



MINISTRY OF EDUCATION

Te Tāhuhu o te Mātauranga

Paying off a student loan

**An analysis of progress to full repayment from
the integrated dataset**

Report

Paying off a student loan: an analysis of progress to full repayment from the integrated dataset

Author

Jamie Hyatt
Central Forecasting and Modelling Unit
Ministry of Education
Email jamie.hyatt@minedu.govt.nz
Telephone 64-4-463-8060
Fax 64-4-463-8088

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Disclaimer

Access to the data used in this study was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975. The results presented in this study are the work of the author, not Statistics New Zealand.

Summary Statistics New Zealand Security Statement: Integrated Data Disclaimer

The integrated dataset on Student Loan Scheme Borrowers is based on the integration of data from the Ministry of Social Development, the Inland Revenue Department and the Ministry of Education. This project has been approved by Statistics New Zealand as a data integration project with data access provided through the Data Laboratory under relevant legislation and policy. Only approved researchers who have signed Statistics New Zealand's declaration of secrecy can access the integrated data in the Data Laboratory. For further information about confidentiality matters in regard to this study please contact Statistics New Zealand.

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1 Abstract

This paper examines trends in the numbers of people who have fully repaid their student loans. It examines every cohort of borrowers as they leave tertiary education since the start of the scheme in 1992. It focuses in particular, however, on the experience of the 1992, 1994 and 1997 leaving cohorts. It examines the effect of completion status¹ and gender on the 1997 cohort, and the differences in progress to full repayment by gender for the 1992 and 1994 cohorts².

The study shows that, with each year post-study, around 7 percent more people have fully repaid their loans. Around 50 percent have fully repaid after seven years. The repayment profiles of men and women are very similar. For example, the median repayment time among those who last studied in 1994 was 6.6 years for both men and women. More women than men fully repay within five years after study, but the numbers of men and women who have fully repaid six years after study is similar. The numbers who have fully repaid five years after study have fallen over the 1990s. This, in large part, reflects the rise in tuition fees over that period. As the integrated dataset develops in time, it will be interesting to compare the post-study repayment patterns for those borrowing after interest write-off policy changes introduced in 2000, and the fee stabilisation policies implemented between 2001 and 2003.

There is also a brief discussion of the sizing the population who are likely to never repay. This paper is a companion study to another paper, *Who doesn't pay back?*³ which looks at the other side of the repayment picture, ie those who have made no progress to repayment,

2 Background

The integrated dataset on Student Loan Scheme borrowers (IDSL) contains linked data on all of those who used the scheme between 1997 and 2002 inclusive. In addition, it contains data on the loan balances of people who used the scheme in the years 1992 to 1996, but without any linkage to their borrowing or educational data⁴.

¹ 'Completion status' means whether the student was successful in completing a qualification or not.

² It is not possible to analyse progress to full repayment for the 1992 or 1994 cohorts by completion status or by any other educational variable as the loan data for those who used the scheme before 1997 is not linked to educational data.

³ Ministry of Education (2005c)

⁴ Refer to http://www.minedu.govt.nz/web/downloadable/dl10309_v1/about-the-integrated-dataset.doc for an explanation of the origin and construction of the integrated dataset, the privacy protocols that underly its management and the limitations on any analysis drawn from the dataset.

3 People who have fully repaid their student loan

Over the first five years following study, the numbers who fully repay in each year is fairly steady. Figure 1 below shows the proportion of the 1997 leavers who have repaid, by years out of study, for men and women and by completion status.⁵

Among those who completed a qualification in 1997 around 7 percent are completely repaying their loan in each of the five years. This figure does not vary by gender. Among the non-completed, repayment is slower, and females are more successful than males in totally repaying their loan: on average, 4.7 percent of males who did not complete a qualification and 5.1 percent of females repay their loan in each of the five years 1998 to 2002. The better progress to full repayment among women in the non-completed group has sometimes been thought to result in part from the fact that, while women and men are equally likely to use the Student Loan Scheme, women tend to borrow lower amounts each year⁶. However, Figure 8 below shows that in six of the first ten years of the scheme, the median loan balance of women leaving study exceeded that of men; because women have higher rates of completion in tertiary education and because they are more likely to study qualifications of longer duration, lower borrowing each year does not necessarily lead to lower loan balances on leaving study..

There is a suggestion in Figure 1 that for women who do not complete a qualification, the rates of full repayment⁷ are decreasing slightly as those who are less able to repay increase proportionately in the population of debtors. In the first year, 6.0 percent repay while in the fifth year 5.4 percent repay. Between these years, the rate falls steadily. For the other categories graphed (that is non-completed men and completed men and women), the rates of repayment are more complex, with completed students getting around 1 percent better at repaying *after* the first year and non-completing males remaining fairly steady and averaging 5.3 percent over the five years. Men who have completed a qualification appear to increase their full repayment rate more quickly than women who have completed as the number of years from study grows, reflecting the fact that men tend to earn higher incomes than women⁸.

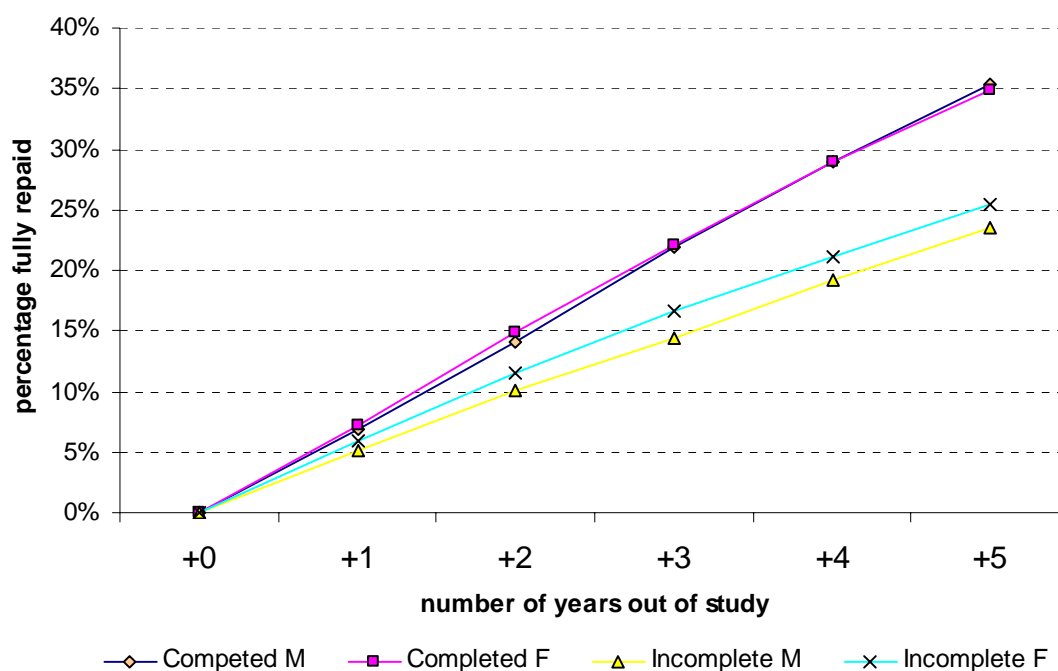
⁵ In the graphs and tables of this paper those who had repaid their loan before 31 March of the year following study have been excluded. These fast repayers have, however, been included in the calculation of median repayment times.

⁶ Refer to Ministry of Education, Ministry of Social Development and Inland Revenue (2004) p21

⁷ The rate of full repayment is the number who repay in a year divided by the number with debt at the beginning of the year. Rates of repayment for the 1997 cohort are given in Figure 9 in the appendix to this paper.

⁸ Refer to Figure 9 in the appendix to this report, for the actual year-by-year data.

Figure 1: Percentage of the 1997 leaving cohort who have fully repaid their Student Loan by gender and completion status



	in 1997 +0	in 1998 +1	in 1999 +2	in 2000 +3	in 2001 +4	in 2002 +5
Completed Male	0.0%	6.9%	14.1%	21.9%	28.9%	35.4%
Completed Female	0.0%	7.2%	14.9%	22.2%	28.9%	34.8%
Incomplete Male	0.0%	5.2%	10.1%	14.4%	19.3%	23.5%
Incomplete Female	0.0%	6.0%	11.5%	16.6%	21.2%	25.5%

Notes:

- 1 The leaving cohort is those who last studied in 1997, had borrowed from the Scheme, and had a loan balance of \$10 or more at 31 March in the following year. Excluded are 3.4% who had repaid their loan before 31 March 1998.
- 2 Full repayment is deemed to occur when the balance has fallen below \$10, and includes both tax non-resident and tax resident borrowers.
- 3 A student is deemed to have completed if he/she successfully completed a qualification in their last year of study.
- 4 The size of these groups can be seen in the appendix in figure 9.

Figure 2 shows the proportions who have fully repaid for three leaving cohorts by gender. The 1997 cohort is shown again but this time not disaggregated by completion status.

We see that five years after study, the 1994 cohort was more successful than the 1997 cohort at achieving full repayment - 38.8 percent of the 1994 cohort had repaid compared with 28.5 percent of the 1997 group. This is largely because of the rise in

the size of student loans on leaving study between these years - the median leaving balance in 1994 was \$5,910 while in 1997 it was 52 percent higher at \$8,960.⁹

The gap between women and men in full repayment, while not large, has widened at the five year mark. From the 1994 cohort, 0.7 percent more females than males had repaid after five years, a margin which grew to 2.0 percent with the 1997 cohort. The better performance of women reflects both the fact that women have a higher rate of completion of tertiary education than men¹⁰ and that they tend to be better represented in qualifications at degree level¹¹. And completion and the level of study are two of the key drivers of income and hence, of repayment rates.

The graph below shows that some time between 2000 and 2001, 50 percent of borrowers who last studied in 1994 fully repaid their loan. If we start measuring from 1 January 1995 and account for the 2.5 percent who had repaid before 31 March 1995 a very good measurement of the median repayment time for this cohort of tertiary leavers can be made. This shows a median repayment time of 6.6 years for both men and women.

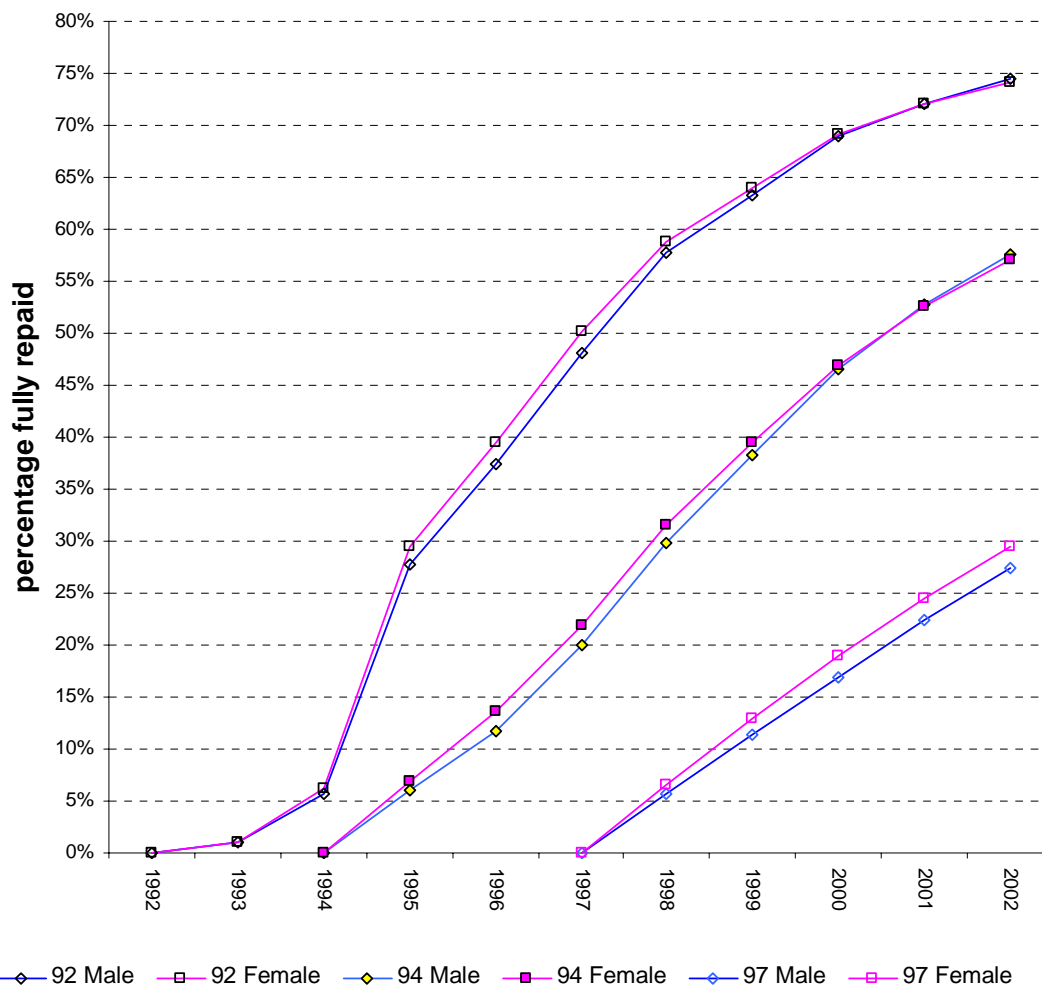
1992 was the first year of the student loan scheme. The cohort of borrowers who last studied in 1992 is unusual then, in that they had at most one year to accumulate student loans - their median leaving balance was \$3,170. While half of these students managed to repay in a little over 5 years, after 10 years, one quarter still have a student loan. However progress has not stopped. Of those with outstanding balances in 2001, 8 percent managed to repay in 2002, and it seems likely that over the following three years further progress will be made with perhaps 80 percent having made full repayment.

⁹ Figure 8 at the end of this document shows median leaving debt by gender for each leaving cohort. One of the key influences on leaving debt is fee levels. Fees increased significantly between 1992 and 2000. Refer to Ministry of Education, Ministry of Social Development and Inland Revenue (2004) p11.

¹⁰ Refer to Ministry of Education (2004a), pp 17, 18 and pp 53, 54. Refer also to Ministry of Education (2004b), Appendix Tables, Table 3.29, p 51.

¹¹ Refer, for instance, to Ministry of Education (2004b), Appendix Tables, Table 3.26, pp 44, 45.

Figure 2: Percentage who have fully repaid for the 1992, 1994 and 1997 leaving cohorts by gender



	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
92 Male	0.0%	1.1%	5.7%	27.7%	37.4%	48.1%	57.8%	63.3%	69.0%	72.2%	74.5%
92 Female	0.0%	1.1%	6.1%	29.5%	39.5%	50.1%	58.8%	63.9%	69.1%	72.0%	74.1%
94 Male			0.0%	6.0%	11.8%	19.9%	29.8%	38.2%	46.6%	52.8%	57.5%
94 Female			0.0%	7.0%	13.6%	22.0%	31.5%	39.5%	46.8%	52.6%	57.1%
97 Male						0.0%	5.7%	11.4%	16.9%	22.5%	27.4%
97 Female						0.0%	6.5%	12.9%	18.9%	24.4%	29.4%

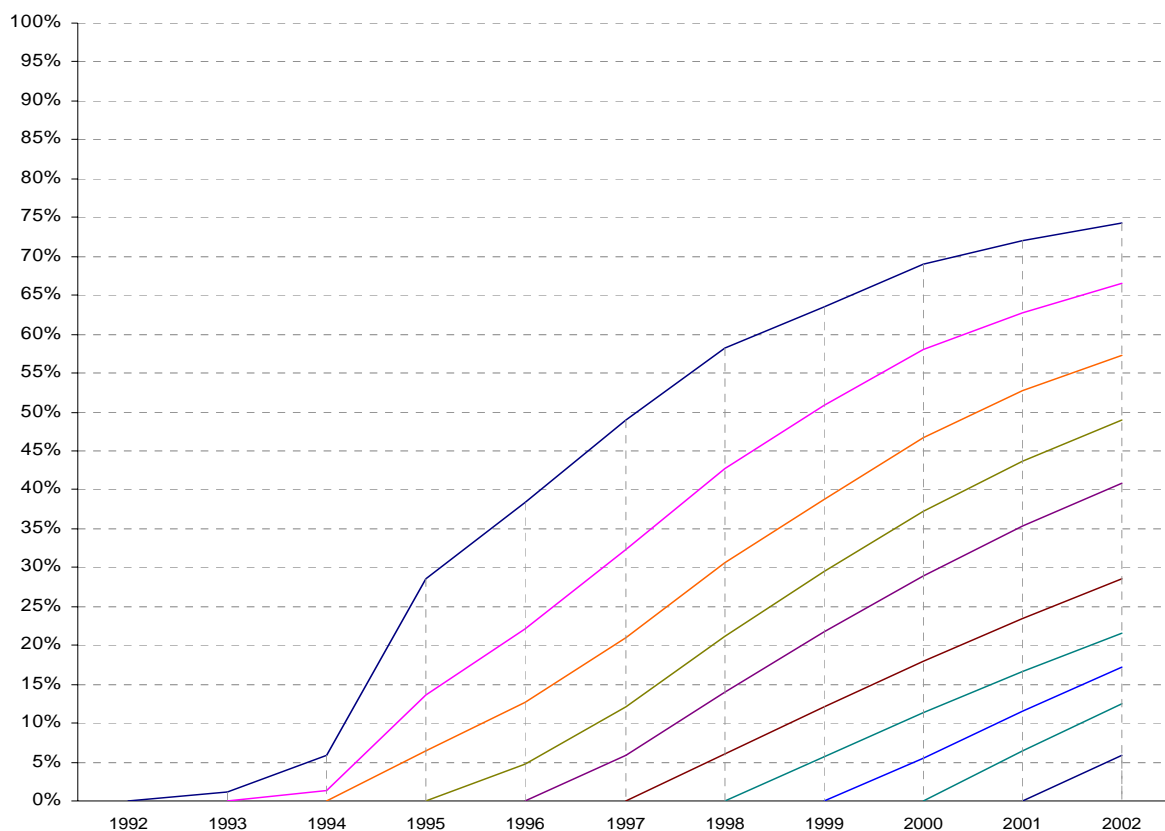
Notes:

- 1 The leaving cohorts are those who last studied in a given year, had borrowed from the Scheme, and had a loan balance of \$10 or more at 31 March in the following year.
- 2 Full repayment is deemed to occur when the balance has fallen below \$10, and includes both tax non-resident and tax resident borrowers.
- 3 The percentages in this graph relate to the situations of borrowers on 31 March of the year following the year shown on the x-axis.
- 4 The size of these groups can be seen in the appendix in figure 8.

Figure 3 shows all leaving cohorts' progress to full repayment. The proportion repaid at duration two years post-study has remained fairly stable at around 12.5 percent while at longer durations, the proportion repaid is falling. For example, after five years, 43 percent of the 1993 cohort had repaid while, of the 1997 cohort at the same duration, only 29 percent had repaid, reflecting the increase in the average leaving loan balance between those two cohorts.

Leaving aside the 1992 cohort, there appears to be two groups, 1993–1996 and 1997–2001. The earlier group show increasing rates of repayment up until duration four or five years followed by a gradual decrease. The latter group are remarkably steady in their rates of repayment with around 6 percent of those with loans fully repaying in each year – irrespective of duration since study or cohort year.

Figure 3: The percentage of leavers who have fully repaid 1992-2001



Leaving Cohort	Duration since last study										
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10
1992	0.0%	1.1%	5.9%	28.5%	38.4%	48.9%	58.2%	63.5%	69.0%	72.1%	74.3%
1993	0.0%	1.2%	13.7%	22.1%	32.3%	42.7%	50.8%	58.1%	62.7%	66.5%	
1994	0.0%	6.4%	12.7%	20.9%	30.6%	38.8%	46.7%	52.7%	57.3%		
1995	0.0%	4.8%	12.1%	21.1%	29.4%	37.2%	43.6%	48.9%			
1996	0.0%	5.8%	13.9%	21.8%	28.9%	35.4%	40.9%				
1997	0.0%	6.1%	12.2%	17.9%	23.5%	28.5%					
1998	0.0%	5.7%	11.4%	16.6%	21.5%						
1999	0.0%	5.4%	11.5%	17.1%							
2000	0.0%	6.5%	12.5%								
2001	0.0%	5.9%									

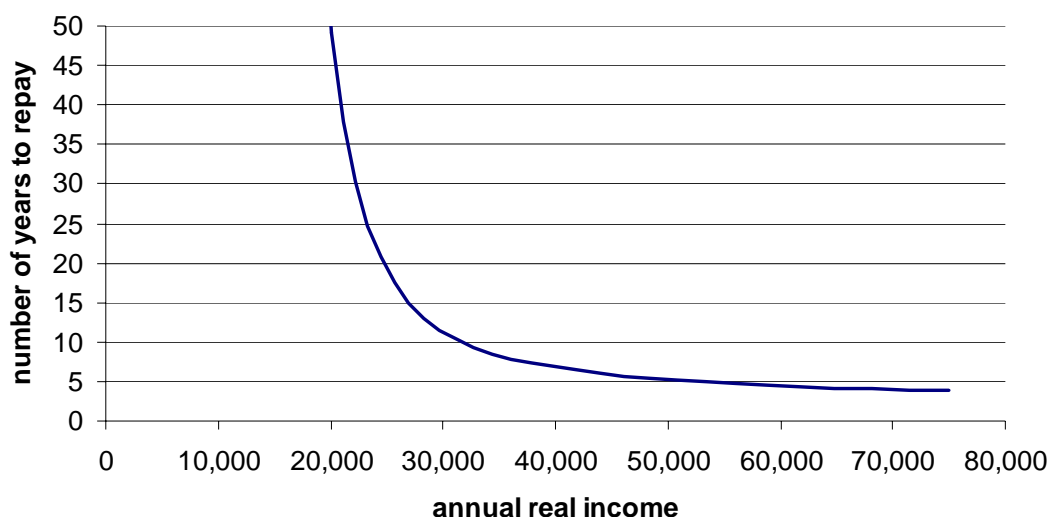
Notes:

- 1 The leaving cohorts are those who last studied in a given year, had borrowed from the Scheme, and had a loan of \$10 or more at 31 March in the following year.
- 2 Full repayment is deemed to occur when the balance has fallen below \$10, and includes both tax non-resident and tax resident borrowers.
- 3 The size of the leaving cohorts can be seen in the appendix in figure 8.

4 Some loan borrowers will never repay

If a Student Loan Scheme borrower has a low income, he or she will struggle to repay the loan in full¹². If the borrower's future income profile below a certain threshold (given the level of his or her student loan) the student loan will never be repaid.

Figure 4: Number of years required to repay a \$10,000 loan as a function of income



Note:

The key assumptions underlying this projection are:

- Annual taxable income grows by the consumer price index (CPI) only
- Threshold for repayment grows by CPI
- The borrowers do not die
- The borrowers are in constant employment
- Repayments are made continuously over the year
- No voluntary repayments made

If an individual has a loan balance on leaving study of \$10,000 and an income of \$25,000 in the year following study and if that income grows only at the rate of the increase in the consumer price index, then the estimated time to repayment is 17.6 years. If the income is below the repayment threshold, then clearly full loan repayment will never be achieved.¹³

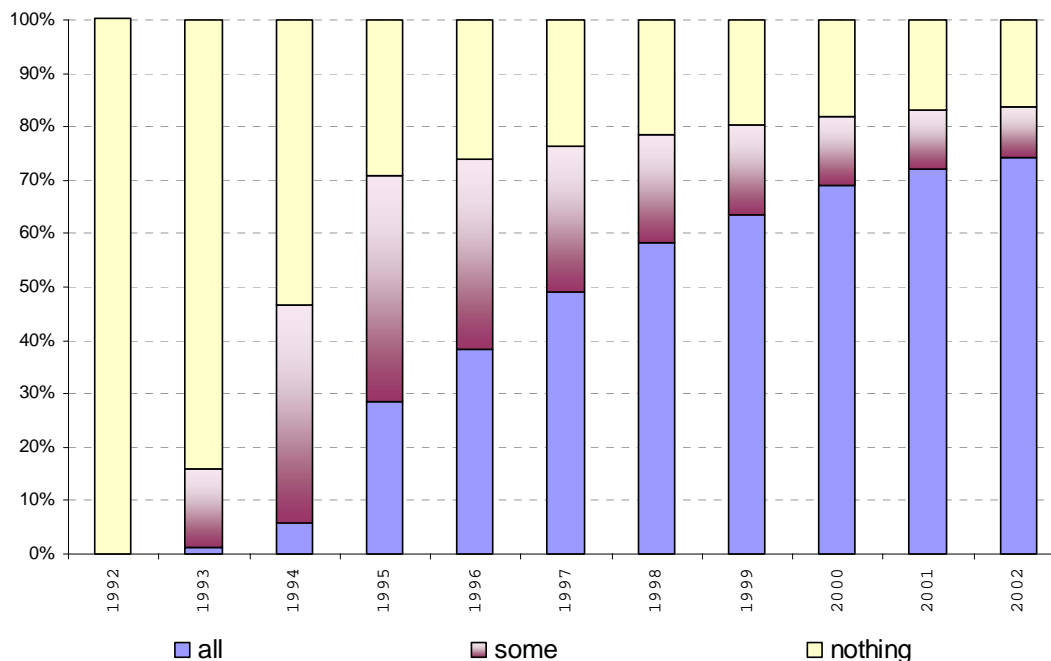
Figure 5 shows the 1992 cohort's progress to repayment over time by dividing it into three groups. Those who have fully repaid are in the bottom group, those who have reduced their loans but not yet fully repaid are in the middle, and those whose balance is equal or greater in 2002 than the loan when they left study are at the top. The graph shows the middle group diminishing and squeezed between those who have made no progress (which is diminishing only slowly) and the repaid group (which continues to

¹² The New Zealand Student Loan Scheme is a targeted scheme. Details of the targeting provisions can be found in Ministry of Education, Ministry of Social Development and Inland Revenue (2004).

¹³ An income slightly larger than the repayment threshold is also insufficient for full repayment in the absence of voluntary repayments.

grow). Ultimately the number who have repaid will approach a maximum, dividing the cohort into those who can and have repaid and those who won't.

Figure 5: Proportions who have: repaid all, repaid some, and repaid nothing of their student loans from the 1992 cohort of tertiary leavers



Through life, people move in and out of the workforce, have periods of low or part time employment, and may later return to a period with a more generous income. The question of sizing those who will never repay comes down to sizing those likely to have low life time earnings, or who remain outside New Zealand without meeting their non-resident repayment obligations.

There is a particular need to understand the dynamics of the no progress group. For example, how much return movement is there from the 'repaid some' group? To what degree is the no progress group dominated by the non-domiciled? And what has been the scheme's experience of debtors who return from overseas?

Later leaving cohorts (Figures 6 and 7) exhibit larger proportions that have made no progress towards repaying their student loan. Five years after study, 24 percent of the 1992 cohort had made no progress to repayment. At the same duration post-study, 30 percent of the 1994 crowd had made no progress and around 40 percent of the 1997 leaving cohort had made no progress in the five years following study. These differences again, reflect the increase in the levels of loan balances on leaving study that occurred as fees rose and as the Student Loan Scheme became embedded as the norm as a means by which students finance their studies.

Figure 6: Proportions who have: repaid all, repaid some, and repaid nothing from the 1994 cohort of tertiary leavers

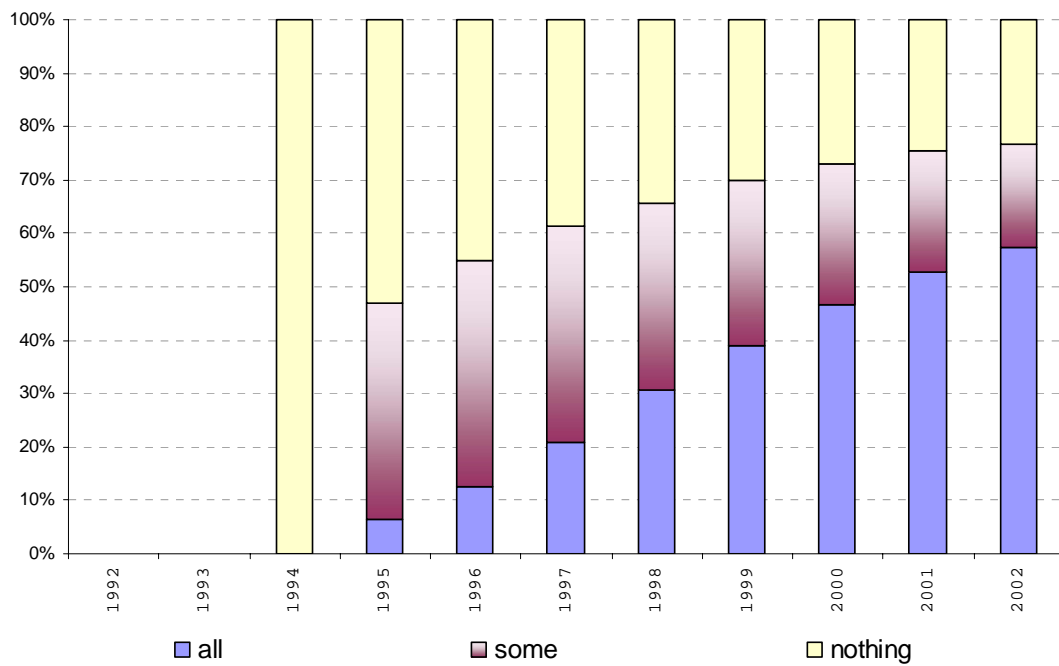
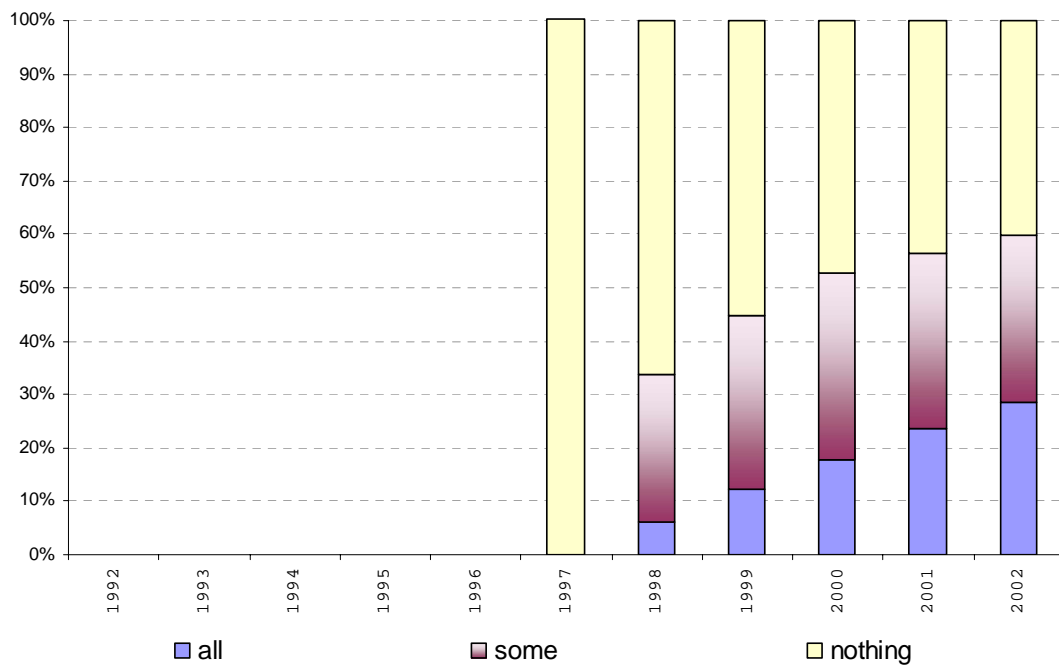


Figure 7: Proportions who have: repaid all, repaid some, and repaid nothing from the 1997 cohort of tertiary leavers



Appendix – further data

Figure 8: Number of borrowers and median leaving loan balance by gender by last year of study

Last studied year	Number in population			Median leaving loan balance		
	Male	Female	Total	Male	Female	All
1992	6,948	5,904	12,852	3,140	3,190	3,170
1993	10,245	9,093	19,338	4,510	4,650	4,570
1994	13,086	12,642	25,728	5,880	5,930	5,910
1995	14,550	14,757	29,307	6,720	6,580	6,650
1996	15,258	15,483	30,741	7,450	7,570	7,500
1997	14,211	15,003	29,214	8,730	9,150	8,960
1998	18,198	18,876	37,074	9,770	10,010	9,900
1999	20,148	23,058	43,206	9,430	8,940	9,160
2000	20,907	25,086	45,993	9,550	8,640	9,130
2001	25,242	30,633	55,875	9,750	8,780	9,250
Total	158,793	170,535	329,328			

Figure 9: Annual rates of full repayment for the 1997 leaving cohort by gender and completion status

	Number	in 1998	in 1999	in 2000	in 2001	in 2002
		+1	+2	+3	+4	+5
Completed Male	4,728	6.9%	7.8%	9.0%	9.0%	9.1%
Completed Female	6,336	7.2%	8.3%	8.5%	8.7%	8.3%
Incomplete Male	9,483	5.2%	5.2%	4.8%	5.7%	5.3%
Incomplete Female	8,667	6.0%	5.9%	5.7%	5.5%	5.4%

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