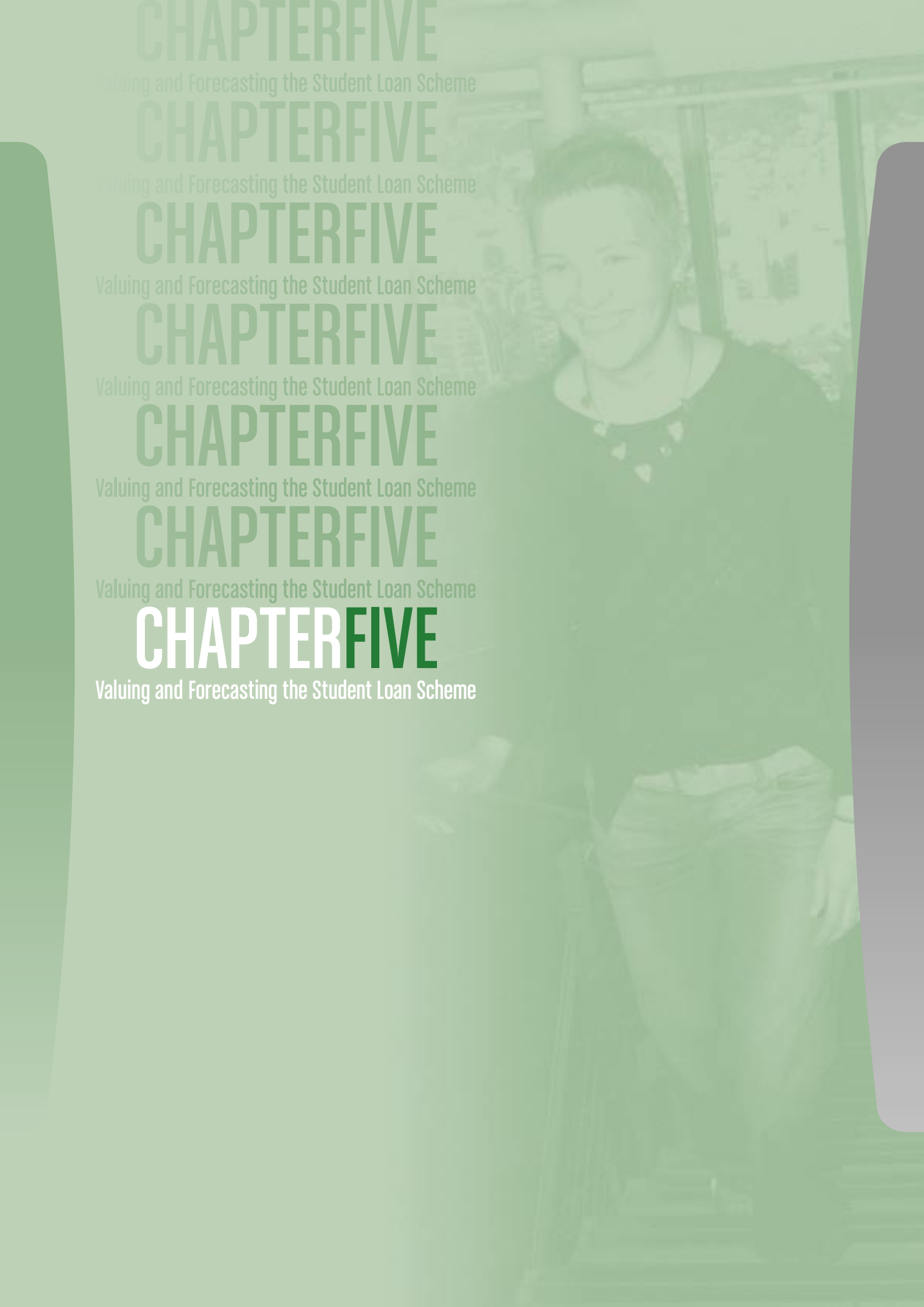


CHAPTER FIVE

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 model that produces cost and valuation estimates, it describes the fair valuation of the loan scheme, and it gives forecasts of loan balances and repayment times.

A new forecasting model has been phased in, providing the government agencies that manage the loan scheme with better information about borrower behaviour and about repayment patterns. This means that the agencies now have a better understanding of the costs of lending, of the value of the loan asset and of the factors that influence changes in costs. The information in this chapter reflects these improvements. The new model is described in 5.1 below.

The loan scheme is a significant government asset.[31] On 30 June 2007, the nominal or face value of loans was $9,413 million while the loan asset is recorded in the financial statements as $6,011 million. The current forecast is that the portfolio will grow to $16 billion by the middle of 2015. Current estimates suggest that by that time the asset value is likely to be around $10 billion.

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.[32]
- 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 recognises its share of these costs by appropriating money that covers a proportion of new lending. In 2006/07, the government lent $1,176 million to students.[33] This was recognised to have a cost of $479 million while the remainder – $697 million – was added into the student loan asset.

5.1 The forecasting and costing model

This report uses forecasting and costing data from the Ministry of Education's new actuarial valuation model of the loan scheme – the Student Loans Integrated Model (SLIM). Now that it has been fully implemented, SLIM has replaced the previous models used for modelling and forecasting student loans.

SLIM models borrowing, repayments and other aspects of the loan scheme. One of the purposes of SLIM is to calculate the fair value of the loan scheme. The fair value calculated using SLIM has been included as a note to the accounts in annual reports since October 2003. Since then, SLIM has also been used to assess the impact and cost of new policies. It is used to estimate repayment times and, importantly, it is used in the calculations needed for reporting under the IFRS[34] accounting framework. It is also used to help prepare bi-annual fiscal and economic updates.

SLIM is built on data from the integrated dataset on loan scheme borrowers, meaning it is using actual data to reach its conclusions, rather than the simulations used in earlier models of the loan scheme. Appendix 2 has more information about SLIM, including the assumptions on which the model is built and some comparisons between the model's predictions and actual experience.

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 is therefore subject to greater uncertainty.

5.2 Short-term forecasts

Twice a year, as part of the government's fiscal update cycle, Inland Revenue forecasts student loan repayments while the Ministry of Social Development forecasts new lending. This is done for the current fiscal year and for four further years. Table 10 gives the lending and repayment for the year that ended on 30 June 2007 and the forecasts from the Budget 2007 economic and fiscal update.

Table 10 Lending and repayment forecasts 2007/08-2010/11

	Actual	Forecast			
Financial year	2006/07 $ million	2007/08 $ million	2008/09 $ million	2009/10 $ million	2010/11 $ million
New lending	1,185	1,278	1,334	1,389	1,444
Repayments	555	621	705	763	839
Net cash outflow	629	656	629	626	605

Source: Ministry of Social Development, Inland Revenue and Treasury: *Budget 2007 Economic and Fiscal Update May 2007.*

Table 10 shows a steady annual increase in the forecasts of both lending and repayment. The 22 percent lending increase between 2006/07 and 2010/11 results from forecasts of increased enrolments in tertiary education, the trends in the type of enrolments and the trends in loan uptake. Repayments are forecast to rise more quickly – by 52 percent over the same period. Between 2005 and 2007 repayments fell as a consequence of the introduction of the interest-free student loans policy. The increases observed in the forecasts result from the increased number of borrowers and the rises in incomes that flow into higher repayments.

31 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.

32 This is added to the student's loan. See appendix 1.

33 Excluding loan administration fees.

34 International Financial Reporting Standards – the new accounting standard for financial assets.

5.3 Valuation and accounting

Under IFRS,[35] financial assets (including student loans) have to be recognised initially at their 'fair value' and student loans are classified as 'loans and receivables'. They are subsequently valued at their amortised cost. The loan balances may also be subject to 'impairment' – a reduction in their value that can result from objective evidence that all amounts due may not be collected. The closing loan balance recorded in the accounts at 30 June 2007 has been prepared according to these standards.

Fair valuation

The fair value of the loan scheme is the amount for which the government's student loan asset could be purchased in an arm's-length transaction between knowledgeable, willing parties. In calculating 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 fair valuation is subject to market fluctuations outside of the loan scheme's control.

Reporting the fair value in the accounts has been a requirement of the generally accepted accounting practices in recent years.

Table 11 Fair value note to the accounts at 30 June 2004-2007

	30 June 2004 $ million	30 June 2005 $ million	30 June 2006 $ million	30 June 2007 $ million
Nominal value	6,821	7,499	8,370	9,413
Fair value	5,734	5,994	5,537	5,443
Ratio	84.1%	79.9%	66.2%	57.8%

Source: Student Loan Scheme Financial Statements for the year ended 30 June 2007.

The fair valuation of the loan scheme at 30 June 2007 was $5,443 million. This is 57.8 percent of the nominal or face value of the loan scheme's closing balance ($9,413 million) on the same date. Last year, the fair value calculated as at 30 June 2006 was $5,537 million (66.2 percent), while in 2005 (before the interest-free student loans policy was introduced) the fair value was $5,994, or 79.9 percent of the face value.

The fall in fair value between 2005 and 2006 is largely attributable to the effects of the introduction of interest-free loans. Between 2006 and 2007, as a percentage of the nominal value of the aggregate outstanding loan balance, the fair value dropped by 8.4 percentage points. The principal reasons for this decrease were: changes in the discount rate, the new overseas repayment rules, new data (especially on the proportion of overseas borrowers and their repayment patterns), new information about the timing of loan repayments, and assumptions about changes in the New Zealand economy. In particular, the risk-free rate upon which the discount rate was based increased from 5.75 percent to 6.19 percent between these valuations.

IFRS valuation

The value of the loans as reported in the government's accounts is measured in accordance with the IFRS accounting standards. Under these standards, once the initial fair value write-down rate is struck for lending to new borrowers in any year, it remains fixed for the lending to those borrowers in subsequent valuations.[36] Therefore, market changes in the value of money will no longer affect the accounts for that year's lending. Future revaluations will only show changes that have been measured in the loan scheme.

SLIM is used for annual IFRS-compliant valuations for the financial statements of the government. It is also used to help prepare the government's bi-annual fiscal and economic updates.

The following table summarises the loan scheme's value in the financial statements of the government over the last four years.

Table 12 Book value of the loan scheme at 30 June 2004-2007

	Book value prepared according to earlier accounting standards		Book value prepared according to IFRS	
	30 June 2004 $ million	30 June 2005 $ million	30 June 2006 $ million	30 June 2007 $ million
Nominal value	6,821	7,499	8,370	9,413
Book value	5,995	6,465	5,569	6,011
Ratio	87.9%	86.2%	66.5%	63.9%

Source: Student Loan Scheme Financial Statements for the year ended 30 June 2007.

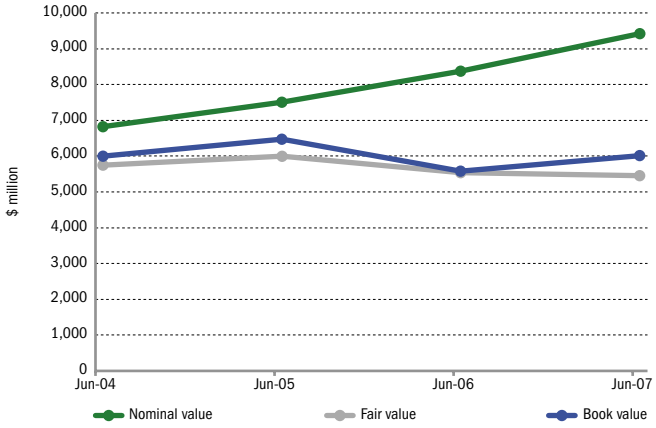
IFRS standards were first applied to the loan scheme in the financial year to 30 June 2006. The increase in the value between 30 June 2006 and 30 June 2007 reflects the fact that there was an increase over that period in the nominal aggregate loan balance as a result of new lending. In addition, some economic indicators show that average earnings have risen sharply in the recent past – boosting repayments of loans.

Figure 38 shows the book value of the loan scheme against its nominal value and its fair value between 2004 and 2007.

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

36 This is known as the effective interest rate.

Figure 38 The loan scheme's nominal value, book value and fair value at 30 June 2004-2007



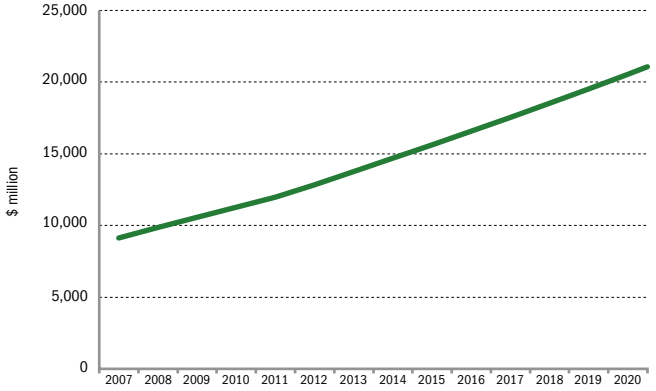
Source: Student Loan Scheme Financial Statements for the year ended 30 June 2007.

5.4 Long-term forecasting

Figure 39 shows a longer-term forecast prepared using the SLIM model results. This forecast uses the government's budget forecasts of lending and repayment up until 2011. Beyond that year, repayments are derived from an analysis of the SLIM model.[37]

By their nature, long-term forecasts are volatile and uncertain; modest changes tend to compound, leading to wide differences at long horizons.

Figure 39 Nominal loan balance projections 2007-2020



Source: Ministry of Education.

Before the implementation of the interest-free student loans policy in 2005, there was a decline in rates of loan uptake and also in the number of loan borrowers. There was a drop of 1.7 percent in the number of borrowers in 2005 compared with 2004.

In the most recent forecast, the average annual increase in the number of loan borrowers from 2007 to 2012 is estimated to be 2 percent per annum. The increase in the forecast rate of growth in borrowers reflects the impact of the interest-free policy and changes in the size and structure of the New Zealand population, participation rate forecasts and forecasts relating to economic conditions.

The average annual increase in total borrowing is expected to be 4.2 percent per annum from 2007 to 2012. The June 2005 estimate was a 3.8 percent average annual increase in total borrowings. Again, this projected increase is attributed to the introduction of the interest-free policy. From 2007 to 2012, the average increase in the average amount borrowed per borrower is expected to be around 2.1 percent per annum.

The estimates of overall outstanding student loan balances are sensitive to assumptions about participation in tertiary education. Reasonable variations in participation projections lead to estimates of total outstanding loan balances by 2020 ranging from $20.3 billion to $22.3 billion.

5.5 Predicted repayment times

SLIM models the changes in employment status, income and repayment rates that affect actual individual borrowers. The following tables and figures examine individuals' repayment times measured from when they finish their studies. The repayment experience of different groups of students has varied over time. The tables are restricted to those who last studied in 1999, did not study again in any of the years between 2000 and 2004 and remained in New Zealand. The modelling assumes that they are not returning to study before their loans are repaid.

Table 13 Percentiles of forecast repayment times for those who last studied in 1999, whose loans remained unpaid in March 2000 and who remain in New Zealand by gender

	10th percentile[38]	25th percentile	50th percentile /median	75th percentile
Forecast repayment time in years: Male	1.5	3.5	7.0	13.1
Forecast repayment time in years: Female	1.2	3.1	7.0	13.7

Source: Ministry of Education.

For more recent leavers, represented by those who last studied in 2003 and did not study in the following year and who remained in New Zealand, repayment times have fallen.

37 Each year the SLIM model is updated using the most recent integrated dataset. The results presented here are an analysis of the 2006 SLIM model. Note that the valuations (fair value and IFRS) have been prepared using the 2007 SLIM model.

38 The term 'percentile' is defined as follows: 10 percent of all borrowers have a repayment time less than or equal to that duration. Likewise, 25 percent of all borrowers repay less than or equal to the 25th percentile. The term 'median' is used for the 50th percentile or middle duration. Half the borrowers are above the median and half below.

Table 14 Percentiles of forecast repayment times for those who last studied in 2003, whose loans remained unpaid in March 2004 and who remain in New Zealand by gender

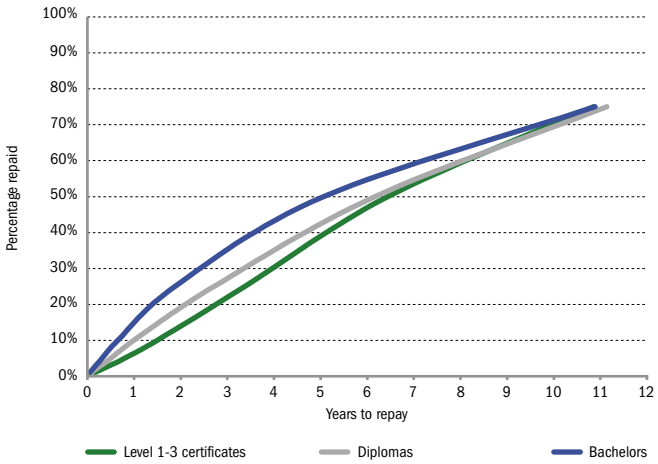
	10th percentile	25th percentile	50th percentile /median	75th percentile
Forecast repayment time in years: Male	0.9	2.5	5.8	10.9
Forecast repayment time in years: Female	0.8	2.3	5.7	10.6

Source: Ministry of Education.

Table 13 shows that half of those who left study in 1999 and stayed in New Zealand were forecast to have repaid within seven years. Table 14 shows that for the 2003 leavers, the median repayment time had fallen to 5.7 years for women and 5.8 years for men. The reduced repayment time for the 2003 leavers is largely due to the fee stabilisation policy that operated between 2000 and 2003, the removal of interest for those in study and the stronger labour market that the 2003 leavers encountered when they finished their studies.

Figure 40 looks at repayment times for recent leavers grouped according to the level of their studies. It combines three cohorts of leavers – those who last studied in 2001, 2002 and 2003. It models the distribution of the expected repayment times in years up to the 75th percentile.

Figure 40 Projected full repayment for recent leavers for selected levels of study (NZ based)



Source: Ministry of Education.

The median repayment time (or the 50th percentile) for those who studied at bachelors level was about five years. The 75th percentile – that three-quarters of the borrowers took less than – was nearly 11 years. People who studied at the diploma level took a little longer – the median repayment time was about six years. Those who had studied level 1-3 certificates took a little longer.