



CHAPTER FIVE

VALUING AND FORECASTING THE STUDENT LOAN SCHEME

5.0 Introduction

This chapter looks at the costs and value of the loan scheme. It gives information on the models that produce cost and valuation estimates, it describes the fair valuation of the scheme, and it gives forecasts of loan balances and repayment times.

The loan scheme is a significant government asset²⁹. The portfolio is forecast to grow to \$12,700 million by the year 2014/15. This forecast is higher than 2005's estimate³⁰, reflecting changes in government policy on student loans.

The loan scheme's costs are shared between students and the government in the following ways:

- Government covers the cost of changes to implement new policies or improve delivery.
- Borrowers meet part of the administration costs through a one-off fee of \$50 for each year that they borrow.
- Government meets the remaining administration costs.
- Government meets most of the capital costs to run the loan scheme.
- Borrowers overseas meet a share of the government's estimated capital costs through interest payments.

The government writes off the following sums, which represent a cost to the Crown:

- from 1 April 2006, all interest for borrowers living in New Zealand
- before 1 April 2006, all or part of the interest accrued by borrowers who meet certain criteria³¹
- student loan balances of deceased or bankrupt borrowers
- small balances.

The loan scheme is now valued under a New Zealand equivalent of the International Financial Reporting Standards (IFRS). The change in the accounting approach is described in chapter 6.

5.1 Forecasting and costing models

This report uses forecasting and costing data from two models of the loan scheme: the Tertiary Education Student Loan Analysis (TESLA) model and the new Student Loans Integrated Model (SLIM). Once it is fully implemented, SLIM will replace TESLA. As this report has been prepared during the transition from TESLA to SLIM, it draws forecast information from both models.

TESLA forecasts student loan balances and repayment periods, and helps to evaluate policy options. Its results have been published in earlier annual reports on the scheme.

TESLA results are presented here to provide continuity in projections.

SLIM is built on data from the integrated dataset. It models borrowing, repayments and other aspects of the loan scheme. SLIM was developed as a means of calculating the fair value model for the loan scheme. The fair value calculated using SLIM has been included as a note to the accounts in the last three annual reports on the scheme. SLIM has informed the costings of recent policy changes. It is used in the calculations needed for compliance with the IFRS accounting framework.

Appendix 2 has more information about TESLA and SLIM, including the assumptions on which they are built and some comparisons between the models' predictions and actual experience.

Student Loan Scheme changes and predictability

Recent changes to the loan scheme are expected to change borrowing and repayment patterns. Given the extent of change, forecasting on the loan scheme can rely less than usual on past observations and hence is subject to greater uncertainty.

5.2 Valuation and accounting

Under the new standards³², all financial assets – including student loans – have to be recognised initially at their 'fair value'. Student loans are classified in the standard as 'loans and receivables'. They are subsequently valued at their amortised cost. The loan balance may also be subject to 'impairment' – a reduction of their value. The closing loan balance recorded in the accounts at 30 June 2006 has been prepared according to these new standards.

Although the fair value concept is used in the valuation – at the time loans are initially established – the value in the accounts is not intended to be a 'fair valuation'. Nevertheless, a fair value is disclosed in the notes to the accounts. This standard requires pre-tax cash flows and discount rates, and therefore differs from previously reported fair valuations.

The fair value of the loan scheme is the amount for which the loans could be exchanged between knowledgeable, willing parties in an arm's length transaction. In the calculation of the fair value, an assessment is made of expected future cash flows. The cash flows are discounted at rates that depend on market estimates of future interest rates. These rates incorporate a risk premium. Since market interest rates are used each year, the valuation is subject to market fluctuations outside of the loan scheme's control.

Reporting the fair value in the notes to the accounts has been a requirement of the generally accepted accounting practices (GAAP) standards in recent years.

29 Money owed to government is recorded financially as an asset. This is similar to the way in which banks record mortgages in their financial statements.

30 In 2005, the estimate of the value of the scheme in 2014/15 was \$12,000 million. Refer to table 12.

31 The interest write-off criteria are described in Appendix 1 and the amounts written off are given in section 4.4 under 'Interest write-offs'.

32 In particular, NZ IFRS IAS 39: Financial Instruments: Recognition and Measurement.

Table 10 Fair value in the note to the accounts

	30 June 2004 Million	30 June 2005 Million	30 June 2006 Million
Face value	\$6,821	\$7,499	\$8,370
Fair value	\$5,734	\$5,994	\$5,538
Ratio	84.1%	79.9%	66.2%

Source: Ministry of Education

The fair valuation of the loan scheme at 30 June 2006 was approximately \$5,538 million. This is 66.2 percent of the face value of the loan scheme's closing balance (\$8,370 million) on the same date. Last year, the fair value calculated as at 30 June 2005 was \$5,994 million (79.9 percent), while in 2004 the fair value was \$5,734 million or 84.1 percent of the face value.

The fall in fair value between 2005 and 2006 was \$456 million or 7.6 percent. As a percentage of the face value of the aggregate outstanding loan balance, the fair value dropped by 13.7 percentage points. The principal reasons for this decrease were the implementation of the interest-free student loans policy from 1 April 2006, which increased the amounts of interest written off and therefore reduced future net cash flows and adoption of the NZ IFRS framework. Additional changes in the model and economic assumptions also had an effect. In particular, the gross long-term discount rate decreased from 7.5 to 6.4 percent between these valuations.

NZ IFRS Valuation

The value of the loans as reported in the Financial statements of the Government has been measured in accordance with the NZ IFRS accounting standards. Under NZ IFRS, once the discount rate is struck it remains fixed for subsequent valuations³³. Thus, market changes in the value of money will no longer affect the accounts. Future revaluations will only show changes that have been measured in the loan scheme.

SLIM will be used for annual NZ IFRS-compliant valuations for the Financial statements of the Government. It will also be used to help prepare bi-annual fiscal and economic updates.

5.3 Average net interest rate

The full interest rate for 2006/07 is 6.9 percent. Only borrowers living overseas incur interest. All student loan borrowers living in New Zealand are eligible for a full write-off of all interest incurred after 1 April 2006.

Before implementation of the interest-free student loans policy, all borrowers were charged interest on their loans. However, many borrowers had all or part of their interest written off under provisions intended to ensure that those in financial need had a lower loan burden. The average net interest rate is the total amount of interest charged – net of those write-offs – as a percentage of the face value of all student loan balances. In 2005, the average net interest rate was 3.2 percent, compared with 2.8 percent in both 2004 and 2002³⁴.

Had the interest-free student loans policy not been implemented, the average net interest rate for the period 2006-2050 was forecast to be around 3.4 percent – representing only around 52 percent of the gross interest incurred. Because interest is now accrued only by loan borrowers residing overseas, the average net interest rate under the new policy for the same period is estimated to be around 1.7 percent.

5.4 Fiscal forecasting

Before the implementation of the interest-free student loans policy in 2005, there was a decline in rates of loan uptake, and in the actual number of loan borrowers. There were 2,624 fewer loan borrowers in 2005 than in 2004, representing a drop of 1.7 percent.

Before the implementation of the interest-free student loans policy, it was expected that the total annual repayments of loans would exceed the total annual drawings by 2016. With the policy's implementation in April 2006, the annual loan repayments are now estimated to exceed the annual borrowings from 2034 onwards. However, the interest that will be charged to borrowers living overseas will exceed the difference between repayments and borrowings. As a result, the aggregate student loan balance is expected to continue to rise, if at a reducing rate, until 2050.

The following table compares the most recent long-term forecast results with those from the same date in 2005. As a consequence of introducing the interest-free policy, the total amount to be borrowed is forecast to increase by 16 percent or \$3.2 billion over the next 15 years. However, net interest is projected to decrease. The total outstanding loan balance in 2020 is now forecast to increase by only 8 percent, or \$1.1 billion, compared with the previous forecast, made in 2005 before the introduction of interest-free student loans.

33 This is known as the effective interest rate.

34 These percentages are for the calendar years.

Table 11 Comparison of the 2005 and 2006 Budget Economic and Fiscal Update (BEFU) forecasts for 2006-2020

	Total outstanding balance 2005 Million	Borrowings 2006-2020 Million	Net interest 2006-2020 Million	Repayments 2006-2020 Million	Death/bankruptcy write-off 2006-2020 Million	Total outstanding balance 2020 Million
BEFU 2006	\$7,238	\$23,323	\$2,069	\$17,263	\$236	\$15,131
BEFU 2005	\$7,204	\$20,090	\$5,474	\$18,507	\$257	\$14,003
Increase BEFU 2005 - BEFU 2006	\$34	\$3,233	(\$3,405)	(\$1,245)	(\$21)	\$1,128
Percentage increase	0.5%	16.1%	-62.2%	-6.7%	-8.2%	8.1%

Source: Ministry of Education

In the most recent forecast, the average annual increase in the number of loan borrowers from 2005 to 2010 is estimated to be 3.9 percent per annum. The June 2005 estimate of the rate of growth in the number of borrowers was 1.2 percent a year. The increase in the forecast rate of growth in borrowers reflects the impact of the interest-free policy, changes in the size and structure of the New Zealand population, participation rate forecasts and forecasts relating to economic conditions. The full set of assumptions is set out in Appendix 2.

The average annual increase in total borrowing is expected to be 7 percent per annum from 2005 to 2010. The June 2005 estimate was a 3.8 percent average annual increase in the total borrowings. Again, this projected increase is attributed to the introduction of the interest-free policy. From 2005 to 2010, the average increase in the average amount borrowed per borrower is expected to be around 3 percent per annum, compared with a forecast of 2.5 percent last year.

One consequence of the increasing number of part-time students and the greater access of part-time students to student loans is to lower the overall loan uptake rate³⁵ and gross borrowing. Because part-timers have a much lower loan entitlement, the move to more part-time borrowers will moderate the increase in the average amount borrowed each year³⁶.

³⁵ More information about this can be found in section 4.1.

³⁶ The latest forecasts are on the Ministry of Education website at www.minedu.govt.nz/goto/studentloans (August 2006).

5.5 Aggregate loan balance projection

The following long-term projection of loan balances, developed using TESLA, shows the estimated aggregate student loan balance at the end of each fiscal year.

Table 12 Forecast aggregate projected loan balances (gross) 2001-2006

Aggregate balance projections	Projected loan balances - million					
	2009/10		2014/15		2019/20	
	Balance	Change	Balance	Change	Balance	Change
June 2006	\$9,900	\$100	\$12,700	\$700	\$15,300	\$1,200
June 2005	\$9,800	(\$700)	\$12,000	(\$1,000)	\$14,100	(\$1,000)
June 2004	\$10,500	\$300	\$13,000	\$500	\$15,100	\$700
June 2003	\$10,200	(\$1,000)	\$12,500	(\$1,900)	\$14,400	(\$2,600)
June 2002	\$11,200	\$1,000	\$14,400	\$1,000	\$17,000	\$900
June 2001	\$10,200	N/A	\$13,400	N/A	\$16,100	N/A

Source: Ministry of Education - TESLA model

The latest projections of the aggregate student loan balance show an increase compared with projections in June 2005. The main factor contributing to that increase was the interest-free policy introduced on 1 April 2006.

The forecast in June 2006 for 2014/15 is 5.2 percent lower than the forecast in June 2001. Likewise, the latest forecast for 2019/20 is 5 percent lower than the June 2001 forecast. The volatility of these forecasts derives from three main sources:

- changes in tertiary education policy – such as the latest interest-free policy and the Fee and Course Cost Maxima policy
- changes in projected participation rates in the tertiary sector
- changes in the economy, such as expected employment and wage rates.

The estimates of overall outstanding student loan balances are very sensitive to assumptions about participation in tertiary education. Reasonable variations in participation projections lead to estimates of total outstanding loan balances by 2019/20 ranging from \$14,600 million to \$15,600 million. Projections of total outstanding loan balances are less sensitive to variations in income assumptions. If the real income growth of borrowers is adjusted by 0.2 percent per annum, the change in projected level of loan balances for 2019/20 is around \$400 million.

5.6 Predicted repayment periods

TESLA is used to forecast median and average loan repayment times.

Table 13 Estimated average and median repayment times

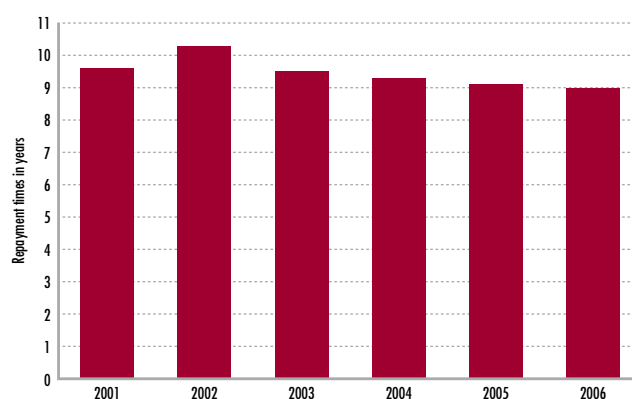
Projected repayment times	Average	Median	25th percentile	75th percentile
June 2006 projections	9.0 years	6.9 years	3.7 years	10.5 years
June 2005 projections	9.1 years	6.7 years	3.5 years	10.6 years
Projection change	- 0.1 years	0.2 years	0.2 years	- 0.1 years

Source: Ministry of Education - TESLA model

The average repayment period has fallen to nine years, down from 9.1 in 2005 and 9.3 in 2004. The median loan repayment time is around 6.9 years. A quarter of borrowers repay their loans within three years and eight months while three-quarters of all borrowers take less than 10.5 years to repay. The 75th percentile has reduced since 2005, while the median and 25th percentile groups have gone up slightly. The main factors contributing to the changes were the forecast changes regarding future loan borrowings and changes in Treasury's long-term interest rate projections.

Figure 43 shows the forecast average repayment times between 2001 and 2006.

Figure 43 Forecast average repayment times 2001-2006.



Source: Ministry of Education - TESLA model

Repayment times are sensitive to changes in the income assumptions used in TESLA. An annual increase in borrowers' real income growth of 0.2 percent results in repayment times being shortened by up to half a year.