0.8	2.2	2.8	3.6	4.5
Weaker Domestic Demand and World Growth	1.4	0.5	1.7	1.5	2.3	3.8
Stronger Economic Recovery	1.4	1.2	3.3	4.0	4.7	5.4
Net debt						
Central Forecast	21.4	22.1	22.1	22.0	21.4	21.2
Weaker Domestic Demand and World Growth	21.4	22.3	22.9	24.2	24.9	25.4
Stronger Economic Recovery	21.4	21.7	20.7	19.4	17.7	16.6
% GDP June years						
Operating balance						
Central Forecast	1.4	0.7	1.9	2.3	2.8	3.3
Weaker Domestic Demand and World Growth	1.4	0.5	1.5	1.2	1.8	2.8
Stronger Economic Recovery	1.4	1.1	2.7	3.2	3.6	4.0
Net debt						
Central Forecast	20.4	20.2	18.9	18.0	16.7	15.8
Weaker Domestic Demand and World Growth	20.4	20.6	19.8	20.4	19.9	19.1
Stronger Economic Recovery	20.4	19.7	17.2	15.5	13.5	12.2

Source: The Treasury

The Weaker Domestic Demand and World Growth scenario results in a lower operating balance in every year. In the short term, the impact is limited as lower interest rates provide a significant offset to lower growth and employment. However, in 2002/03, as the impact of lower economic growth and inflation starts to bite, the operating balance actually declines. In the final two years of the forecast period the operating balance recovers on the back

Figure 3.5 – Operating balance



Source: The Treasury

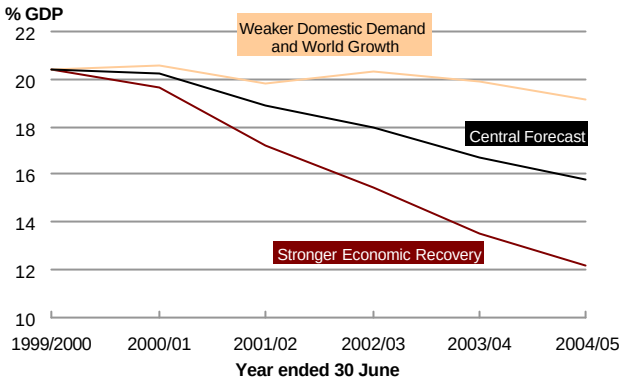
1 NB: Since the Budget Update, the methodology used to estimate the impact of changes in growth on tax has been updated to reflect new research in this area.

of the strong pick-up in economic growth.

The Stronger Economic Recovery scenario shows a somewhat different pattern of impacts, especially in the short term, with the operating balance in this scenario around $400 million higher than the Central Forecast in 2000/01 and around $1 billion higher each year thereafter. In this scenario, the operating balance benefits early on from the combined effect of stronger real and nominal GDP growth, with higher benefit and finance costs (through CPI indexation and interest rates) providing only a partial offset.

The changes in the operating balance have a cumulative effect on net debt. Compared with the Central Forecast net debt in 2004/05 is lower than in the Stronger Economic Recovery scenario by around 4% of GDP and higher in the Weaker Domestic Demand and World Growth scenario by around 4.5% of GDP.

Figure 3.6 – Net debt



Source: The Treasury

Fiscal Sensitivities

The scenarios above indicate the sensitivity of the forecasts to alternative economic scenarios. The table below provides some general 'rules of thumb' on the sensitivities of the fiscal position to changes in specific variables. Sensitivities around different tax types can be found on the "Tax Card" located on the Treasury's internet site (www.treasury.govt.nz).

Table 3.5 – Sensitivity analysis

($ million)	2000/01 Forecast	2001/02 Forecast	2002/03 Forecast	2003/04 Forecast	2004/05 Forecast
1% higher nominal GDP growth per annum					
Tax Revenue	360	770	1,220	1,720	2,260
Expenses (mainly debt servicing)	10	50	120	200	280
Impact on the operating balance	**370**	**820**	**1,340**	**1,920**	**2,540**
Revenue impact of a 1% increase in the growth rate of:					
Wages and salaries	150	320	510	720	940
Taxable business profits	60	160	260	390	520
One percentage point lower interest rates					
Interest income	(40)	(50)	(50)	(70)	(70)
Expenses	50	120	190	230	250
Impact on the operating balance	**10**	**70**	**140**	**160**	**180**
One percentage point lower real interest rates					
ACC liability (SOE and Crown entity surpluses)	(350)	-	-	-	-
GSF liability (expenses)	(1,600)	-	-	-	-
Impact on the operating balance	**(1,950)**	-	-	-	-

Source: The Treasury

The different sensitivities of the ACC and GSF liabilities reflect the different properties of the liabilities, especially the magnitude and timing of the expected cash flows. These differences are highlighted in the table below.

Table 3.6 – Comparison of ACC and GSF liabilities

	Total liability ($ billion)	Net liability ($ billion)	Expected years of payment
ACC	6.2	3.2	up to 15
GSF	11.6	8.5	up to 70

Source: The Treasury