

CHAPTER FIVE

THE COSTS OF THE STUDENT LOAN SCHEME

Key Statistics - Loans

At 30 June 2005

- The total **face value** of student loan balances was \$7,499 million, consisting of:
 - a net face value of \$6,465 million, and
 - a doubtful debt provision of \$1,035 million.
- The **fair value** was \$5,994 million (79.9 percent of face value).
- The **economic value** was \$6,121 million (81.6 percent of face value).
- The **Doubtful Debt Provision** was 12.8 percent of the change in face value (up from 11.4 percent in 2004).

Forecast

- The forecast median loan repayment time is 6.7 years (compared with a forecast of 6.9 years in 2004).
- 75 percent of all students are forecast to repay within 10.6 years.
- The effective interest rate for 2005/06 is forecast to be 3.3 percent.

5.0 Introduction

This section looks at the costs and value of the Student Loan Scheme, including:

- the assumptions and processes used in the models that produce the cost and valuation estimates
- estimates of future loan balances and repayment times
- the provision made for estimating future non-recovery of loans (doubtful debt), and
- the progress towards calculating the fair value of the scheme and the results to date.

The Student Loan Scheme is a significant government asset³³. The portfolio is forecast to grow to \$12,000 million by the year 2014/15. This forecast is slightly lower than earlier estimates³⁴, reflecting the impact of changes in the expected level of student loan borrowings.

The costs of the scheme are shared between students and the government in the following manner:

- Borrowers meet a share of the government's estimated cost of capital through interest payments.
- Part of the cost of administration is met by borrowers through a one-off administration fee of \$50 in each year of borrowing.
- The government meets the costs resulting from fluctuations in uptake and transactions.
- The government also covers the cost of system changes to implement new policies or improve delivery.

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

- all or part of the base interest charge for borrowers who meet write-off eligibility criteria
- all interest for borrowers who were studying during the year and meet certain criteria
- student loan balances of deceased or bankrupt borrowers, and
- small balances.

5.1 Calculating the costs of the Student Loan Scheme

The Tertiary Education Student Loan Analysis (TESLA) model was developed for the Ministry of Education to forecast student loan balances and repayment periods and to assist with the evaluation of policy options. The TESLA model generates a representative student population from a profile of borrower characteristics. Each individual in this model has student loan characteristics. The characteristics of this group of representative borrowers give an overall annual estimate of student loan balances, repayments, interest and write-offs. (See Appendix 4 for further details of this model, including the assumptions on which it is built.)

From next year, it is expected that the new Student Loans Integrated Model (SLIM) will be used in place of TESLA for forecasting and costing work associated with the Student Loan Scheme.

5.2 The Doubtful Debt Provision

The Doubtful Debt Provision (DDP) is a provision for capital write-offs due to death³⁵ and loans discharged because of bankruptcy. The provision was set at 15 percent in 1992 when the Student Loan Scheme was first incorporated into the Crown Financial Statements. It was revised to 10 percent from 1996 until 2001, as a result of estimates made using the TESLA model. The Ministry of Education revised the DDP in June 2002 in consultation with the Treasury and Inland Revenue. As a result of that review, the provision was set at 11.4 percent for the year to June 2002. The DDP was reviewed again in 2003 and 2004. The difference in each of those years was still within the margin of error of the 11.4 percent figure (plus or minus 1.0 percent). Thus, no change was made to the DDP for the financial years to June 2003 or 2004. The latest review of the DDP, based on the most recent³⁶ forecast, resulted in an estimated DDP of 12.8 percent for the financial year to June 2005. The provision is expected to increase slightly in the out-years.

At 30 June 2005, the DDP stood at \$1,035 million, compared with \$826 million at 30 June 2004. Of the \$209 million increase in the DDP between 2004 and 2005, \$99 million or 47 percent is a result of the change in the DDP rate. The remainder of the increase is a result of the increase in the aggregate loan balance.

An increase in the rate of the DDP is to be expected, other things being equal, as the scheme matures. Lower risk borrowers tend to repay their loans faster, and so higher risk borrowers gradually become a higher proportion of all loan holders.

The DDP is sensitive to the assumptions about borrowers' borrowing characteristics and their income growth profiles.

³³ The Student Loan Scheme is considered a government asset, as money owed to the government is recorded financially as an asset. This is similar to how a bank records mortgages in its financial statements.

³⁴ In 2004, the estimate of the value of the scheme in 2014/15 was \$13,000 million. Refer to Table 2.

³⁵ There are no write-offs for overdue repayment obligations. Overdue repayment obligations that accumulate due to people not meeting their repayment obligations can be written off as a death write-off if the person dies with outstanding debt.

³⁶ The Budget Economic and Fiscal Update (BEFU), 2005.

5.3 The fair value of the Student Loan Scheme

The fair value of the Student Loan Scheme is defined as the price a willing buyer would offer a willing seller to purchase the scheme³⁷. The fair valuation of the scheme recognises that the Crown forgoes revenue due to death, bankruptcy and other write-offs and defaults.

The fair valuation of the scheme at 30 June 2005 was \$5,994 million. This is 79.9 percent of the face value of the Student Loan Scheme's closing balance on the same date. Last year, the fair value at 30 June 2004 was \$5,734 million (84.1 percent), while in 2003, the fair value was 91.8 percent of the face value. The 2005 fair value represents an increase of \$260 million compared with the previous year (a drop of 4.2 percent).

The main reason for the change from 84.1 percent to 79.9 percent in the ratio of fair value to the face value of total loan balance was the use of updated data. Changes in the model and changes in the economic assumptions also contributed to this shift.

The main changes in the economic assumptions were:

- The long-term risk-free rate decreased from 6.6 percent to 5.7 percent.
- The gross discount rate decreased from 7.5 percent to 6.4 percent.
- The loan interest rate decreased from 7.1 percent to 6.8 percent.

5.4 The economic value of the Student Loan Scheme

The gross economic cost of the scheme to the Crown is equivalent to the resources the Crown forgoes by lending money under the scheme. It incorporates the cost of loans written off due to death, bankruptcy and other write-off policies and accounts for the timing of loan repayments discounted using a gross discount rate equal to a 'risk-free rate', based on projected yields of government stock. The economic value of the scheme is the face value less the gross economic cost.

The fair value of the scheme differs from the economic value because the discount rate applied differs between the two calculations. While the economic cost uses the before-tax long-term borrowing rate to reflect the cost to the Crown of the scheme, the fair valuation uses the after-tax long-term borrowing rate plus a risk premium to reflect the tax-paying status of the potential buyer and the added risk to that buyer of the uncertainty of the timing of future cash flows.

Using the same methodology as the fair value, the economic value of the scheme at 30 June 2005 was \$6,121 million. This represents 81.6 percent of the face value of the Student Loan Scheme's closing balance on the same date.

Last year, the economic value as at 30 June 2004 was \$5,834 million (85.5 percent), while in the previous year the economic value was 92.2 percent of the face value of the scheme. The 2005 economic value represents an increase of \$287 million compared with the previous year (a drop of 3.9 percent). The fall in the ratio of economic value to the face value of the scheme is a result of the same factors as those that led to the decline in the fair value:face value ratio.

The economic value is sensitive to the underlying economic model assumptions. For example, a 1 percent increase in the discount rate would decrease the economic value by approximately \$300 million.

5.5 The effective interest rate

The full interest rate for the income year ending 31 March 2006 is 7.0 percent, comprising 4.2 percent base interest and 2.8 percent for the inflation component³⁸. Not all borrowers incur the full interest rate because many are eligible for an interest write-off or interest reduction. The effective interest rate is estimated to be 3.3 percent for 2005/06. This figure represents the average interest rate charged per borrower, calculated as the total net interest incurred by all borrowers as a percentage of total loan balance. Around 50 percent of interest accrued during 2005 is expected to be written off. Almost 316,000 borrowers benefited from an interest write-off in the year ending 31 March 2005. The overall amount of interest written off for that period was in excess of \$230 million. More than half of that amount (\$127 million) was written off as a result of the 'no interest while studying' policy.

5.6 Student loan forecasts

By 2016, it is expected that the total annual repayments of loans will exceed the total annual drawings. At that time, the total aggregate Student Loan Scheme balance will rise by less than 3.5 percent a year³⁹.

In the most recent student loan forecast, it is estimated that the average annual increase in the number of loan borrowers for the period 2005 to 2009 will be 1.2 percent per annum. The June 2004 estimate was 3.4 percent. The decrease in the forecast rate of growth in the number of borrowers reflects the current trend; the actual number of borrowers at the end of June 2005 is lower than previously forecast.

The average annual increase in the total borrowing is expected to be 3.8 percent per annum over the years 2005 to 2009. The June 2004 estimate was 5.4 percent. One of the reasons for the reduction in the forecast increase in aggregate loan levels is the increase in part-time borrowers whose drawings will be lower. This trend will dampen the forecast increase in the amount borrowed by each student. For the period 2005 to 2009, the average increase in the average amount borrowed per borrower is expected to be around 2.5 percent per annum.

³⁷ This does not imply that there is any wish to 'sell' the Student Loan Scheme asset. Rather, the fair value is a hypothetical figure, based on what a tax-liable buyer with perfect information would be prepared to pay a willing and fully-informed seller, if the asset were to be sold.

³⁸ Refer to Appendix 1 in this report for an explanation of the components of the interest rate.

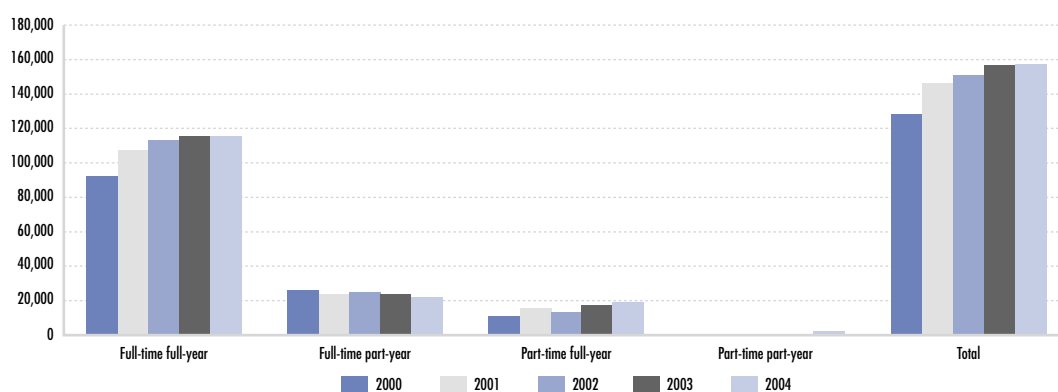
³⁹ This forecast has been made on the basis of the policy settings in place at 30 June 2005.

Until 2004, student loans were available to full-time students studying an approved course of at least 12 weeks and part-time students studying for a full academic year. From the beginning of 2004, loan eligibility was extended to part-time, part-year students studying a course load of 0.3 EFTS units or more. These part-time, part-year students are entitled to borrow their tuition fees only.

From 1 January 2005, access to student loans with vocational restrictions was extended to part-time, part-year students. The new category only applies to students whose study load is at least 0.25 EFTS units, but less than 0.3 EFTS units.

Figure 40 shows the number of students who received student loans in each of the last five years according to their study status.

Figure 40 (Table 41) Student loan borrowers by study status 2000-2004



Source: Ministry of Education and Ministry of Social Development

Only about 15 percent of part-time students who are eligible to take up a student loan actually borrow. The corresponding uptake rate for full-time students is about 74 percent. 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 rate⁴⁰ and the gross amount of borrowing. Because part-timers have a much lower loan entitlement, the move to more part-time borrowers illustrated in Figure 40 will moderate the increase in the average amount borrowed each year⁴¹.

5.7 Aggregate student loan value projection

Table 19 shows the forecast, aggregate student loan balance at the end of each fiscal year.

Table 19 Forecast aggregate loan balances (gross)

Year to 30 June	2009/10		2014/15		2019/20	
	Balance \$million	Change	Balance \$million	Change	Balance \$million	Change
2001	10,200	13,400	16,100			
2002	11,200	1,000	14,400	1,000	17,000	900
2003	10,200	-1,000	12,500	-1,900	14,400	-2,600
2004	10,500	300	13,000	500	15,100	700
2005	9,800	-700	12,000	-1,000	14,100	-1,000

Source: Ministry of Education, TESLA model

The main contributing factor to the recent decrease in the projected long-term levels of the aggregate student loan balance was adjustments in the forecast number of prospective loan borrowers.

⁴⁰ Further information on this can be found in section 3.3.

⁴¹ The latest forecasts can be read on the following Ministry of Education website: www.minedu.govt.nz/goto/studentloans.

The latest projections of the aggregate student loan balance show a reduction from the projections made in June 2004. The forecast made in June 2005 for 2009/10 is 4.8 percent lower than the forecast made in June 2001. Likewise, the latest forecast for 2019/20 is 12.3 percent lower than the June 2001 forecast. The reduction in the forecast derives from three main sources:

- changes in tertiary education policy – such as the implementation of a fee/course cost maxima policy
- changes in the projections of participation in the tertiary education sector, and
- changes in the economy, such as expected employment and wage rates.

The forecast, overall, outstanding student loan balances are very sensitive to assumptions on participation in tertiary education. Reasonable variations in participation projections lead to the forecast 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.

5.8 Predicted average and median student loan repayment periods

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

Table 20 Predicted average and median repayment times

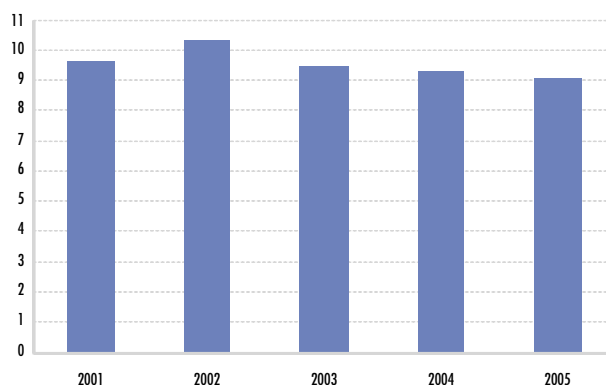
	Average	Mean	25th percentile	75th percentile
June 2005 projections	9.1 years	6.7 years	3.5 years	10.6 years
June 2004 projections	9.3 years	6.9 years	3.6 years	12.0 years
Projection change	- 0.2 years	- 0.2 years	- 0.1 years	- 1.4 years

Source: Ministry of Education, TESLA model

The forecast average repayment period has fallen to 9.1 years from 9.3 years last year and 10.3 years at 30 June 2002. Lower repayment periods are now projected also for the median and most of the other percentile groups. The main factors contributing to this decrease were the forecast changes regarding future loan borrowings and changes in the Treasury's long-term interest rate projections.

Figure 41 shows the forecast average repayment times between 2001 and 2005.

Figure 41 Forecast average repayment times (in years) 2001-2005



Source: Ministry of Education

The TESLA model shows that the forecast median loan repayment time is around 6.7 years. A quarter of borrowers are forecast to repay their loans within three and a half years while three-quarters of all borrowers are forecast to take less than 10.6 years to repay.

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

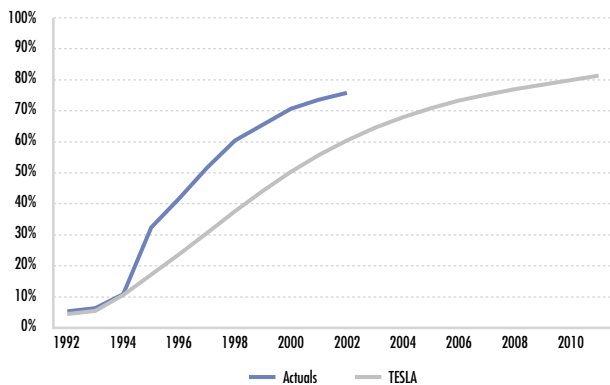
5.9 Comparison of forecast outcomes and actual outcomes

TESLA is a model. As such, it attempts to simulate the performance of the scheme by working out what will happen to borrowers under the current rules of the scheme and given what we know about the likely behaviour of the economy, the employment market and wage rates. Information about the construction of TESLA and the underlying assumptions is set out in Appendix 4.

Models are predictive and based on assumptions. They can never be exact. The test of any model is whether it predicts what finally happens with accuracy. The Ministry of Education has undertaken testing of the TESLA model by comparing the historic predictions of the TESLA model against actual observations of repayment times from the integrated dataset.

The testing showed that for the initial groups of borrowers, TESLA overstated repayment times. For instance, TESLA produces an expected median repayment time of 7.3 years for those who last studied in the first year of the Student Loan Scheme (1992), whereas the integrated dataset analysis shows that, in fact, the median was around five years.

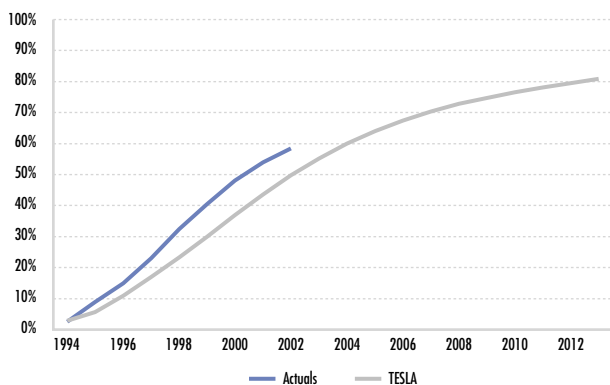
Figure 42 Percentage of those who last studied in 1992 who have completely repaid their student loans – observations from the integrated dataset vs predictions from TESLA



Source: Ministry of Education, Statistics New Zealand

The median for the 1994 cohort was predicted in TESLA to be eight years, whereas in reality, the median for this group was around 6.6 years.

Figure 43 Percentage of those who last studied in 1994 who have completely repaid their student loans – observations from the integrated dataset vs predictions from TESLA



Source: Ministry of Education, Statistics New Zealand

A comparison of the repayments of those who last studied in 1997 shows that, while TESLA understates the numbers who repay in the first three years, it starts to catch up after that. It appears to model actual observations reasonably well after the first three years post-study. Table 21 shows the percentage of the 1997 cohort who had completely repaid in each of the five succeeding years.

Table 21 Percentage of borrowers who last studied in 1997 who have completely repaid in each year 1997-2002

1997 Cohort	Percentage completely repaid	
	Actuals	TESLA prediction
1997	3.6%	1.4%
1998	9.5%	5.5%
1999	15.3%	10.1%
2000	20.9%	15.4%
2001	26.2%	21.1%
2002	31.0%	27.6%

Source: Ministry of Education, Statistics New Zealand

TESLA results imply that the average repayment time for women is 3.5 years longer than the average for men. Analysis of actual repayment trends using the integrated dataset (set out in Chapter 4) implies that this difference is an overstatement. There is no significant difference in the rates at which men and women repay loans in the first 10 years following study. Also, women are less likely than men to have made no progress at all towards repayment of their loans in the first 10 years following study. Therefore, while the TESLA model appears to give accurate and reliable predictions for the scheme *as a whole*, there are doubts as to the accuracy of the disaggregations of those results. It is for this reason that this report does not include separate predictions of repayment times for men and women.

The Ministry of Education is currently developing a more sophisticated model of borrowing, repayments and other aspects of the Student Loan Scheme. The new model, called the Student Loans Integrated Model (SLIM), is built on the integrated dataset which contains unit record data from the Ministry of Education, Inland Revenue and the Ministry of Social Development for each student loan borrower (including former loan borrowers). The results of this modelling will be more robust than earlier models and will give agencies, researchers and the general public a clearer understanding of the probable future status of the Student Loan Scheme and its outcomes. It will enable agencies to assess much more accurately such things as the impacts of the scheme on different ethnic groups or women, and the borrowing and repayment behaviour of borrowers studying in different fields of study or studying at different levels.