

Student Loans

The Empirical Record

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Abstract. *Student loan programmes have been the target of a good deal of attention in recent years and one important set of concerns has focussed on the levels of borrowing and the associated debt loads. This paper presents the results of an empirical investigation of borrowing and repayment patterns of four recent cohorts of post-secondary graduates based on the National Graduates Survey (NGS) databases. The paper should be relevant to those interested in access to post-secondary education and the well-being of students, the financing of the higher education more generally, and a range of related issues.*

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I. Introduction

Student loan programmes have been the target of a good deal of attention in recent years, and one important set of concerns has focussed on the levels of borrowing and the associated debt loads. Recent post-secondary students appear to have been borrowing more, paying off their debts more slowly, and defaulting in

larger numbers than before. This has resulted in concerns regarding, not only the hardship faced by students in the post-schooling payback period, but also access to the post-secondary system, as it is felt that individuals have been foregoing, delaying, or slowing down their studies due to the rising debt burdens, and that other decisions such as field of

study, which particular institution to attend, part-time versus full-time enrolment, outside work during school, and going on to graduate school, have been affected as well.

These concerns are, furthermore, occurring in the face of some important changes in the federally-run Canada Student Loan Program and the related provincial programmes and the costs of education *per se*. CSLP lending limits have been raised, need assessment procedures have been revised, the interest relief programme has been extended, debt reduction has been introduced, the primary responsibility for loan defaults has passed from the government to the banks, provincial grant systems have been effectively replaced with loans — all occurring as tuition fees have been steadily rising.

Despite the importance of these issues, there is a general dearth of empirical evidence regarding the Canada Student Loans Program and student borrowing in general. The contribution of this paper is, then, to update and extend earlier work by the author (Finnie [1994], Finnie and Garneau [1996a, b], Finnie and Schwartz [1996, 2000]) by presenting the results of an empirical investigation of borrowing and repayment patterns of four recent cohorts of post-secondary graduates. The analysis is based on the National Graduates Survey (NGS) databases. These comprise large, representative surveys of those who graduated from Canadian colleges and universities in 1982, 1986, 1990, and 1995 and include information on students' borrowing from government loan programmes and the repayment of those debts. Graduates at the College, Bachelor's, Master's, and Doctoral level are included in the analysis, which is broken

down along these lines as well as by sex.

The paper thus provides answers to the following questions: What proportion of students has been taking out student loans and what amounts have they been borrowing? How do these amounts compare to post-graduation earnings levels? What are the repayment rates in the years following graduation? How many graduates are encountering problems with their debt loads? What are the characteristics and circumstances of those experiencing repayment difficulties? How do these patterns vary by gender and level of education? What are the trends over time?

This paper should, therefore, be of interest to those directly interested in the economic situation of students and the financing of the post-secondary system in Canada; to those more narrowly interested in the performance of the CSLP and the related provincial programmes, including those with an eye to their further reform; and to those interested in a range of related issues pertaining to post-secondary students, the post-secondary system in general, the well-being of younger workers, and more.

II. The Data¹

II.1 The National Graduates Surveys

This research employs four waves of the National Graduates Survey (NGS) databases, which represent those who successfully completed their programmes at Canadian universities and colleges in 1982, 1986, 1990, and 1995. For each cohort, information was gathered during interviews carried out two and five years after graduation. The analysis presented here is based on the first surveys for each cohort (carried out in 1984, 1988, 1992,

1997) which include the pertinent information on student loans.

These databases, developed by Statistics Canada in partnership with Human Resources Development Canada, are well suited to the analysis for a number of reasons. First, the NGS files are quite large in terms of the target populations, with each survey including approximately 30,000 university and college graduates, thus facilitating the sort of detailed analysis of post-graduation experiences that general survey databases could not. At the same time, their representative nature allows the results to be generalised to the population of graduates at large.²

Second, the availability of data for four different cohorts permits the more enduring patterns to be separated from those which have been shifting over time, while also bringing the record as up to date as possible.

Third, the sample frame and the timing of the interviews (two years after graduation) provide a perspective of the relevant outcomes (*e.g.*, the amount of debt paid down) which is precisely situated at a specific point in time relative to graduation, thus providing a coherent view of the results among those included in the surveys.

Finally, most crucial to this project is that the databases contain a selection of variables related to student borrowing, including the amounts borrowed, the debt remaining two years after graduation, and self-identified problems with making loan repayments. This loan information can, in turn, be linked to the individual's educational, labour market, and socio-demographic characteristics available on the files.

II.2 Selection of the Working Samples

The major set of restrictions were imposed to eliminate graduates who had not actually completed their education at the time they finished the programmes in question (*i.e.*, those graduated from in 1982, 1986, 1990, 1997) so as to have a clearly defined framework of analysis in which students are captured at this precise — and critical — point in the school-to-work transition: that is, we focus on total accumulated borrowing by the end of the individual's schooling and payback rates in the post-schooling period.³

Graduates with any of the following characteristics were therefore dropped from the analysis: those who obtained an additional "major" diploma by the first interview, part-time workers who cited school as the reason for their only partial involvement in the labour market, those not currently (as of the first interview) looking for work due to school, and those currently enrolled in a (major) diploma programme.⁴

The key loan variables were then verified for consistency and a small number of records were either dropped or corrected. Finally, observations were not included in specific tables when the required information was missing or deemed likely erroneous.

III. The Empirical Findings

III.1 Levels of Borrowing

Table 1 shows the levels of borrowing from student loan programmes as of graduation by degree level, sex, and cohort.⁵ Two sets of numbers are presented: the proportion of graduates with loans, and the mean amount owed for those who borrowed (all dollar measures

are given in constant 1997 dollars). These amounts reflect *total* borrowing from governments (including the provinces), not just through the federal programme (CSLP), reflecting the information given in the NGS databases.

For both College and Bachelor's graduates, borrowing generally grew across the four cohorts. At the College level, the incidence of borrowing rose from 1982 to 1986, then remained approximately stable to finish at rates of .41 and .44 for men and women of the class of 1995. The mean levels of borrowing among College graduates with loans, however, rose much more significantly, from just under just under \$4,000 for the 1982 cohort to around \$9,500 for the class of 1995 (both males and females both). Among Bachelor's graduates, the incidence of borrowing rose more moderately, especially for men, to finish at rates of .47 and .45 (versus .45 and .39 for the earliest cohort), but mean amounts again increased sharply, growing from around the \$6,000 mark for the 1982 cohort to \$13,390 and \$13,840 for the most recent group for men and women respectively.

Turning to upper level graduates, the incidence of finishing with a student loan at the Master's level increased moderately, from rates of .32 and .31 in 1982 to .37 and .35 in 1995, while the mean amounts borrowed again rose more sharply, from around the \$6,500 mark to \$13,250 (men) and \$14,040 (women). Ph.D. men were an exception to the other groups in that they actually had significant drops in the incidence of borrowing from 1982 through 1995, finishing at a rate of just .23, by far the lowest of all sex-education groups, while for women the borrowing rate rose from a very low level of .22 to .29 over this period. Average amounts borrowed rose substantially for both groups,

from just over \$5,000 to \$12,450 and \$13,130 for males and females in 1995.

To measure the rise in overall borrowing in a manner which simultaneously reflects the changes in the incidence of borrowing and the average amounts borrowed, Table 2 shows the incidence of borrowing times the mean amount borrowed for each group, thus effectively representing average borrowing over *all* graduates (including non-borrowers). The trends thus reflect the mostly moderate increases in the incidence of borrowing in conjunction and uniformly substantial rises in mean amounts borrowed, with overall borrowing rising from a little over \$1,000 to around \$4,000 at the College level (males and females), from between \$2,000 and \$3,000 to over \$6,000 among Bachelor's graduates, from about \$2,000 to a little under \$5,000 for Master's finishers, from a little under \$2,000 to just below \$3,000 for men at the Ph.D. level, and from just beyond the \$1,000 level to almost \$4,000 for their female classmates.

In summary, borrowing generally rose significantly over this period, with overall (real) borrowing more than doubling in all cases except for Ph.D. men. It is also interesting to note that the timing of the increases in the mean amounts of borrowing — increases from the 1982 cohort to the 1986 group, approximate stability out to 1990, and then further rises from 1990 to 1995 — correspond to the increases in lending limits instituted by the CSLP (from \$50 per month of eligibility to \$100 in 1984, and then first to \$105 and then \$160 per month in 1992 and 1994) and the substitution of loans for grants at the provincial level over this period. It would, therefore, appear that many (most?) students have chosen to borrow more when given the chance, and may have had financial needs even beyond these levels

which the loan system has not been adequately meeting (*i.e.*, students appear to have been “supply constrained” in their borrowing). On the other hand, student loans can, with the zero interest rates faced during school, also represent “free money” which would almost automatically be taken up by qualifying students regardless of actual need — so the evidence of borrowing up to the established limits does not, taken on its own, prove in any definitive manner that students have indeed been strapped for cash. The evidence presented below on repayment rates and related problems suggests, however, that at least a good part of the extra borrowing was in fact “real”.

It is interesting to note the similar borrowing levels across all three degree levels at the university level, which indicate that borrowing at the Master’s and Ph.D. levels should not necessarily be thought of as representing additional accumulations on top of what the averages indicate at the undergraduate level. There are at least three reasons why borrowing levels might be so similar across the different degree levels. First, those who go on to higher degrees are typically the better students and have, therefore, presumably received more financial support in the form of bursaries and scholarships at the lower degree levels, thus reducing their demand (and eligibility) for loans at that point. Second, individuals from higher socio-economic backgrounds have less need for loans and are less likely to be eligible for borrowing, while also being more likely to go on to graduate studies, thus generating a further (negative) correlation between borrowing at the lower degree level(s) and ultimate educational attainment (which is what is being measured here). Finally, higher levels of accumulated debt could deter certain individuals from

continuing with their studies. Disentangling these factors is, however, a task beyond the scope of the present paper and the NGS data.

Table 3 provides detail beyond the mean borrowing levels presented above by showing the distribution of loans by dollar level for the 1990 and 1995 cohorts.⁶ There were — as would be expected from the substantial increases in mean borrowing levels seen above — general shifts of the distributions of borrowing to the right over this interval, including substantial increases in the top three ranges. In particular, the number of university graduates with loans of \$15,000 or more rose from the 15-20 percent range for the 1990 cohort to 30-40 percent for the class of 1995 (depending on the particular sex-level group), and the incidence of graduates with at least \$30,000 in borrowing rose from a negligible 1-2 percent to the 4-6 percent range over this period (generally lower rates among College graduates). Such variation means that any analysis of the student loan system needs to go beyond consideration of the “average” graduate and take the existence of much more substantial levels of borrowing on the part of some individuals into account. On the other hand, media reports of borrowing at levels as great as \$60,000 (which seems to have been a popular figure cited for the last half-decade or so) should be seen as extreme outliers rather than anything like the norm.

Borrowing by major field of study at the Bachelor’s level is shown in Appendix Table A1. Interestingly, the results indicate that — apart from the anticipated higher levels for second degree professional graduates (law, medicine) — there are no obvious patterns across the different fields. In particular, borrowing does not seem to be related to future earnings

patterns (Finnie [2000b]). It is also instructive to note the generally similar levels of borrowing of male and female graduates within a given discipline. These findings suggest that student borrowing cannot be explained by a standard life cycle model whereby those with higher expected earnings (*e.g.*, graduates from engineering, computer sciences, commerce, or mathematics and physics) borrow greater amounts, to be paid out of later earnings in order to shift more consumption forward in time. Instead, borrowing would appear to be largely supply-constrained; that is, individuals have been borrowing up to the limits permitted.⁷

III.2 The Burden of Student Loans

One simple measure of the burden which this borrowing has represented is to debt-to-earnings ratios, defined here as the amount owed to student loan programmes at graduation divided by the annual rate of pay in the job held at the first interview. A higher ratio therefore represents a greater debt burden and *vice versa*. These ratios can, by definition, be calculated only for those with jobs as of the first interview. (In a later section, non-workers are included in an analysis of repayment problems.)⁸

Median debt-to-earnings ratios (means are overly sensitive to outliers) by degree level, sex, and cohort are shown in Table 4. Among university graduates, debt burdens decline substantially with degree level, especially for women, primarily due to the underlying earnings patterns (See Finnie [1999] for the underlying earnings patterns). College graduates' burdens have been roughly similar to those at the Master's level — the former group characterised by less borrowing but substantially lower earnings as well.

For all groups, debt burdens generally rose over time. These increases were, furthermore, driven almost entirely by the increases in borrowing levels reported above, since average earnings were relatively steady over this period — at least over the first three cohorts. Unfortunately, comparisons of the trends right through the 1995 cohort are confounded by a change in the earnings measure for the latest group — and one which would appear to have affected women's measured earnings more than men's.⁹

Debt-to-earnings ratios vary in a predictable pattern by field of study (Table A2), and as borrowing levels have already been noted to be fairly similar by field, these debt-to-earnings ratios reflect the associated earnings patterns (Finnie [2000b]). For example, for men of the 1995 cohort, the ratios range from lows around the .30 mark (Commerce, Engineering, Computer Science, and No Specialization) to a high of .60 (Elementary Teaching). The ratios are generally higher for women than men (see below), but follow roughly the same pattern by field. Of perhaps some surprise are the rather high debt-to-earnings ratios among Medical School graduates. This group was already seen to have very high debt levels, while these ratios indicate that their starting salaries were not commensurately elevated. It would, however, be interesting to see what happened in the longer run after internships and residencies were completed and their salaries better reflected their longer-run earnings levels.

The results also show that debt burdens have been generally higher for women than men, except at the Ph.D. level, as the similar borrowing levels by sex translate into higher burdens for women due to their generally lower earnings. In most

cases, however, the ratios are considerably more equal by sex within a given field of study (Table A2 again) than for all graduates taken together (at least for the Bachelor's graduates shown), and are actually lower for women than men in certain fields (*e.g.*, Engineering and Mathematics and the Physical Sciences in the 1995 cohort). A good part of the higher average debt burden of female graduates — at least at the Bachelor's level — would, therefore, appear to be due their being over-represented in generally low income fields (for men as much as women) rather than having lower earnings in a given field of endeavour.

Finally, the full distributions of debt-to-earnings ratios are given in Table 5. These results again show the great variation in situations faced by graduates with respect to their student loans — in this case seen in terms of some graduates facing debt burdens which are effectively negligible while others have much greater loads.

III.3 Payback Rates

Average payback rates by the first interview, two years after graduation, are shown in Table 6.¹⁰ The "Unweighted" columns (representing the mean payback rate across all individuals who had loans) show that for the most recent cohort, College and Bachelor's students graduates had paid back an average of two-fifths of the debt levels they had at graduation, the Master's group had repaid a little over one-half, and Ph.D. graduates slightly greater amounts. In virtually all cases, however, there were clear declines in the amounts which had been paid back for each succeeding cohort. The declines were, furthermore, mostly greater for women than men, and in some cases the changes were quite substantial (*e.g.*, from .56 to .38 percent for College Women and from .72 to .57 for Ph.D. Women). These

findings thus point to more recent graduates having significantly greater difficulty in repaying their student loans. These findings also reflect back on the nature of the increased borrowing over this period, suggesting that the increased loans were in fact for genuine needs and not held just for the investment opportunities which the zero interest paid during school can represent (such loans presumably to be promptly paid back at graduation).

Interestingly, the gender differences in repayment rates do not generally correspond to their relative ability to pay as measured above. For the 1995 cohort, for example, female graduates' payback rates were either slightly greater than males' (at the Ph.D. level), equal (Master's), or at most 4 points lower (College and Bachelor's), while their debt-to-earnings ratios were previously seen to be mostly about 10 percent higher (except in the case of Ph.D. graduates, where they were slightly lower).

In short, women have been generally repaying their loans at relatively similar or higher rates than men even though their borrowing seems to have represented a greater burden when related to their (lower) earnings levels. This gender similarity in payback rates might at first be attributed to the standard repayment schedules which called for loans to be redeemed at a steady rate over the ten years following graduation, regardless of the size of the loan or any assessed ability to pay (the system which prevailed until the banks took over the primary responsibility for default in 1995). Payback rates thus varied only when individuals fell behind on their payments or chose to repay more quickly. That scope for departure did, however, in fact result in substantial variations in payback rates (see further evidence on this below), so the gender

patterns would appear to reflect actual differences in underlying behaviour to at least some degree.

It would, then, appear that women's attitudes towards student debt have been somewhat different than those of men. Perhaps they have been less comfortable with a given amount of borrowing and/or have preferred to repay their loans at faster than standard rates because they have anticipated spending periods out of the labour market due to child-bearing. Alternatively, perhaps women have simply been "more responsible" in avoiding non-payments. In any case, it is interesting to speculate as to whether such gender differences may affect various schooling decisions which are sometimes related to borrowing, including not only the decision to attend or not to begin with, but the choice of institution and programme, the decision to on to graduate studies, and so on. It is also possible that any gender differences in borrowing-repayment behaviour might have broader implications beyond the student loans system *per se* (e.g., other types of borrowing-related behaviour).

Differences in payback rates by field of study are given in Table A3. They are roughly correlated with the debt-to-earnings ratios seen previously in that graduates in disciplines with higher debt burdens have tended to pay back their loans more slowly, but the patterns are not particularly strong and there are numerous clear exceptions (e.g., the extraordinarily low payback rates of lawyers). As in the aggregate, women's payback rates are mostly not nearly so low relative to men's (or even higher) as one might have predicted from the debt-to-earnings ratios previously observed.

Table 7 shows the full distribution of repayment rates for the 1995 and 1990 cohorts. At one end of the distribution, between 20 and 40 percent of all graduates had repaid their loans entirely by two years after graduation (the last column in the table), these fully-paid groups generally being larger at each higher degree level. At the other end, between 30 and 50 percent had repaid less than 25 percent of their debt (the first two columns taken together). These findings demonstrate that payback rates have often departed from the standard ten-year schedule. Interestingly, the percentage of graduates with either fully repaid debts or relatively little paid back (0, 25 percent or less) did not change in a coherent fashion from the 1990 cohort to the 1995 cohort (*i.e.*, they did not consistently reflect either higher or lower payback rates) — the specific changes depending on the particular sex-education group. This might in turn suggest that fortunes at the individual-level were diverging over time — a notion which is consistent with the widening of the earnings distributions among graduates over this interval reported in Finnie [1999].

To allow for the fact that payback rates might vary with the amount of borrowing and to assess the repayment rate of the entire debt load summed across all graduates of a given sex-education group, payback rates weighted by initial loan level are provided in the second panel of Table 6.¹¹ In the majority of cases the weighted repayment rates are lower than the unweighted rates, indicating that those with less borrowing have indeed typically been paying back their loans more quickly than those with more loans, but the differences are not particularly great and the opposite pattern holds for

some groups. The gender patterns prevail as in the unweighted calculations.

III.4 Difficulties With Repayment

While the NGS databases do not include any information on loan default, for the 1990 and 1995 cohorts they have the responses to a question which asked individuals who still had outstanding loans as of the first interview if they had been encountering “difficulties” with repayment (see Finnie [2000c] for a discussion of this measure). The results, shown in Table 8, indicate that among College, Bachelor’s, and Master’s graduates, 29 to 33 percent of those still holding debt reported such problems, while the rates were 21 and 23 percent for the male and female graduates at the Ph.D. level. In each case except for Ph.D. women, these rates were greater than those which held in 1990, in many cases rather substantially so.

These findings should, however, be placed in a broader context. When we take into account that only between one-quarter and just under one-half of all graduates had loans upon graduation and that 20 to 40 percent of those borrowers had repaid their debt entirely by the first interview (as seen above), the proportion of all post-secondary graduates who reported repayment difficulties was 14 and 15 percent for College level males and females, 12 and 14 percent for those at the Bachelor’s level, 12 and 14 percent among Master’s graduates, and 11 and 10 percent for men and women at the Ph.D. level. These rates are still considerably higher than those which held for the 1990 cohort, but remain fairly low in absolute terms — and probably much lower than what many readers would have expected.

Female graduates generally had greater incidences of repayment problems than did men, which is consistent with the

debt-to-earnings ratios seen earlier, but the gender differences are not as great as the debt-to-earnings ratios might have suggested — as was the case with the repayment rates themselves. It is again not clear how to interpret these findings, but they remain interesting in terms of pointing to gender differences in behaviour and/or attitudes with respect to student debt — with potential implications beyond this.

It is also interesting to note that the rates of difficulty were roughly similar for College graduates and those at the Bachelor’s and Master’s university levels, despite the differences in earnings and debt-to-earnings ratios across these groups. The lower rate of difficulty at the Ph.D. level is, on the other hand, hardly surprising given their higher earnings and lower debt levels.

Given the differences in debt-to-earnings ratios by field of study noted above, we might expect there to be a corresponding pattern with respect to the proportion of graduates with repayment problems. This is indeed the case, as shown in Table A4, with the incidence of repayment problems being as high as 51 and 41 percent for male and female Fine Arts and Humanities graduates (1995 cohort), and as low as 18 and 27 percent for Engineering graduates. It is notable that the surprisingly high debt-to-earnings ratios for Medical graduates seen earlier do not translate into inordinately high rates of repayment problems, suggesting that their earnings levels two years after graduation are indeed not good indicators of their true ability to pay; in any event, student debt repayment has not been a particularly onerous problem for them to date (although skyrocketing tuition levels at some institutions may have changed this situation).

It is particularly pertinent to the design and refinement of the government loan systems to know the characteristics of graduates who have been having problems with the repayment of their loans so that any appropriate assistance can be as precisely and efficiently targeted as possible. In this context, Table 9 reports the relationship between loan problems and labour market status (again for those who still owed money as of the first interview) for the 1990 and 1995 cohorts. The percentage of borrowers with full-time jobs who had repayment problems in the most recent cohort varies from 16 to 30 percent — fairly low, but by no means negligible and substantially higher than the earlier group. For part-time workers, the rates are higher, sometimes very much so (as high as 60 percent for Master's level females). Thus, while repayment problems have — not surprisingly — been most common for the unemployed, afflicting as many as two-thirds of this group, these results would suggest that relief for those with jobs but stuck at low earnings levels should probably accompany any assistance targeted on those with no jobs at all. In fact, recent changes in the CSLP have been doing precisely this.

Finally, it is interesting to look at repayment problems by income level, as shown in Table 10 for Bachelor's graduates. These results show the expected general declines in the incidence of repayment problems at higher income levels. There are, however, fewer clear cut-points where problems are much more common for each sex-education group in the most recent cohort relative to the 1990 graduates, and those which can be identified vary by education level. The precise design of loan assistance programmes based on income levels would, therefore, appear to offer something of a challenge to programme designers and any evalua-

tion of such initiatives might have to accept that the benefits of such initiatives might not be as precisely targeted as might be wished for.¹²

III.5 Non-Government Borrowing

How does students' borrowing from government loan programmes fit into their total (student) debt portfolios and how much higher is total borrowing when sources other than the government sources focussed on in this paper are included? Some light is shed on these questions by the numbers shown in Tables 11a and 11b, which report outstanding government borrowing and then total borrowing (including borrowing from family, friends, and financial institutions) as of two years following graduation (rather than at graduation as seen above for the borrowing numbers and corresponding to the comparable information available on the NGS databases for the two sources of loans).

Total borrowing is, of course, uniformly higher than that from government student loan programmes alone, the differences being fairly moderate at the College and Bachelor's levels, more substantial among Master's and Ph.D. graduates. More specifically, and again working with overall borrowing (the incidence of borrowing times the mean amounts among borrowers), total borrowing in 1997 was just 10.9 and 4.8 percent higher than government (alone) borrowing for College males and females, 18.5 and 10.1 percent higher for the Bachelor's groups, a more substantial 25.0 and 28.9 percent higher at the Master's level, and a significantly greater 44.0 and 69.0 percent at the Ph.D. level.

Other loans are, of course, often of a rather different nature from those taken out with government programmes: loans

from family are sometimes forgiven or characterised by more flexible payback schedules and lower interest rates, more conventional loans from financial institutions would generally be rather less advantageous, and so on. In any event, the fact that such other sources of borrowing are not, overall, particularly extensive at the College and Bachelor's levels largely rules out their general importance for these groups.

On the other hand, the greater levels of non-government borrowing among graduates students, especially at the Doctoral level, suggest that these other sources of debt should indeed be taken into account in any more general evaluation of student borrowing for these groups. At the same time, it is worth remembering that debt burdens were generally lowest and payback rates highest among these Master's and Ph.D. graduates, and noting that these are the loan splits two years after graduation, by which time these graduates had (as seen earlier) typically paid off more than half their government borrowing, meaning that the other sources of borrowing are calculated as shares of relatively reduced overall debt loads.

III.6 Borrowing by Parental Education Level

How progressive has the loans system been in terms of delivering more money to students from lower socio-economic backgrounds? This question implicitly derives from the basic mandate of the CSLP and its provincial counterparts, which is to render access to the post-secondary system to all worthy candidates, regardless of family background, as this would seem to imply greater borrowing among students from lower-income families. The NGS data are rather limited in

this regard due to the paucity of family background variables on the files — while also missing information on students' actual financial needs and the role the government loan programmes have played in plugging those holes (as discussed further below) — but they do allow us to look at borrowing by parental education, a reasonably good proxy for family status.¹³

Table 12 shows that borrowing patterns have been somewhat mixed along these lines. Focussing on the most recent cohort, for example, while female College and Bachelor's graduates show less overall borrowing (incidence times mean amounts) for graduates with parents at successively higher education levels — thus indicating “progressivity” — among their male classmates borrowing is actually greatest for those with the most educated parents. Perhaps surprisingly, the system seems to be somewhat more progressive at the graduate level with, in particular, graduates with the most educated parents having the least borrowing in every case. All-in-all, to the degree that parental education is a good indicator of family income, the loan system seems to have been at best only moderately efficient in getting more money to those students with the greatest need.

One possible explanation of this finding is that individuals from better off families more commonly attend institutions or enrol in programmes which are associated with higher assessed needs, such as out-of-town colleges and universities and second-degree professional programmes (especially medicine and law). Another reason might be that those from wealthier families are more comfortable with debt or quicker to realise the advantages of any

borrowing through government loan programmes and therefore seize more of the borrowing opportunities which exist. Third — and somewhat related — those with more educated parents might be better at playing “the student loan game”, such as being more talented at getting themselves treated as independent applicants. Finally, students from lower income families typically obtained more grants and bursaries and therefore required fewer loans, but this argument is weakened by the fact that the provinces’ grants systems virtually disappeared in the late 1980s and early 1990s, whereas the education-borrowing patterns have remained relatively steady.

IV. Conclusion and Discussion

IV.1 Summary of the Findings

The major findings may be summarized as follows:

- Borrowing rose over time, and for the last group (1995 graduates), from one-quarter to just under one-half of all graduates held student loans (varying by sex-education group), with mean values of around \$9,500 for College graduates and \$12,500 to \$14,000 at the various university levels (constant 1997 dollars). Only smallish minorities (under 25 percent) finished with \$20,000 or more of debt, and just a handful (maximum of 7 percent) had as much as \$30,000.
- Average debt-to-earnings ratios have been lower at each higher degree level among university graduates (Bachelor’s, Master’s, Ph.D.) while College graduates’ lay in the middle range of these. All have risen over time — predominantly due to the increased borrowing levels (graduates’ earnings have been relatively stable).
- Average payback rates by two years following graduation fell over time and averaged 40-55 percent for the most recent

group were (rising with the degree level) but with considerable variation with, for example, 20 to 40 percent having repaid their debts completely but others having repaid little or nothing at all.

- Repayment problems rose over time, and for the 1995 cohort were reported by between 21 and 33 percent of those who still owed money two years following graduation (mostly declining with degree level). These problem cases represent 10-15 percent of all post-secondary graduates. Problems are related to employment status and income levels in the predictable fashion.
- There were relatively small gender differences in borrowing, greater differences in debt-to-earnings ratios, but perhaps rather surprisingly small differences in payback rates and reported payback problems between male and female graduates.
- Differences in borrowing levels by field of study were also rather small, which — along with the gender patterns — suggests that borrowing has been largely supply-side determined (*i.e.*, eligible individuals have mostly borrowed up to the permitted maximums). Graduates in higher-paying disciplines have been characterised by lower debt-to-earnings ratios, have repaid their loans somewhat more quickly, and have reported fewer problems in doing so.
- Non-government borrowing has not been particularly extensive for College or Bachelor’s graduates, but has been more important for Master’s and Ph.D. graduates.
- The relationship of borrowing to parental education levels has been relatively weak.

IV.2 More Recent Trends

The situation has, however, almost certainly changed since the period

covered by this analysis, perhaps fairly significantly. For example, the 1994 increase in the lending limit from \$105 to \$165 has surely pushed borrowing levels up. If, for example, we (crudely) assume there has been a proportional increase in mean borrowing levels, this would point to average cumulative totals of about \$19,300, rather than the approximately \$13,500 reported above, at the Bachelor's level among those who have faced these higher limits over their entire four years.¹⁴ On the other hand, given that the eligibility criteria have not changed, there is no reason to assume that the proportion of graduates with loans has shifted. Applying the new estimated averages to the previously observed incidences (again at the Bachelor's level) suggests that borrowing levels may have risen to just under \$9,000 when averaged across all graduates, obviously continuing the longer-term upward trend. Furthermore, provincial grant programmes were largely replaced with loans over this period (as discussed above), presumably driving borrowing levels up even further. On the other hand the Millennium Scholarships programme is now providing up to \$3,000 of support for individuals in their first or second years which is meant to result in the substitution of grants for loans at the provincial level, thereby easing the pressures on borrowing.

The payback of loans has also changed. Under a 1995 agreement between the government and the participating banks, the latter assumed the primary risk of default in return for a five percent premium paid up front to cover their liability at the overall level. This may have changed their treatment of student loans, perhaps making them more diligent in their management and more flexible in their payment arrangements, but there is no empirical evidence on this. At the same

time, the CSLP has been expanding its aid to those experiencing problems with the repayment of their loans: interest relief was made available for those out of work or facing low earnings as well as the sick and disabled groups which were previously eligible, and debt forgiveness has been introduced on a limited scale. Additionally, there have been shifts in the labour markets faced by younger workers which have almost surely made things easier for many (especially those with the "right" diplomas and good luck), perhaps more difficult for others.

Overall, then, it might be expected that borrowing levels have increased, perhaps fairly substantially, since the 1995 graduates studied here, but that the true burden of a given level of debt may have decreased to the degree repayment schedules have become more flexible, the interest relief and debt reduction initiatives have proved effective, and labour market conditions have improved. In terms comparable to those used in the analysis reported above, borrowing levels have probably increased, debt-to-earnings ratios have probably risen as well, repayment rates have probably changed as well but in a less clear-cut manner, while at least some of those experiencing "difficulty" have probably received succour. These are, however, only very rough conjectures, and it will of course be important to see what the actual data reveal as they become available.

IV.3 What the Findings Do and Don't Tell Us

This analysis has revealed some rather useful findings regarding student borrowing. It has shown that borrowing from government loan programmes by post-secondary graduates has risen over time, but that up to recently it has not been as extensive as many might have thought

and does not appear to have represented overly onerous burdens for most graduates. There has, however, also been a minority of graduates who have accumulated greater amounts of borrowing, who have faced debt levels which have been large relative to their post-graduation incomes, who have been paying their loans back very slowly, and who have experienced difficulties with their debt loads — and these more worrisome cases have increased in number over the period studied and have probably risen further since.

The analysis has, however, been unable to answer some of the most important questions regarding student borrowing, including those related to the very *raison d'être* of government loan programmes: to help provide access to the post-secondary education system for all those who merit the opportunity regardless of socio-economic background. This analysis does not, for example, really tell us the number of students that have been given the opportunity to pursue post-secondary studies due to the federal and provincial financial aid systems, since a simple counting of the number of graduates with loans is by no means an accurate measure of this critical performance indicator (*e.g.*, many of those who received loans might have found other means to support themselves or simply got by with less). Neither do the findings tell us how many potential candidates have *not* been able to pursue their studies because the borrowing limits have not been high enough or the eligibility criteria have been too strict to provide the needed assistance. Nor does the analysis indicate how many worthy and interested students have chosen not to pursue (or continue) their post-secondary studies because they were unwilling to take on the required debt.

The concept of “access” is, furthermore, a complex one, involving not just the simple notion of whether an individual pursues post-secondary studies, but various related outcomes which could depend on the costs of an education and the role loans play in helping individuals meet their associated financial needs: the programme, the field of study, the particular institution attended, whether study is part-time or full-time and the often related decision regarding outside work, the decision to go on to graduate school, and so on. How much has the loan system opened up opportunities for needy students in these regard, to what degree has it fallen short, how could it do better? The answers to these questions are not found here.

Addressing these issues would require not only another very extensive research undertaking, but also one based on different data which allowed us to compare those who were pursuing their post-secondary studies versus those who were not and analyse the various underlying factors, including the role of student loan programmes. All the other outcomes just mentioned — institution, programme, discipline, part-time versus full-time, *etc.* — could be studied in a similar framework.¹⁵ Such a study would almost certainly best include a mix of objective and normative measures, such as — on the one hand — the statistical correlation between, say, family background and the pursuit of post-secondary studies, and — on the other hand — analysing the information individuals provide regarding their assessment of the role that student loan programmes have played in their post-secondary educational careers. Further analysis will, therefore, await such data.

Notes

- ¹ The material in this section is covered in more detail in Finnie [2000c]
- ² The NGS databases are based on a stratified sampling scheme (by province, level of education, and field of study). All results reported reflect the appropriate sample weights. See Finnie [2000a] for further details on this and other aspects of the NGS databases and some similarly derived samples.
- ³ Students like the ones deleted here are included in the samples at the point they ultimately completed their studies.
- ⁴ This latter piece of information was not available for the 1982 graduates. Instead, those enrolled full-time in either January or October 1983 were deleted (this information was in turn missing from the other surveys). The “major” diplomas restriction means that individuals enrolled in interest, recreational, and other such courses which would not appear to be career related are not deleted.
- ⁵ Finnie [2000c] includes graphical presentations of the results shown in the tables presented here.
- ⁶ Results for the other cohorts are not given so as to keep this and the other tables of its type presented below relatively compact.
- ⁷ See Finnie and Schwartz [1996, 2000] for further discussion of borrowing in a demand-supply analytical framework.
- ⁸ These ratios are meant to serve as only a rough index of the burden which the student loans represent. The true burden — however that might be defined — probably consists of a rather more complex relationship between borrowing and earnings levels (for example, a given ratio might be easier to bear at a higher income level) and other factors. Also, earnings as of the first interview represent only a rough proxy of post-graduation earnings levels. Nevertheless, the ratios presented serve as a useful indicator of debt burdens, and are especially useful when used to make comparisons across groups and over time.
- ⁹ In the earlier cohorts, individuals were asked to report their earnings in terms of what they would receive were the job to last the full year whether or not that was the case. In 1997 (the 1995 cohort), individuals were asked to give their rate of pay in the manner they preferred (hourly, weekly, monthly, annually), with Statistics Canada then converting these into annual values based on usual hours and weeks of work where appropriate.
- ¹⁰ This information was not gathered for the 1982 graduates.
- ¹¹ If, for example, one person’s loan was twice as large as another’s, that first loan would have double the weight of the second in these calculations.
- ¹² On the other hand, it could be that the earnings measure available in the pre-1997 data was better at capturing the underlying ability to pay.
- ¹³ To keep the analysis relatively contained, mother’s and father’s education were together collapsed into three categories: both having less than a Bachelor’s degree, some Bachelor’s level education on the part of either parent, some graduate or professional school education for either for one or the other.
- ¹⁴ This number is arrived at by multiplying \$13,500 (approximately average borrowing among 1995 graduates) times 1.57 (the proportional increase in the maximum

lending limit) and taking three-quarters of the resulting increase to allow for the fact that the 1995 graduates would have faced these greater limits for one of their four years. Actual increases might have been greater than this, especially given that tuition increases have been driving needs up significantly — or smaller, if students' borrowing needs are not generally as great at the margin (*i.e.*, they might have taken up the extra amounts offered at lower rates than before).

¹⁵ Statistics Canada is in the process of mounting a very elaborate survey which should be extremely rich in this respect: the "YITS" — Youth in Transition Survey. The YITS will survey adolescents and then follow them through their formative/transitional years, thus allowing an analyst to observe who goes on to post-secondary education and the related underlying factors, including not only family background, earlier educational experiences, and other environmental and personal attributes, but also (hopefully) those related to the student loan system. In the meantime, Statistics Canada is planning a supplement to their standard Labour Force Survey which will attempt to provide at least some information on the access issue.

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**Table 1: Incidence of Borrowing and Mean Amounts
Owed at Graduation**

Education Group	Sex	1982		1986		1990		1995	
		Inc.	Mean	Inc.	Mean	Inc.	Mean	Inc.	Mean
College/CEGEP	Male	0.34	3,990	0.42	6,350	0.43	6,140	0.41	9,420
	Female	0.35	3,850	0.43	5,910	0.43	6,580	0.44	9,580
Bachelor's	Male	0.45	6,070	0.44	9,550	0.48	9,870	0.47	13,390
	Female	0.39	5,650	0.39	9,100	0.42	9,910	0.44	13,840
Master's	Male	0.32	6,450	0.34	8,690	0.32	9,670	0.37	13,250
	Female	0.31	6,440	0.31	8,260	0.32	9,620	0.35	14,040
Doctorate	Male	0.34	5,110	0.29	7,440	0.28	8,520	0.23	12,450
	Female	0.22	5,100	0.27	5,750	0.27	9,550	0.29	13,130

Table 2: Overall Borrowing - Incidence Times Mean Amount

Education Group	Sex	1982 Inc.*Mean	1986 Inc.*Mean	1990 Inc.*Mean	1995 Inc.*Mean
College/CEGEP	Male	1,360	2,670	2,640	3,860
	Female	1,350	2,540	2,830	4,220
Bachelor's	Male	2,730	4,200	4,740	6,290
	Female	2,200	3,550	4,160	6,090
Master's	Male	2,060	2,950	3,090	4,900
	Female	2,000	2,560	3,080	4,910
Doctorate	Male	1,740	2,160	2,390	2,860
	Female	1,120	1,550	2,580	3,810

Table 3: Distribution (%) of Loans by Dollar Ranges**1995 Graduates**

Education Group	Sex	Less than \$5,000	\$5,000 to \$9,999	\$10,000 to \$14,999	\$15,000 to \$19,999	\$20,000 to \$29,999	\$30,000 or more
College/CEGEP	Male	21	37	24	11	5	2
	Female	20	36	25	13	5	1
Bachelor's	Male	14	26	21	16	17	6
	Female	14	22	24	18	16	7
Master's	Male	13	22	26	19	16	4
	Female	12	22	25	17	17	7
Doctorate	Male	18	24	28	14	11	5
	Female	18	25	20	15	16	6

1990 Graduates

Education Group	Sex	Less than \$5,000	\$5,000 to \$9,999	\$10,000 to \$14,999	\$15,000 to \$19,999	\$20,000 to \$29,999	\$30,000 or more
College/CEGEP	Male	45	39	12	3	1	0
	Female	40	41	15	3	2	0
Bachelor's	Male	28	26	26	12	6	1
	Female	25	29	28	11	7	1
Master's	Male	27	31	24	11	7	1
	Female	25	30	29	11	4	1
Doctorate	Male	40	28	16	7	7	2
	Female	28	33	19	9	8	2

Table 4: Median Debt-to-Earnings Ratios

Education Group	Sex	1982	1986	1990	1995
College/CEGEP	Male	0.13	0.19	0.20	0.28
	Female	0.15	0.23	0.26	0.41
Bachelor's	Male	0.14	0.24	0.28	0.38
	Female	0.17	0.29	0.32	0.51
Master's	Male	0.12	0.18	0.20	0.29
	Female	0.15	0.18	0.24	0.37
Doctorate	Male	0.08	0.12	0.14	0.25
	Female	0.09	0.11	0.15	0.22

Table 5: Distribution (%) of Debt-to-Earnings Ratios**1995 Graduates**

Education Group	Sex	Less than .05	.05 to .10	.10 to .15	.15 to .20	.20 to .30	.30 to .40	.40 to .50	.50 to .70	.70 or more
College/CEGEP	Male	4	7	9	12	20	14	11	14	9
	Female	2	5	4	7	18	14	12	18	20
Bachelor's	Male	4	6	8	10	14	11	11	16	20
	Female	2	6	5	6	12	13	12	16	28
Master's	Male	5	10	10	11	16	15	12	11	11
	Female	2	8	8	6	19	15	12	13	17
Doctorate	Male	3	11	16	10	23	12	9	9	6
	Female	6	16	10	14	11	10	9	13	10

1990 Graduates

Education Group	Sex	Less than .05	.05 to .10	.10 to .15	.15 to .20	.20 to .30	.30 to .40	.40 to .50	.50 to .70	.70 or more
College/CEGEP	Male	11	17	17	13	20	11	5	4	3
	Female	7	13	14	14	24	12	8	5	5
Bachelor's	Male	6	14	10	12	18	15	9	8	6
	Female	6	11	11	11	18	16	11	9	8
Master's	Male	13	14	17	11	20	11	6	5	4
	Female	8	15	11	13	23	14	7	4	4
Doctorate	Male	18	25	13	11	20	7	4	1	2
	Female	15	23	14	13	11	8	6	8	1

Table 6: Proportion of Debt Repaid Two Years After Graduation

Education Group	Sex	1986		1990		1995	
		Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted
College/CEGEP	Male	0.55	0.49	0.53	0.43	0.42	0.44
	Female	0.56	0.46	0.51	0.41	0.38	0.41
Bachelor's	Male	0.51	0.44	0.49	0.40	0.44	0.42
	Female	0.52	0.43	0.48	0.40	0.40	0.41
Master's	Male	0.59	0.51	0.52	0.44	0.52	0.47
	Female	0.61	0.52	0.57	0.49	0.52	0.47
Doctorate	Male	0.66	0.61	0.63	0.56	0.53	0.50
	Female	0.72	0.61	0.62	0.57	0.57	0.49

Table 7: Distribution (%) of Proportion Repaid**1995 Graduates**

Education Group	Sex	Less than .05	.05 to .25	.25 to .50	.50 to .75	.75 to .99	1.00
College/CEGEP	Male	15	24	26	10	5	19
	Female	21	29	20	7	3	20
Bachelor's	Male	16	24	23	9	5	24
	Female	19	25	23	8	4	22
Master's	Male	10	27	16	10	3	33
	Female	12	22	20	9	4	33
Doctorate	Male	12	22	16	11	6	33
	Female	11	19	19	7	5	40

1990 Graduates

Education Group	Sex	Less than .05	.05 to .25	.25 to .50	.50 to .75	.75 to .99	1.00
College/CEGEP	Male	11	25	25	9	4	26
	Female	12	28	24	8	4	25
Bachelor's	Male	13	30	23	8	3	23
	Female	15	29	24	7	2	23
Master's	Male	13	29	20	7	2	30
	Female	10	25	21	7	3	34
Doctorate	Male	11	20	16	8	5	41
	Female	9	22	17	9	1	43

Table 8: Incidence of Difficulty With Repayment

Education Group	Sex	1990	1995
College/CEGEP	Male	0.25	0.30
	Female	0.23	0.33
Bachelor's	Male	0.21	0.29
	Female	0.25	0.32
Master's	Male	0.21	0.28
	Female	0.24	0.33
Doctorate	Male	0.17	0.21
	Female	0.24	0.23

Table 9: Incidence of Repayment Difficulty by Labor Force Status**1995 Graduates**

Education Group	Sex	1995			
		Full-Time	Part-Time	UN	NLF
College/CEGEP	Male	0.27	0.28	0.66	-
	Female	0.29	0.38	0.62	0.36
Bachelor's	Male	0.27	0.42	0.43	-
	Female	0.30	0.35	0.48	0.32
Master's	Male	0.25	0.40	-	-
	Female	0.24	0.60	0.67	-
Doctorate	Male	0.18	-	-	-
	Female	0.16	-	-	-

1990 Graduates

Education Group	Sex	1990			
		Full-Time	Part-Time	UN	NLF
College/CEGEP	Male	0.20	0.44	0.47	-
	Female	0.18	0.38	0.35	0.52
Bachelor's	Male	0.18	0.30	0.35	-
	Female	0.22	0.29	0.43	0.43
Master's	Male	0.16	0.27	0.59	-
	Female	0.20	0.35	0.35	-
Doctorate	Male	0.13	-	-	-
	Female	0.19	-	-	-

**Table 11A: Incidence of Government Borrowing and Mean Amounts
Owed at the First Interview**

Education Group	Sex	1986		1990		1995	
		Inc.	Mean	Inc.	Mean	Inc.	Mean
College/CEGEP	Male	0.30	4,590	0.30	4,620	0.32	7,710
	Female	0.31	4,490	0.30	4,810	0.33	8,550
Bachelor's	Male	0.33	7,150	0.35	7,730	0.35	11,700
	Female	0.29	7,130	0.31	7,510	0.34	11,980
Master's	Male	0.22	6,810	0.22	7,780	0.24	11,050
	Female	0.20	6,920	0.20	7,260	0.23	11,880
Doctorate	Male	0.17	4,810	0.16	6,200	0.15	10,050
	Female	0.13	4,580	0.15	7,400	0.17	11,410

**Table 11B: Incidence of Total Borrowing and Mean Amounts
Two Years After Graduation**

Education Group	Sex	1986		1990		1995	
		Inc.	Mean	Inc.	Mean	Inc.	Mean
College/CEGEP	Male	0.32	5,000	0.32	5,150	0.35	7,820
	Female	0.33	4,760	0.32	5,070	0.35	8,420
Bachelor's	Male	0.36	7,580	0.40	8,310	0.38	12,770
	Female	0.31	7,750	0.35	8,130	0.37	12,120
Master's	Male	0.25	7,900	0.26	9,070	0.27	12,280
	Female	0.22	7,720	0.23	8,590	0.26	13,540
Doctorate	Male	0.21	7,740	0.21	8,280	0.19	11,450
	Female	0.18	9,580	0.19	9,660	0.22	14,200

Table 12: Incidence of Borrowing and Mean Amounts Owed at Graduation by Parental Education

Education Group	Sex	Parental Education	1986		1990		1995	
			Inc.	Mean	Inc.	Mean	Inc.	Mean
College/CEGEP	Male	Both <BA	0.43	6,360	0.43	5,440	0.42	9,250
		Some BA	0.32	5,940	0.42	5,950	0.38	9,420
		Some Pro	0.47	7,540	0.39	5,740	0.49	13,310
	Female	Both <BA	0.44	5,920	0.45	5,930	0.45	9,690
		Some BA	0.40	6,020	0.34	6,190	0.40	9,450
		Some Pro	0.37	5,930	0.30	7,020	0.33	10,640
Bachelor's	Male	Both <BA	0.45	8,910	0.51	8,950	0.50	13,620
		Some BA	0.39	11,110	0.41	8,410	0.44	12,670
		Some Pro	0.46	8,820	0.43	10,050	0.52	14,070
	Female	Both <BA	0.40	9,340	0.44	8,930	0.46	14,120
		Some BA	0.37	8,440	0.40	8,350	0.44	12,790
		Some Pro	0.29	9,570	0.34	9,300	0.30	15,930
Master's	Male	Both <BA	0.32	8,980	0.32	9,170	0.35	13,610
		Some BA	0.38	8,240	0.33	7,850	0.41	12,540
		Some Pro	0.44	8,720	0.31	5,940	0.31	13,170
	Female	Both <BA	0.31	8,510	0.31	8,970	0.33	14,720
		Some BA	0.34	7,720	0.35	8,190	0.40	13,280
		Some Pro	0.25	8,570	0.23	8,450	0.28	14,360
Doctorate	Male	Both <BA	0.31	7,080	0.31	7,590	0.23	12,740
		Some BA	0.27	8,860	0.22	7,480	0.25	11,960
		Some Pro	-	-	0.30	7,110	0.16	12,100
	Female	Both <BA	0.30	5,640	0.27	8,420	0.34	14,550
		Some BA	0.25	6,020	0.27	8,980	0.25	11,380
		Some Pro	-	-	0.23	6,370	0.23	10,360

Table A1: Borrowing by Field - Bachelor's Graduates

Education Group	Sex	1982		1986		1990		1995	
		Inc.	Mean	Inc.	Mean	Inc.	Mean	Inc.	Mean
No specialization	Male	0.35	5,780	0.40	9,760	0.45	7,760	0.42	11,080
	Female	0.15	6,440	0.34	10,900	0.36	8,480	0.39	11,790
Elementary Teaching	Male	0.38	6,100	0.41	11,110	0.49	11,930	0.52	11,960
	Female	0.43	5,870	0.37	9,360	0.43	11,350	0.52	14,400
Other Teachers	Male	0.48	7,430	0.52	8,650	0.56	9,360	0.55	13,120
	Female	0.54	5,520	0.47	9,740	0.47	8,760	0.35	15,510
Fine Arts	Male	0.47	5,570	0.42	9,360	0.47	9,750	0.41	13,420
	Female	0.32	5,520	0.35	9,030	0.39	8,080	0.36	12,490
Commerce	Male	0.39	5,390	0.37	8,490	0.40	9,190	0.38	11,470
	Female	0.37	4,980	0.33	7,970	0.38	8,750	0.38	10,770
Economics	Male	0.42	4,220	0.38	21,690	0.49	7,450	0.51	13,730
	Female	0.29	4,560	0.41	6,020	0.35	7,420	0.49	18,000
Law	Male	0.72	8,560	0.47	11,770	0.54	14,730	0.61	17,330
	Female	0.64	7,350	0.45	11,870	0.66	13,280	0.70	17,640
Other Social Science	Male	0.39	5,000	0.34	8,570	0.42	8,510	0.41	13,100
	Female	0.29	5,190	0.38	8,620	0.35	9,130	0.44	13,200
Applied Sciences	Male	0.43	5,070	0.42	8,730	0.49	10,370	0.51	13,170
	Female	0.47	5,430	0.54	8,870	0.49	9,020	0.52	13,280
Veterinary	Male	0.83	9,240	0.71	8,630	0.52	18,050	0.61	13,530
	Female	0.38	10,230	0.73	14,350	0.69	11,670	0.67	17,010
Engineering	Male	0.48	5,850	0.52	7,990	0.55	8,940	0.53	12,270
	Female	0.43	5,190	0.51	6,790	0.54	9,760	0.41	12,400
Medical	Male	0.82	12,180	0.79	14,620	0.65	16,220	0.75	30,270
	Female	0.66	10,990	0.74	13,650	0.72	17,150	0.73	22,040
Other Medical	Male	0.69	6,880	0.53	10,610	0.49	10,950	0.44	14,680
	Female	0.47	5,740	0.40	9,310	0.46	10,260	0.40	15,110
Computer	Male	0.37	5,350	0.40	7,220	0.41	9,120	0.49	11,960
	Female	0.31	6,160	0.37	8,690	0.57	10,570	0.38	12,900
Math & Physical Sc.	Male	0.47	5,670	0.44	7,540	0.44	8,370	0.60	13,690
	Female	0.45	4,190	0.37	8,420	0.32	10,210	0.56	12,400

Table A2: Debt-to-Earnings Ratios by Field - Bachelor's Graduates

Education Group	Sex	1982	1986	1990	1995
No specialization	Male	-	0.25	0.22	0.29
	Female	-	0.40	0.35	0.53
Elementary Teaching	Male	0.17	0.26	0.37	0.43
	Female	0.19	0.31	0.36	0.53
Other Teachers	Male	0.18	0.28	0.33	0.60
	Female	0.17	0.32	0.30	0.59
Fine Arts	Male	0.18	0.30	0.34	0.43
	Female	0.21	0.36	0.33	0.56
Commerce	Male	0.13	0.26	0.29	0.34
	Female	0.17	0.25	0.36	0.40
Economics	Male	0.11	0.28	0.25	0.37
	Female	-	-	-	-
Law	Male	0.23	0.33	0.39	0.45
	Female	0.19	0.36	0.34	0.52
Other Social Science	Male	0.16	0.29	0.32	0.46
	Female	0.20	0.34	0.36	0.62
Applied Sciences	Male	0.13	0.27	0.36	0.44
	Female	0.18	0.28	0.29	0.47
Veterinary	Male	0.21	0.21	-	-
	Female	-	-	0.28	0.44
Engineering	Male	0.12	0.19	0.21	0.29
	Female	-	0.12	0.25	0.27
Medical	Male	0.14	0.18	0.31	0.63
	Female	0.23	0.21	0.29	0.73
Other Medical	Male	0.14	0.20	0.26	0.37
	Female	0.15	0.22	0.29	0.42
Computer	Male	0.14	0.22	0.21	0.30
	Female	0.19	0.27	0.27	0.42
Math & Physical Sc.	Male	0.14	0.20	0.22	0.36
	Female	0.09	0.23	0.27	0.35

Table A3: Proportion of Debt Repaid by Field - Bachelor's Graduates

Education Group	Sex	1986	1990	1995
No specialization	Male	0.49	0.57	0.34
	Female	0.35	0.56	0.33
Elementary Teaching	Male	0.49	0.46	0.45
	Female	0.49	0.45	0.42
Other Teachers	Male	0.49	0.42	0.46
	Female	0.52	0.43	0.33
Fine Arts	Male	0.39	0.48	0.36
	Female	0.48	0.50	0.43
Commerce	Male	0.50	0.52	0.46
	Female	0.49	0.55	0.53
Economics	Male	0.49	0.52	0.48
	Female	-	-	-
Law	Male	0.31	0.31	0.24
	Female	0.49	0.30	0.14
Other Social Science	Male	0.46	0.50	0.41
	Female	0.54	0.43	0.37
Applied Sciences	Male	0.50	0.50	0.42
	Female	0.55	0.51	0.41
Veterinary	Male	0.70	-	-
	Female	-	0.51	0.32
Engineering	Male	0.61	0.53	0.51
	Female	0.55	0.59	0.53
Medical	Male	0.47	0.44	0.40
	Female	0.52	0.41	0.29
Other Medical	Male	0.54	0.59	0.61
	Female	0.60	0.57	0.51
Computer	Male	0.49	0.50	0.53
	Female	0.50	0.58	0.53
Math & Physical Sc.	Male	0.58	0.51	0.52
	Female	0.56	0.44	0.44

**Table A4: Incidence of Repayment Difficulty
by Field - Bachelor's Graduates**

Education Group	Sex	1990	1995
No specialization	Male	0.46	0.09
	Female	0.36	0.47
Elementary Teaching	Male	0.23	0.33
	Female	0.27	0.30
Other Teachers	Male	0.11	0.25
	Female	0.21	0.44
Fine Arts	Male	0.30	0.51
	Female	0.38	0.41
Commerce	Male	0.18	0.19
	Female	0.14	0.15
Economics	Male	0.17	0.25
	Female	-	0.33
Law	Male	0.18	0.24
	Female	0.29	0.31
Other Social Science	Male	0.27	0.51
	Female	0.30	0.36
Applied Sciences	Male	0.30	0.44
	Female	0.33	0.43
Veterinary	Male	0.18	-
	Female	0.16	0.27
Engineering	Male	0.18	0.18
	Female	0.20	0.27
Medical	Male	0.12	0.24
	Female	0.13	0.25
Other Medical	Male	0.07	0.28
	Female	0.08	0.23
Computer	Male	0.08	0.10
	Female	0.18	0.34
Math & Physical Sc.	Male	0.24	0.14
	Female	0.24	0.29