THE STUDENT DEBT DEBATE: AN ECONOMIC INVESTIGATION OF THE ISSUES

STUDENT PAPER NO. 5

RACHEL BAXTER and STUART BIRKS

CENTRE FOR PUBLIC POLICY EVALUATION
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* This is a revised version of a research report by Rachel Baxter, supervised by Stuart Birks, in partial fulfillment of the requirements for a BApplEcon(Hons).

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LIST OF ABBREVIATIONS

AGI	Adjusted Gross Income
ATO	Australian Taxation Office
BBS	Bachelor of Business Studies
CFDA	Catalogue of Federal Domestic Assistance
CIHE	Council for Industry and Higher Education
CPI	Consumer Price Index
CRC	Course Related Cost
DEST	Department of Education, Science and Training
DDP	Doubtful Debt Provision
EFTS	Equivalent Full-Time Students
FDLP	Federal Direct Loan Program
GDP	Gross Domestic Product
GST	Goods and Services Tax
HECS	Higher Education Contribution Scheme
HRC	Human Rights Commission
ICANZ	Institute of Chartered Accountants of New Zealand
IRD	Inland Revenue Department
IRS	Internal Revenue Service
MCG	Ministerial Consultative Group
MSD	Ministry of Social Development
NACEW	National Advisory Council on the Employment of Women
NZBR	New Zealand Business Roundtable
NZQA	New Zealand Qualifications Authority
NZUSA	New Zealand University Students' Association

NZVCC	New Zealand Vice-Chancellors Committee
OECD	Organisation for Economic Cooperation and Development
PAYE	Pay As You Earn
PAYG	Pay As You Go
PBRF	Performance Based Research Fund
PELS	Postgraduate Education Loan Scheme
PTE	Private Training Establishment
RPI	Retail Price Index
SLAM	Student Loan Account Manager
TESLA	Tertiary Education Student Loan Analysis

ABSTRACT

A greater financial contribution from students participating in higher education has resulted in large increases in student loans and debt – sparking considerable debate. This research examines some of the issues surrounding debt and repayment of student loans, with comparisons being drawn between New Zealand's loan programme and the predominant schemes in Australia, the United States, England and Wales.

Estimation of loan repayment times are often used to illustrate the impact of debt on individuals and society as a whole. This research outlines models used in the student debt debate and finds significant flaws in the methodologies used. A simulation is created using Microsoft Excel in an attempt to show the effect on the period of debt repayment when dependent variables are modified.

In addition, the extent to which the taxpayer subsidises tertiary education in New Zealand, the costs involved with the student loan scheme, and the returns from this investment are considered. Finally, the claim that has been laid with the Human Rights Commission that the student loan scheme discriminates against females is critically analysed, the conclusion being drawn that the claim is contradictory and unsubstantiated.

The focus of the research is to be on Bachelors degree, university students.

CHAPTER 1 INTRODUCTION

1.1 Background to the Report

Tertiary education in New Zealand was almost entirely financed by public funds until the advent of the Education Act in 1989, which saw the implementation of fees for all students undertaking tertiary study. Prior to the Act course fees were negligible; in 1989 a full time Bachelor of Business Studies (BBS) student at Massey University paid $288 per year, rising by over 430 percent to $1,250 in 1990 (Massey University, 1989, 1990). Course fees have continued to rise with a full time BBS student now paying over $3,100 per year in course fees at Massey University (or $2,361 in 1989 constant dollar terms) (Massey University, 2003). A similar pattern emerges at other New Zealand universities. In addition to increases in course fees, in 1992 there was a shift away from almost universal to targeted student allowances for living costs, in order to improve equity and provide effective financial assistance to those that need it most (www.teac.govt.nz).

It is well acknowledged that tertiary education provides benefits and costs, both to the individual and to society as a whole. It has been posited that the shift away from almost complete public funding meant the Government began to see tertiary education as an increasing burden on state resources (Maani, 1997). As a result, more emphasis was placed on private benefits received and funding was reallocated away from higher education in an attempt to correct an equity imbalance (Maani, 1997).

The substantial increase in fees for students is a reflection of the neo-liberal philosophy of user-pays. Individuals are seen to benefit from tertiary education in the form of higher lifetime earnings, and therefore should be expected to pay for their education (Education Directions, 1997). Course fees mean that some portions of the population may not be able to afford, or be prepared to risk, the substantial costs of tertiary education; the potential being that society forgoes the best use of its human resources due to under-investment by some groups (Green, 1994). If this is the case, there are grounds for the government to intervene to fulfil an equity role by correcting a perceived injustice, or rectify inefficiency (Birks and Chatterjee, 2001). Government has attempted to mitigate this form of market failure through the use of student loans.

The Student Loan Scheme Act 1992 was introduced in an attempt to "support the participation of all New Zealanders in tertiary education by providing access to finance for tuition fees and other education related costs" (Ministry of Education, 1993, p.4). Eligible students can borrow for course fees, living costs, and course related costs. StudyLink, a division of the Ministry of Social Development (MSD), is responsible for the administration and delivery of student loans during the year of study. At the end of the academic year, loan balances are transferred to the Inland Revenue Department (IRD) for collection. Student debt levels have increased substantially since the inception of the scheme; currently, more than $6 billion is owed and the average loan held with the IRD is $13,679 (IRD, 2003). The magnitude of the debt has generated considerable debate over the impact that student debt has on the individual, and repayment periods of loans have been estimated to help illustrate this impact.

Particular emphasis is often paid to debt held by women, as research typically shows that females take longer than males to repay their student loans (Stanley-Clarke, 2000). This results because women earn less than men, on average – partly because of time taken out of the workforce to raise a family (Ministry of Women's Affairs, 1999). However, Maani (1997) argues that further research is required to find out if such differences in repayment periods between males and females are true, and to gain an accurate picture of debt repayment times, as research on the topic is not consistent.

1.2 Structure of the Report

The report has been organised into nine chapters. Chapter Two provides an overview of the current literature regarding student loans and debt. Chapter Three summarises New Zealand's student loan scheme. Chapter Four draws comparisons between the New Zealand scheme and the official loan schemes of Australia, the United States, England, and Wales. The countries examined were chosen because of their close historical and economic relationship to New Zealand. They are all democratic states that seek to establish a competitive advantage through investment in higher education.

Chapter five outlines the debt repayment models created by the Ministry of Education and the New Zealand University Students' Association, with particular emphasis on the underlying assumptions. Chapter six introduces the methodology used in creating a model of debt repayment, discusses results, and includes sensitivity tests on repayment times.

Chapter seven summarises the extent to which the taxpayer subsidises higher education in New Zealand, and potential returns from this investment are given. Chapter eight critically assesses the claim laid with the Human Rights Commission that the loan scheme discriminates against women because females earn less, on average, than males.

Finally, conclusions are drawn, and limitations and scope for further research are discussed in chapter nine.

CHAPTER 2 LITERATURE REVIEW

There has been a general trend worldwide towards students contributing a greater proportion of the course costs of higher education, and a shift from grants to loans for living costs. This has seen the implementation of government funded loan schemes, and rising debt levels, as students increasingly rely on loans to pay for their education. However, the use of loans is contentious and considerable debate has been sparked over the past few decades. This chapter reviews relevant literature on student loans and the debt incurred when an individual obtains a loan to fund participation in higher education.

2.1 Human Capital and the Importance of Higher Education

2.1.1 Human Capital

It is commonly believed that economic prosperity can be advanced through the accumulation of human capital, defined as "acquired human capabilities, which are durable traits, yielding some positive effects upon performance in socially valued activities" (Treasury, 2001, p.3). Formal education (including higher education) is a method by which individuals can acquire these abilities. Schultz and Becker developed the human capital theory of education in the 1960s, positing that individuals make investment decisions to participate in education so that their labour productivity is raised – allowing them to earn more in the labour market and increasing overall economic growth (Becker, 1964; Schultz, 1961). On the other hand, employers are willing to invest more in educated workers if they can obtain a return on that investment through higher labour productivity without also having to give equivalent associated higher pay (S. Birks, personal communication, 22 December, 2003).

The effect of human capital on economic growth has only been explicitly modelled in recent times, beginning with the influential papers of Romer (1986) and Lucas (1988) in what is known as "endogenous growth theory". Prior to this work, the main body of literature was based on neoclassical growth theory, developed by Solow (1956, 1957) and Swan (1956), whereby economic growth was driven by the accumulation of physical capital. The proposition that education (as a proxy for human capital) is positively associated with the rate of economic growth has been tested over numerous studies, and an empirical relationship between the two has been established (see Lucas, 1988; Mankiw, Romer, and Weil, 1992; Barro, 1991; Barro and Lee, 1993, 1996; Hanushek and Kim, 1995; Barro and Sala-i-Martin, 1995; Klenow and Rodriguez-Clare, 1997; Topel, 1999; Hall and Jones, 1999; Krueger and

Lindahl, 1999, 2001). However, due to the intricate nature of human characteristics, measuring the impact of tertiary education on growth is difficult.

In contrast, the so-called screening hypothesis argues that people undertake higher education to give a signal to employers that they are more productive; education beyond a basic level is claimed to be associated with increased productivity, but does not cause it (Spence, 1973; Layard and Walters, 1978; Barr, 1989). For an educational qualification to be a good indicator of productivity, it is necessary that the cost of higher education to unproductive workers be so high that they choose to forgo the signal (Warner, 1999).

2.1.2 The Importance of Higher Education

As international competitive pressures increase, any country whose productivity lags behind others countries will experience a relative decline in living standards (Barr, 1989). It is therefore important to raise the productivity of labour. The Ministry of Education has recognised that a high performing tertiary education sector has a critical role in enhancing New Zealand's international competitiveness (Ministry of Education, 2002). Treasury (1999) also notes that tertiary level investment in expertise benefits both individuals and firms.

Furthermore, Lucas (1988) claimed that a higher level of education is likely to accelerate the rate of technological progress. This benefits both present and future generations, because future generations can build upon the technological successes of the current generation (Warner, 1999). The shift towards a so-called 'knowledge-based society' and ever increasingly sophisticated technology requires a substantially educated population – higher education is seen as a key to achieving this (Barr, 1989). In addition, there are a number of spill-over benefits that are hypothesised to occur because of higher education. External benefits are discussed in chapter eight of the report.

Although there are many advantages of tertiary education, it is important that marginal, as opposed to total, benefits and costs are considered when determining allocation of funding for tertiary education.

2.2 The Individual and Higher Education

Over the last 30 – 40 years the human capital literature has established a robust and consistent relationship between years of education, qualifications, and higher earnings (David, 2001). Research by Maani (1997) and Psacharopoulos (1981, 1985, 1987, 1994) demonstrates evidence in New Zealand of a strong correlation between education level and lifetime income. Tertiary education has consistently been shown to be a profitable investment for individuals in New Zealand and internationally – because of the private benefit received in the form of higher lifetime earnings (David, 2001; Maani, 1997; Psacharopoulos 1981, 1985, 1987, 1994).[2] In spite of past experience, the profitability of the investment may change if an increase in the supply of graduates is not matched by an equivalent increase in the demand for graduates. If this did occur, economic theory would suggest that the wage received by graduates would decrease, and consequently so would the private benefit from higher education. Notwithstanding evidence suggesting higher lifetime earnings of graduates, it has long been recognised that workers who participate in tertiary education may possess other characteristics that would lead them to earn higher wages irrespective of their level of education (Krueger and Lindahl, 2001). Differences in innate ability make it difficult to measure exactly the financial returns from higher education.

Additional benefits for the individual from undertaking tertiary education include: the enjoyment of learning for its own sake, development of individual skills and competencies, an enhanced appreciation and understanding of culture, and personal development and satisfaction (MCG, 1994; Sommer, 1995; Hansen, 2002). Furthermore, empirical evidence shows that individuals with a tertiary education have a lower risk of unemployment (MCG, 1994; OECD, 2000). Other private benefits include greater flexibility in making job changes, and improved health and quality of life (McLaughlin, 2003).[3] Due to the substantial benefits received by individuals, the major review of post-compulsory education and training in 1988 (the Hawke Report), the Ministry of Education document Learning for Life, and the Ministerial Consultative Group (MCG) Report "Funding Growth in Tertiary Education and Training", concluded that students should bear a significant portion of the costs of tertiary education (Hawke Report, 1988; Ministry of Education, 1989; MCG, 1994).

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[2] Averages are presented and it must be noted that there is always variation beyond these averages. Not all individuals will receive high levels of lifetime income despite obtaining tertiary qualifications.

[3] Individuals with general, as opposed to highly specific, tertiary qualifications may have more flexibility in making job changes than the general population. Someone with a highly specialised qualification – such as a Doctorate of Philosophy – might only be able to make job changes at a great cost to the investment in education (S. Birks, personal communication, 22nd December, 2003).

The greatest economic cost to the student of undertaking higher education is the forgone earnings during the period of study. Additional costs include course fees and course costs. As fees have risen, the opportunity cost for individuals participating in higher education has also increased, ceteris paribus. The greater emphasis on user-pays was part of the neo-liberal philosophy, at the centre of which is the rational, utility maximising consumer that acts under the maxim of self-interest. The individual's primary interest is in maximising their individual contribution and return from tertiary education (ICANZ, 2001). Because higher education is a non-returnable good (once it is consumed, it cannot be returned if it does not work or if the student fails the course) the cost of poorly informed decision making by students can be very high (ICANZ, 2001). The greater the proportion of tertiary education costs borne by the student, the higher the incentive to make a well-informed decision. Economic reasoning would therefore suggest that, as course fees and student debt levels have increased, rational individuals will put more time and effort into seeking as much information as possible before choosing their course of study. There appears to be no empirical research in New Zealand as to whether this has been the case. However, if unskilled job opportunities decrease (which appears to be the case as the world is moving towards more of a "knowledge society"), the opportunity cost of participating in higher education decreases.

2.3 Efficiency Grounds for the Provision of Loans

Compulsory up-front payment of fees has the potential to significantly decrease tertiary participation, due to young people not having the funds required. Student loan schemes help to counteract this, by moving repayment to the future where graduates are more likely to have the ability to repay. Governments fund loan programmes because borrowing to fund a tertiary education is uneconomic in the private loans market due to the existence of capital market failure (Warner, 1999). Informational asymmetries exist because it is difficult (if not impossible) for lenders to distinguish between the 'good risks' (students likely to repay their loan) and the 'bad risks' (those not likely to repay their loan) (Hansen, 2002). Investors are therefore reluctant to lend substantial sums for human capital development because students can offer little or no security (Warner, 1999). As a result, relying on the private finance sector to cover the unsubsidised cost of tertiary education is almost certain to lead to under-investment (ICANZ, 2001).

Becker (1964) noted that capital market imperfections result in education frequently being financed within families. Consequently, wealthy families would be inclined to invest more in higher education than poor families (Becker, 1964). In addition, given that employees' specific skills are reflected in the value of firms, funds would be more readily made available by firms to finance specific education, as opposed to general education (Becker, 1964).

In contrast, Friedman and Friedman (1990) conclude on equity, not efficiency, grounds that there is a strong case for providing loan funds adequate enough to guarantee opportunity to higher education for all. They also argue that there is no case for subsidising people who get higher education at the expense of those who do not (Friedman and Friedman, 1990). That is, students should be subsidised to reflect benefits received by society, but to no greater extent than this; students should pay for the higher income tertiary education will enable them to earn (Friedman and Friedman, 1990).

2.4 Arguments Against Student Loans

Arguments against the introduction of the student loan scheme, and hence increased student debt were numerous. Brett and Chamberlan (1987) argued that, because students from poorer backgrounds will have to incur bigger debts than students from more prosperous backgrounds, the fear of debt might deter them from entering higher education. However, any scheme that transfers the costs of higher education from the state to the student will meet the problem that some parents will be more able and willing than others to subsidise their children's education (Payne and Callender, 1997). This difficulty must be balanced against the possibility that transferring more of the costs of higher education from the state to the student will release resources for other educational spending that might be of particular benefit to children from poor families, for example spending on primary and secondary education (Payne and Callender, 1997).

Another common objection to student loans is that they may decrease access to higher education for women and ethnic minorities. The reason for the concern is that it is hypothesised these students are relatively more risk averse, and may be deterred from undertaking loan obligations (Maani, 1997; Payne and Callender, 1997). Despite this argument, tertiary participation rates of ethnic minorities and women have substantially increased since the introduction of the loan scheme in New Zealand. Although, this is probably partly due to changing demands for skills in the workplace for all workers (not just

women and ethnic minorities), and a changing cultural shift in what are seen to be appropriate occupations for females (S. Birks, personal communication, 22 December, 2003; NZCEW, 1990). Any potential deterrent effects should be reduced if loan repayments are based on income as opposed to the size of the debt, and if interest rate subsidies are in place for low-income earners (Cronin and Simmons, 1987).

Craven et. al (1997, p.276) believed the New Zealand loan scheme would result in a change in the pattern of subjects as "prospective students shift from courses with low private rates of return to those with high rates of return". If this is the case, tuition subsidies may be inefficient, if (or when) market signals are distorted. Focus group research by Penny Ehrhardt (2002) showed some evidence of course costs having an impact on the choice of tertiary course of some students; although, due to a small sample size and the qualitative nature of the research, caution must be exercised when these results are interpreted.

Another line of thought is that negative attitudes towards student loans will deter young people from undertaking higher education (Payne and Callender, 1997). In New Zealand, studies by Baldwin et. al (1995) and Parr (1995) led them to conclude that one of the contributing factors to the decision of secondary students not to enter into tertiary study is the expected time it will take them to repay a student loan. However, the study by Baldwin et. al, showed that the respondents were poorly informed about the loan scheme, and on average, the actual fees charged by institutions were over-estimated by 100 percent (Baldwin et. al, 1995). In addition, there is anecdotal evidence that some people are willing to go into debt for a depreciating asset such as a car, but at the same time are unwilling to take on debt for a (potentially) appreciating asset, tertiary education. (Baldwin et. al, 1995).

Another factor of concern, which is seen by some as having been exacerbated by student debt is the "brain drain" - where skilled people go overseas (Brett and Chamberlan, 1997). Brett and Chamberlan posit that this occurs because highly talented people can earn more overseas and therefore pay off their debt quicker, or avoid paying it completely. Despite the argument, only 6.3 percent of individuals with student loans are registered as being overseas (as at 30 June 2003), and the New Zealand Vice-Chancellors' Committee Report (1999) on New Zealand graduate destinations indicates that those who do leave return within five years (IRD, 2003). Furthermore, Choy and Glass (2001) concluded that New Zealand has experienced more of a brain exchange than a brain drain – from 1961 to 2001 net outflows of New Zealand citizens were balanced by net inflows of educated non-New Zealand citizens.

It has also been argued that debt burdens have become intolerable, and have spiralled out of control (www.students.org.nz). Comparatively speaking, though, student debt accounts for a small proportion of outstanding debt – comprising less than eight percent of mortgage debt held by New Zealanders (www.stats.govt.nz). Another argument against student loans is that debt delays individuals' decisions to have children (www.students.org.nz). However, a counterargument is that it is actually having an education, as opposed to a loan, that is delaying people having children (LaRocque, 2003; Norton, 2003). There is also the possibility that both factors play a part.

Despite the many arguments against the loan scheme, if the return to the individual from investing in tertiary education is profitable, then the rational individual posited by economic theory will not be deterred from taking out a loan to participate in higher education. Nonetheless, there appears to be a group of students averse to the idea of debt, however economically rational it may be to borrow (Payne and Callender, 1997).

2.5 State Subsidisation of Higher Education

The literature recognises the large number of costs and benefits that occur to the individual and to society as a result of tertiary education. However, a number of individuals believe that higher education should be fully funded by government (including students' living costs), whilst others argue the loan scheme is too generous to students, and that there is a case for decreasing subsidies.

Proponents of full government subsidisation of tertiary education question why the student loan scheme should exist at all, and argue that access to education is a right, not a privilege (www.students.org.nz). This line of reasoning ignores the fact that higher education is an economic commodity; and resources devoted to tertiary institutions are at the expense of other activities, such as funding for health or primary education (Barr, 1989). Also, there are no price signals guiding the choice to study and choice of course if higher education is entirely free (S. Birks, personal communication, 22 December, 2003).

In addition, some individuals and lobby groups feel that free tertiary education would provide the most access (Alliance New Zealand, 1999). However, despite the deterrent effect of cost increases, New Zealand and overseas data show an increase in tertiary participation (Maani, 1997). It is unknown what would have occurred in terms of participation if course costs had

remained small, and allowances for living costs were almost universal. In addition, supply constraints meant that funding was needed from somewhere – in New Zealand, it came from the individual student.

One argument that taxpayer subsidies are too high pertains to the wealth of the individuals participating in higher education. Throughout the world, members of low-income families tend to have lower levels of educational attainment. In New Zealand, evidence shows that the higher the income background an individual is from, the greater the likelihood of participating in tertiary education, with the effect being more pronounced at universities (Maani, 1997). It can therefore be argued that it is conflicting with redistributive objectives (if government is wanting to redistribute wealth from the rich to the poor) that the potentially affluent student is subsidised by a population of which the majority of members are poorer, when graduates go on to financially benefit from their degrees (NZBR, 1997; Barr, 2002; Gove, 2003).

Furthermore, a case in favour of a greater contribution by the individual student results because of competing claims for public spending. It has also been argued that social returns to education are likely to be larger at lower education levels (Payne and Callender, 1997). Therefore, more effective (and efficient) use of taxpayer funds could occur if spending were directed at primary and secondary education (Cronin and Simmons, 1987). Again, marginal benefits, as opposed to total benefits, should be measured when determining efficient use of taxpayer funding for differing forms of education.

Some individuals arguing for decreased support for students use the proposition that student loans are utilised for purposes other than paying for the necessary costs of tertiary education. A survey of nearly 2,000 individuals in England who had taken out student loans in 1996 showed that one in eight did so mainly because of financial advantage, as opposed to a financial requirement in order to participate in higher education (Payne and Callender, 1997). Loans were obtained to either invest the money to profit from the interest differential between the market rate and that charged under the loan scheme, or to finance leisure spending or the purchase of large consumer goods (Payne and Callender, 1997). Although this author can find no similar research in New Zealand, anecdotal evidence suggests that the loan scheme is used for similar reasons. If this were the case, then economic reasoning would suggest that students are being treated more favourably than other members of the population.

2.6 Effects of Student Debt

There is a lack of empirical research into the consequences of student debt in New Zealand, perhaps due to the fact that the loan system is relatively new. Nevertheless, many opinions have been aired - Brett and Chamberlan (1997) believe that student loan debt has a significant effect on New Zealand's economy in the sense that debt raises the price of professional services, thereby causing inflationary pressures. However, with a competitive labour market, if education is highly subsidised, some of the returns will go to the taxpayer in terms of lower incomes for graduates (Treasury, 1987; S. Birks, personal communication, 10 November, 2003). This results because the effect of government subsidisation of higher education is to lower the net cost to the individual of studying. Consequently, more individuals will participate, increasing the supply of graduates, leading to a lowering of the market rate (wage) for graduates.

Stanley-Clarke (2000) argues that debt impacts on every aspect of an individual's life including living patterns, ability to save, the jobs considered, when they take on mortgages, when they marry, and their ability to save for their own children's education. However, Maani (1997) points out that research completed in the United Kingdom by Hansen (1986) and Mishan (1969) shows no link between the decision to get married and the amount of debt held in the form of a student loan. Despite this, no similar research has been conducted in New Zealand, but again this may be primarily due to the fact that the changes are fairly recent.

It has also been argued that, if student debt is allowed to continue to grow, any fall-off in repayment rates could have grave consequences for New Zealand's creditworthiness (Public Questions Committee, 2000). However, this reasoning is questionable – repayments are linked to income in New Zealand, so repayment rates are unlikely to change significantly even if student debt grows in absolute terms.

2.7 Summary

The literature on the topic of student loans and debt is vast, and only a small portion could be discussed in this chapter. Student loan schemes are a common method employed by governments to support individuals pursuing tertiary qualifications. The use of student loans is highly contentious, as is the impact of student debt and the extent to which higher education should be subsidised. Despite the disagreements, there does appear to be a common agreement that higher education is important for the economy and society as a whole.

CHAPTER 3 THE NEW ZEALAND STUDENT LOAN SCHEME

New Zealand's student loan scheme became law on 21 December 1992. Liability to repay was set retrospectively from 1 April 1992, as declared in subsection 1(3) of the Student Loan Scheme Act 1992. This chapter outlines the current operating rules of the Scheme.

3.1 Eligibility and Entitlement

Any New Zealand citizen, permanent resident, or refugee is eligible for a student loan so long as he or she is not an un-discharged bankrupt, and is on an approved full-time course of at least 12 weeks or a part-time course of no less than 32 weeks.[4] Before the loan is approved, a contract must be signed with the Crown in which the student agrees to pay back the loan with interest.

Eligible students can borrow up to 100 percent of course fees regardless of the course they are studying, and up to $150 per week in living costs for a maximum of 37 weeks for every year of study.[5] Students at Private Training Establishments (PTEs) can only borrow a maximum of $6,500 in total over the course of their study. Fees must be direct credited to the tertiary institution at the beginning of the course – a move introduced to reduce the ability of borrowers to use student loan money for non-educational purposes (www.executive.govt.nz).

If a student allowance is received, the living cost entitlement is reduced by the net amount of the allowance paid. For example, if a student gets an allowance of $120 per week after tax, then only $30 can be borrowed each week in the form of living costs.[6] Also, if an individual is eligible to borrow the full living costs of $150 per week and chooses not to claim the full entitlement they are unable to borrow the balance later on. Entitlements are the same for both undergraduate and postgraduate students.

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4 Prior to 2000, prisoners were ineligible for a student loan. Prisoners can now apply for a student loan for compulsory fees and course related costs. If the prisoner is on home detention living costs can be applied for also.

5 If a student is entitled to a Training Incentive Allowance, the amount that can be borrowed for compulsory fees goes down by the amount of the allowance that is received. A Training Incentive Allowance, distinct from a student allowance, is available to those on the Domestic Purposes Benefit, Widows Benefit, Emergency Maintenance Allowance, or Invalids Benefit to help with the costs associated with training that will increase the individual's chance of getting a job.

6 Student allowance component excludes accommodation supplements and bursary payments.

In addition to borrowing for course fees and living costs, up to $1,000 per year can be borrowed for Course Related Costs (CRCs) such as textbooks, stationery, childcare, travel expenses or computer equipment.[7] This money is designed to be obtained only after receipts or quotes have been collected and posted, and reimbursement is authorised. However, at the country's largest university, Massey University, a Bachelors degree student can obtain documentation from the institution stating that their CRCs sum to over $1,000. The student can then obtain the maximum amount able to be borrowed as a lump sum payment. The author is unsure if this is the case at other New Zealand universities.

3.2 Administration Fee

A $50 administration fee is charged each year in which a student borrows money under the loan scheme. This is charged to the loan account for the first time in each year in which a loan is drawn.

3.3 Compulsory Repayments

Currently, ten percent of all income earned over the repayment threshold of $15,964 (before tax) must be repaid to an outstanding student loan, regardless of whether the person is working full-time or part-time.[8] Compulsory repayments are generally deducted from wages or salary through Pay As You Earn (PAYE) to the IRD. Repayments are not tax deductible because total gross income still determines other tax liabilities.

3.4 Voluntary Repayments

Voluntary repayments to an outstanding loan may be made to the IRD at any time.

3.5 The Interest Rate

The interest is calculated on every student loan on a daily basis, compounded to the loan balance each year on 31 March, and continues to be applied until the loan is repaid in full. The nominal interest rate is set annually by the IRD and is split into two components: the base interest rate and the interest adjustment rate. The interest adjustment rate accounts for the effects of inflation and is based on the Consumer Price Index (CPI) from the previous

[7] If a student is entitled to a Training Incentive Allowance, the amount that can be borrowed for CRCs goes down by the amount of the allowance that is received.

[8] From 1 April 2004, the income level at which borrowers must begin to repay their loans increases to $16,172.

year ending 30 September.[9] The base interest rate reflects the costs to the Crown of the scheme, including the cost of Government borrowing.[10] The total interest rate is found by adding the base interest rate to the interest adjustment rate. Interest rates since the inception of the student loan scheme are set out in Table 3.1.

Table 3.1: Student Loan Interest Rates 1 April 1992 – 31 March 2004

Year Ending 31 March	Base Interest Rate (%)	Interest Adjustment Rate (%)	Total Interest Rate (%)
1993	6.0	2.2	8.2
1994	6.2	1.0	7.2
1995	5.7	1.3	7.0
1996	7.6	1.4	9.0
1997	6.2	2.2	8.4
1998	5.9	2.3	8.2
1999	6.2	1.8	8.0
2000	5.3	1.7	7.0
2001	6.1	0.9	7.0
2002	3.1	3.9	7.0
2003	5.1	1.9	7.0
2004	4.2	2.8	7.0

Source: Inland Revenue

3.6 Interest Write-Offs

3.6.1 Full Interest Write-Off

In 2000, full interest write-offs were introduced to ensure that full-time and low-income part-time students do not pay interest on their loan while they are undertaking tertiary education. Currently, all students who earn under $25,909 per annum are entitled to have interest written off during the year of study.[11,12]

9 Section 87(2) of the Student Loan Scheme Act 1992
10 Section 87(3) of the Student Loan Scheme Act 1992
11 Only if the individual concerned is a New Zealand resident for taxation purposes.
12 From 1 April 2004, the maximum income level for a full interest write-off for part-time or part-year students will rise to $26,140

Interest accrues throughout the period of study and, on 31 March the following year, Inland Revenue confirms that income was below the threshold; all interest that was charged the previous year is then written off. Full interest write-offs resulted in more than $64 million, $69 million, and $74 million of student debt being written off in the years ending 31st March 2001, 2002 and 2003, respectively (Ministry of Education, 2003).

3.6.2 Base Interest Write-Off

A borrower is entitled to a full base interest write-off if income is less than $15,964 before tax per annum, and the individual is a New Zealand resident for taxation purposes. This effectively means that the real interest rate charged on the loan is zero, as the loan balance increases only at the rate of inflation.

3.6.3 Partial Interest Write-Off

If a borrower is unable to make compulsory repayments to cover interest charges, but has an annual income greater than or equal to $15,964, an interest reduction may still apply. This occurs if the base interest charged is more than 50 percent of the total repayment obligation for the year. The write-off is equal to the base interest charged minus 50 percent of the annual repayment obligation. Table 3.2 gives an example of a partial interest write-off, where annual income is $25,000, and the opening loan balance is $14,000 at 1 April 2003.[13]

[13] Repayment threshold = $15,964, Repayment obligation = 10% of all income over repayment threshold, Base interest rate = 4.2%, Interest adjustment rate = 2.8%.

Table 3.2: Application of Partial Interest Write-Off, Opening Loan Balance $14,000, Annual Income, $25,000

Repayment Obligation = (Income - $15,964) * 10%	$ 904
Total Interest Charged Base Interest Charged = Loan balance * 4.2% Interest Adjustment Charged = Loan balance * 2.8%	$ 588 $ 392
	$ 980
Partial Interest Write-Off Base interest charged Less 50% repayment obligation	$ 588 $ 452
	$ 136
Closing Loan Balance, 31 March 2004 = Opening loan balance – Repayment obligation + Interest charged – Interest write-off	$ 13,940

The total value of interest write-offs from 1995 – 2003 is given in table 3.3. The introduction of full write-offs in 2000 saw an 846 percent increase in the amount of interest cancelled from 2000 to 2001.[14]

Table 3.3: Value of Interest Write-Offs, Year Ending 31 March, 1995 – 2003

Year	Interest Write-Offs ($m)
1995	4.3
1996	5.5
1997	12.6
1998	16.9
1999	20.3
2000	20.3
2001	192.1
2002	141.4
2003	198.1
Total	**$612m**

Source: Inland Revenue

[14] Interest charged on loans taken out in 2000 was written off on 31 March 2001.

3.7 Loan Write-Offs

Under the Student Loan Scheme Act 1992, a student loan can only be written off in one of the following circumstances: small balance write-off, bankruptcy, or death of borrower.

3.7.1 Small Balance

If an individual has ten dollars or less of their final loan balance owing then the remainder of the loan is written off at the end of the financial year. Table 3.4 gives the value of small balance write-offs from 1998 to 2003.

Table 3.4: Value of Small Balance Write-offs 1998 – 2003

Year (as at 30 June)	Small Balance Write-offs
1998	$19,480
1999	$24,877
2000	$12,796
2001	$18,473
2002	$21,774
2003	$29,190
Total	**$126,590**

Source: Inland Revenue

3.7.2 Death and Bankruptcy

If an individual with a student loan dies, the entire loan debt of the deceased is written off. Furthermore, when a person is adjudicated bankrupt by the court, any student loan amount still held by Inland Revenue or StudyLink is written off under the Insolvency Act 1967.[15] Table 3.5 gives the value of write-offs due to bankruptcy and death from 1998 to 2003.

[15] Inland Revenue does not bankrupt student loan borrowers solely on the basis of student loan borrowings or overdue repayment obligations.

Table 3.5: Value of Deceased and Bankruptcy Write-offs 1998 – 2003

Year (as at 30 June)	Deceased ($m)	Bankrupt ($m)
1998	1.20	1.11
1999	2.29	2.30
2000	1.60	2.79
2001	2.33	2.83
2002	2.64	3.51
2003	2.26	3.52
Total	**$ 12.32m**	**$ 16.06m**

Source: Inland Revenue

3.8 Overseas Travel

Repayment obligation for borrowers who are overseas is based on the loan balance at 1 April after the date the borrower left New Zealand. For example, if the borrower left the country on 1 August 2002, the obligation is calculated as at 1 April 2003. From the loan obligation, an estimate of the interest that would be charged for the following 12 months is calculated (in the above example, for 1 April 2003 to 31 March 2004) and this amount is divided into four equal installments to give the repayment obligation. Repayments are due on 31 March, 30 June, 30 September, and 31 December of each year. Required repayments for borrowers who are overseas are given in Table 3.6.

Table 3.6: Required Loan Repayments for Borrowers Currently Overseas

Loan Balance	Repayment Required per Year
Less than $1,000	Total balance + Estimated Interest
$1,000 - $1,000	$1,000 + Estimated interest
Greater than $15,000	One-fifteenth of loan balance (loan balance/15) + Estimated interest

Source: Inland Revenue

3.9 Penalties for late repayment

When a borrower does not meet the compulsory repayment obligation for the year by the due date for that payment, the amount assessed becomes overdue. A penalty of two percent per month is charged on the overdue amount (including any penalties previously charged), until the total overdue amount is fully repaid. If the individual is earning over the threshold and fails to make any repayments for two years in a row, the entire loan balance must be paid back immediately.

Particular difficulties arise in collection when an individual with an outstanding loan is overseas. If Inland Revenue is not notified of travel intentions, it becomes difficult, if not impossible, for the Department to determine where the person is and collect the required repayments. As a result, many student loans remain unpaid. As at 30 June 2003 more than $100 million in student loan debt was overdue, with 38.8 percent of overseas borrowers (that the IRD is aware of) owing money on their loan account (IRD, 2003).

CHAPTER 4 COMPARISON WITH OVERSEAS STUDENT LOAN SCHEMES

In this chapter comparisons of New Zealand's student loan scheme are drawn with the official loan schemes of Australia, the United States, and England and Wales. For Australia, the information is specific to the Higher Education Contribution Scheme (HECS). For the United States, the information is specific to the William D. Ford Federal Direct Loan Program (FDLP).[16]

4.1 Funding Method, Tax Deductibility, Collection Agency and Regime

Table 4.1 sets out comparative information about the funding method, collection agency, collection regime, and tax deductibility of the various loan schemes.

Table 4.1: Comparative Funding, Agency, Collection Regime, and Tax Deductibility of Repayments

Characteristic	New Zealand	Australia	United States	England and Wales
Funding Method	Central Government	Federal Government	Central Government through the sale of Treasury Bills	Central Government
Collection Agency	Inland Revenue through Pay As You Earn (PAYE)	Australian Taxation Office through Pay As You Go (PAYG)	Department of Education	Inland Revenue through PAYE
Collection Regime(s)	Income contingent	Income contingent	1. Standard 2. Extended 3. Graduated 4. Income contingent	Income contingent
Tax Deductible Repayments?	No	No	Partial: Up to $2,500 in student loan interest payments tax deductible per year.	No

[16] A further discussion of loan schemes can be found in: Appendix A – Australian loan scheme, Appendix B – United States loan scheme, Appendix C – England and Wales loan scheme.

4.2 Repayment Threshold and Voluntary Repayment Benefits

The corresponding repayment thresholds and voluntary repayment benefits are set out in table 4.2. Money amounts are in each country's unit of currency except where conversions have been made to New Zealand dollars (as denoted by $NZ).[17]

Table 4.2: Repayment Thresholds and Voluntary Repayment Benefits[18]

Characteristic	New Zealand	Australia	United States	England and Wales
Repayment Threshold(s)	10% of all income over $15,964	Nil for all income below $24,365 (NZ$28,444) 3.0%: $24,365 to $25,694 3.5%: $25,695 to $27,688 4.0%: $27,689 to $32,118 4.5%: $32,119 to $38,763 5.0%: $38,764 to $40,081 5.5%: $40,082 to $43,858 6.0%: $43,859 +	1. Repayment within 10 years through fixed monthly amounts 2. Repayment within 12-30 years through fixed monthly amounts 3. Repayment within 12-30 years, monthly payments start out low then increase every two years 4. Monthly payments based on family size, size of loan, and Adjusted Gross Income (AGI). Repayments altered annually to reflect changes in AGI	9% of all income over £10,000 (NZ$28,289)
Voluntary Repayment Benefits	Nil	15% additional write-off if voluntary repayment ≥ $500	Rebate of 1.5% of original amount borrowed if first 12 required repayments met on time	Nil

[17] Exchange rate conversions were made on 21 October 2003 using the repayment calculator obtained from ANZ Bank [http://www.anz.com/nz/tools/rates/fxrates.asp]. All conversions have been rounded to the nearest whole number.

[18] All figures refer to a per annum basis.

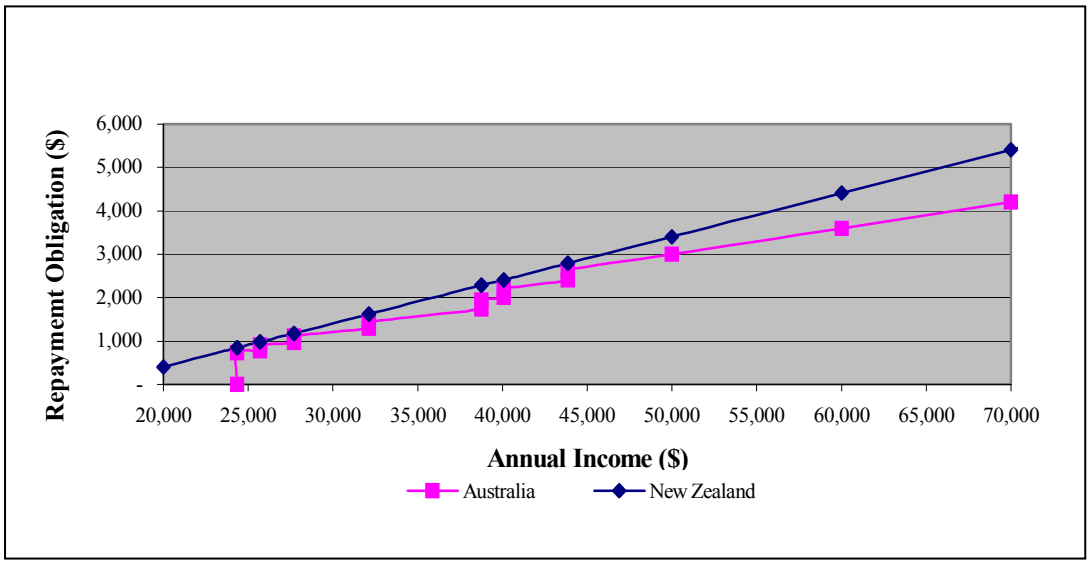
Repayment options 1 – 3 under the United States loan scheme are conventional, mortgage style loans, whereby an arrangement yields a stream of payments sufficient to amortise the loan over a set period of time. Option 4, like repayment under the New Zealand, Australian, and England and Wales schemes, is income contingent. The loan carries a contractual obligation to repay some percentage of future earnings until the outstanding debt is repaid. The percentage of earnings that goes to repaying the loan is either fixed for all income levels (like New Zealand), or progressive (like the Australian scheme). Income contingent loans have a tendency to tilt borrower subsidies in favour of those for whom income is not high enough, or sustained enough to generate sufficient repayments to fully cover the lender's cost of capital and all other costs associated with the lending (Johnstone, 2001). This results because, when earnings are below the threshold, repayments to a student loan are not required.

Except for the United States case, income contingent loans employ the powerful government tax system. This has the advantage of potentially lowering defaults and the direct costs of servicing and collecting loan payments (Johstone, 2001).

Unlike New Zealand, and England and Wales, the repayment thresholds in the Australian loan scheme are not marginal. As a result, multiple poverty traps are created – at some points more than one dollar is effectively taken in taxation for each additional dollar earned. The extreme example is an income of $24,365 versus $24,364. The extra dollar earned incurs a compulsory repayment of $731 for the year (compared with a compulsory repayment of zero for an income of $24,364).

Despite the repayment thresholds not being marginal, the proportion of income above the threshold collected for loan repayment is much lower under the Australian scheme (maximum of six percent of income), compared with the New Zealand scheme (ten percent of all income), and the England and Wales scheme (nine per cent of all income). Income contingent loans increase the effective marginal tax rate for every dollar earned over the threshold. In New Zealand for example, every dollar earned over $15,964 has an effective marginal tax rate ten percent higher than if there were no outstanding student loan. Figure 4.1 illustrates the difference in compulsory repayments required in New Zealand and Australia when income changes – at every level of income compulsory repayments are higher in New Zealand.

Figure 4.1: Compulsory Loan Repayments, New Zealand and Australia



The repayment threshold and the rate at which loans must be repaid is of great debate; students groups in all of the countries studied argue that the corresponding income threshold is too low, and the proportion of repayment required is too high.

The two schemes that offer direct repayment incentives are Australia and the United States. The Australian scheme gives an additional write-off of 15 percent for all voluntary repayments over $500; this is likely to advantage those on higher incomes, who are more able to afford to make repayments above the compulsory rate. The United States scheme offers a rebate of one and a half percent of the amount borrowed if the first 12 required repayments are made on time, and tax deductibility of up to $2,500 per annum in interest payments; both factors have the effect of encouraging repayment of outstanding loan balances.

4.3 Interest Rate and Administrative Charges

Table 4.3 sets out the interest rate and administrative charges under each scheme.

Table 4.3: Interest Rate and Administrative Charges

Characteristic	New Zealand	Australia	United States	England and Wales
Interest Rate per Annum (as at 1 July 2003)	7.0%	Indexed to Consumer Price Index (CPI) as at 1 June each year	Direct Subsidised and Direct Unsubsidised Loans: a) In repayment: 3.42% b) Prior to beginning of repayment or during a period of deferment: 2.82%[19] c) Government pays interest on loan during period of study for subsidised loans Direct PLUS loans: 4.22% Direct consolidation loans and PLUS consolidation loans: Fixed weighted average with a maximum of 8.25%	Loan indexed to Retail Price Index (RPI)
Additional Charges	$50 administration fee for each year in which a loan is drawn	Fees are 33.33% higher if a student loan is taken out to pay for them[20]	4% fee on all amounts borrowed	None

There is subsidisation of the interest rate charged under the loan schemes of Australia, and England and Wales, and for Direct Subsidised Loans under the FDLP. This results in individuals on lower incomes receiving a higher interest rate subsidy than those on higher incomes, because compulsory repayments occur over a longer period of time. In contrast, the interest rate charged on student loans in New Zealand is comparatively high at seven percent per annum. However, it is questionable whether this actually reflects the true cost to the Crown of the student loan scheme; interest rates on unsecured personal loans from major

[19] Deferment is a period in which repayment of the principal balance is postponed.

[20] A 25% discount is given for course fees paid up-front. Therefore, a loan is 100%/75% = 133.33% (2 d.p.) the cost of up-front fees. This discount decreases to 15% on 1 January 2005, meaning that a loan will be 100%/85% = 117.65% (2 d.p.) the cost of up-front fees.

lending institutions commonly exceed 15 percent per year, and mortgage interest rates commonly exceed seven percent each year.

The higher interest rate charged in New Zealand gives a greater incentive for borrowers to repay their loan at a faster rate in order to avoid a larger overall debt, though this is not always practical for those on low incomes. Despite this, a rational individual will only make voluntary repayments if the money cannot be better used elsewhere. For example, if a rational individual with a student loan also has outstanding debt in the form of a mortgage, hire purchase, or a credit card, and the interest charged on the debt is higher than seven percent per annum, it is preferable that those debts be repaid first, and no voluntary repayments will be made on the student loan. Furthermore, if a rate of return greater than the effective interest rate charged on student loans can be obtained elsewhere, voluntary repayments will never be made. Opponents argue that charging interest has a detrimental impact by significantly hindering repayment, and subsequently affecting life-cycle decisions such as having children, and purchasing a house (www.students.org.nz).

The $50 administration fee charged in New Zealand can have a large impact on the cost of borrowing small amounts under the scheme. The 2003 Guide to Tertiary Education Funding for Tertiary Education Providers suggests administrators should advise students wanting to borrow a small amount (less than $1,000), that it may be cheaper to get an interest free overdraft from a trading bank, especially if they expect to repay the money back within a few months (Ministry of Education, 2003). Notwithstanding this advice, individuals can borrow larger amounts and attain interest on unused funds, then repay.

The only country charging an administration fee is the United States, at a relatively high rate of four percent of the amount borrowed each year. It is likely that this has the effect of discouraging students borrowing more than is necessary to fund their tertiary education.

The Australian loan scheme is unique in that those who have the ability (and choose) to pay their fees upfront receive a substantial fee discount. Since it is probable that those receiving the fee discount will generally be more affluent, the initial effect of the loan scheme is to relatively disadvantage those on lower incomes (Warner, 1999).

4.4 Maximum Borrowing Permitted

Table 4.4 sets out the maximum borrowing amounts under each scheme. In England and Wales, borrowing is only available for undergraduate students.

Table 4.4: Maximum Borrowing per Annum

Characteristic	New Zealand	Australia	United States	England and Wales
Maximum Borrowing Amounts per Year (Full-time Students)	Course fees + $1,000 CRCs + $150 per week living costs (for a maximum of 37 weeks) No limit on the total amount that can be borrowed	Course fees (Higher Education Contribution) Maximum borrowing capped at $50,000 (NZ$58,370) over course of study	Dependent undergraduate student:[21] 1st year $2,625 (NZ$4,434) 2nd year $3,500 (NZ$5,913) 3rd & 4th year $5,500 (NZ$9,292) Independent undergraduate student: 1st year $6,625 (NZ$11,193) 2nd year $7,500 (NZ$12,671) 3rd & 4th year $10,500 (NZ$17,739) Graduate/Professional: $18,500 (NZ$31,255) Total borrowing capped over course of study: $23,000 (NZ$38,858) for a dependent undergraduate student $46,000 (NZ$77,716) for an independent undergraduate student $138,500 (NZ$233,992) for a professional or graduate (includes previous loans for undergraduate study)	Living away from home: £4,000 full year (NZ$11,315) £3,470 final year (NZ$9,816) Living away from home in London:[22] £4,930 full year (NZ$13,946) £4,275 final year (NZ$12,093) Living at home: £3,165 full year (NZ$8,953) £2,765 final year (NZ$7,822) 75% of maximum loan available regardless of any other income the student has Entitlement to remaining 25% depends on the student's income and that of their family[23] Additional £500 if eligible for a hardship loan

[21] An individual is deemed to be independent if they meet one of the following criteria: 25 years or older, married, have children, a veteran of the United States Armed Forces, or an orphan or ward of the court.

[22] In England and Wales the amount able to be borrowed decreases in the final year of study because the summer holidays are not covered – students' are assumed to be available for work or eligible for a benefit. Furthermore, higher borrowing is permitted for students who live in London because of the higher cost of living.

[23] Entitlement to remaining 25% depends on family's income only if borrower is a dependent student. A student is assumed to be financially independent if they fit one of the following criteria: 25 years or older, are married, have no living parents, have supported themselves for at least three years.

Table 4.5, where all figures have been converted into New Zealand dollars, shows that the median loan size in England and the United States is much larger in comparison with New Zealand.[24] Nonetheless, the significantly higher incomes earned by graduates in these countries helps to offset the larger debt incurred by those undertaking higher education. In Australia, the median student loan is smaller than in New Zealand, despite the incomes of those with Bachelors degree being considerably higher. This is possibly due to New Zealand students being able to borrow for living costs and course related costs (unlike Australian students), in addition to course fees.

Table 4.5: Median Income, Loan Size and Debt-to-Earnings Ratio

	Median Income[25]				
Country	**Working Age Population**	**Degree Recipients[26]**	**Difference[27]**	**Median Loan Size**	**Debt-to-Earnings Ratio (%)**
New Zealand	$18,500	$35,100	$16,600	$13,660 at 31 March 2003	38.92
Australia	$20,397	$52,534	$32,137	$9,306 at 30 June 2003	17.71
United States	$40,313	$61,868	$21,555	$26,591 at 30 April 2002	42.98
England	$69,388	$85,739	$16,351	$21,296 at 30 June 2002	30.69

Source:

Column 2 and 3: Statistics New Zealand - 2001 Census of Population and Dwellings (Row 2)
Australian Bureau of Statistics - 2001 Census of Population and Housing (Row 3)
United States Census Bureau - United States Census 2000 (Row 4)
Department of Trade and Industry - Census 2001 (Row 5)

Column 5: Inland Revenue (Row 2)
Department of Education, Science and Training (Row 3)
Department of Education (Row 4)
Student Loans Company (Row 5)

[24] Exchange rate conversions were made on 21 October 2003 using the repayment calculator obtained from ANZ Bank [http://www.anz.com/nz/tools/rates/fxrates.asp]. All conversions have been rounded to the nearest whole number

[25] Difficulty in obtaining statistics on income and loan size at the same period of time, and differing definitions of income between countries mean that the data are not directly comparable. They are intended to act as indications only.

[26] Bachelors degree recipients only.

[27] Equal to median income (Bachelors degree recipient) – median income (total working age population).

The difference in median income between the total working age population and Bachelors degree recipients is significant, and replicates the substantial body of evidence showing that, on average, individuals with higher levels of education earn more than those with lower levels of education. However, these differences vary considerably, with a low of $16,351 in England and a high of $32,137 in Australia.

A simple measure of the financial burden that borrowing represents to individuals is to calculate the debt-to-earnings ratio, defined here as the median student loan divided by the median annual income of graduates. Differences in earnings can be due to both education and ability – assuming that the relative impact of the two is similar over countries, the lower debt-to-earnings ratios in Australia and England imply that the financial returns to tertiary education may be higher in these countries than in New Zealand.[28] The United States was the only country studied that had a larger debt-to-earnings ratio than New Zealand – just over four percent higher.

Unlike the New Zealand and Australian loan schemes, the amount that can be borrowed in England, Wales, and the United States is dependent on whether the student is reliant on their parents for support. However, the presumption that students are financially dependent on their parents up to the age of 25 years is questionable.

England and Wales are the only countries in which an additional loan is available (in the form of a hardship loan) if the student can prove they are in extreme circumstances of financial difficulty. Nonetheless, loans are available for a similar purpose in all of the countries studied, but they are not administered through the applicable student loan scheme. Instead, they are funded by various government welfare agencies.

[28] Although returns to education alone are not accurately being measured, cross-country differences in the debt-to-earnings ratio may reflect differences in relative returns to higher education. This is further complicated by short run versus long run effects and the possible impact of international labour mobility (S. Birks, personal communication, 15 December, 2003).

4.5 Comparative Write-Off Provisions

The different write-off provisions available under the student loan schemes are set out in table 4.6. Under the United States FDLP, income contingent debts are cancelled after 25 years if all required repayments have been made in full. If so, the forgiven debt is treated by the Internal Revenue Service (IRS) as income in that year, and taxed as ordinary income.

Table 4.6: Comparative Write-Off Provisions

Characteristic	New Zealand	Australia	United States	England and Wales
Write-off Provisions	Interest write-off: a) Full interest write-off while studying if income < $25,909. b) Base interest write-off if income < $15,964. c) Partial interest write-off if income ≥ $15,964 and base interest > 1/2 repayment obligation. Partial write-off equal to base interest – 1/2 repayment obligation. Loan write-off: a) Upon death. b) If borrower is discharged bankrupt. c) Loan balance < $10.	Outstanding loan balance written off upon death of the borrower	Full loan write-off if: a) Become totally and permanently disabled. b) Unable to complete a course of study because school closed or falsely certified eligibility. c) In bankruptcy (in rare cases). d) Upon death. Partial loan write-off. If eligible for Teacher Loan Forgiveness Program, write-off up to $5,000.	Full loan write-off if: a) Become permanently disabled. b) Upon death. c) If all compulsory repayments have been made, upon reaching 65 years of age.

The New Zealand student loan scheme is the only programme whereby interest write-offs apply (apart from the specific write-off for teachers under the FDLP). Individuals with moderate or low income and undertaking full-time study are eligible for a full interest write-off. This is likely to have the effect of encouraging borrowing throughout the period of study, as the only financial cost to the student is the $50 administration fee charged. Students can take out a loan, invest savings that would have previously been used to pay for fees and living costs, and earn interest - thereby making a net financial gain during the period of study.

The other write-offs that apply under the New Zealand scheme are base interest write-offs (only for very low-income borrowers), and partial interest write-offs (typically in a high loan, low-income scenario).

CHAPTER 5 REPAYMENT ESTIMATES OF STUDENT LOANS

This chapter outlines the two models most often used in the debate over student loan debt in New Zealand. The Ministry of Education and the New Zealand Universities Students' Association have each estimated average repayment periods, but they used quite distinct models.

5.1 Ministry of Education – TESLA Repayment Model

The Ministry of Education has a role as a facilitator, rather than a provider of tertiary education in New Zealand. The Ministry's responsibilities include forecasting student debt and repayment periods; the Tertiary Education Student Loan Analysis (TESLA) model was created to achieve this. TESLA is a microsimulation model that generates a sample student population of 100,000, representing an estimated 4 million borrowers from 1992 to 2050. Every individual in the model is given student loan characteristics from historical data of borrowing, income, and repayments for each year. The data are accumulated to give an overall annual estimate of debt repayments, interest, write-offs, and an average debt repayment period.

5.1.1 Assumptions

(1) The amount borrowed is "forced" to be the same as historical data. The number of borrowers and the amount borrowed are taken from 1992 to 1995 Student Loan Account Manager (SLAM) data; SLAM was the business unit of the Ministry of Education that administered loans from 1992 to 1999.

(2) Initial income is determined by census data, and borrowers are transitioned through income states each year according to data from the IRD, which is based on actual loan clients from 1992 to 1994.

(3) Compulsory repayments are calculated using the current threshold under the student loan scheme.

(4) Interest and interest write-offs are calculated using current rates and operating rules under the scheme.

(5) Voluntary repayments are based on analysis of aggregate repayment data against incomes.

(6) Individuals with an outstanding loan retire at age 65. From that day forward, annual income is below the repayment threshold; no more repayments are ever made, and the outstanding debt is written off.

5.1.2 Results

The average repayment periods of student loans estimated by the TESLA model are given in table 5.1.

Table 5.1: Average Repayment Period of Student Loans

	Average Repayment Period	
Ethnicity	**Male**	**Female**
European	6.8 years	10.6 years
Maori	7.4 years	10.8 years
Other	9.0 years	13.0 years
Total	**7.4 years**	**11.1 years**

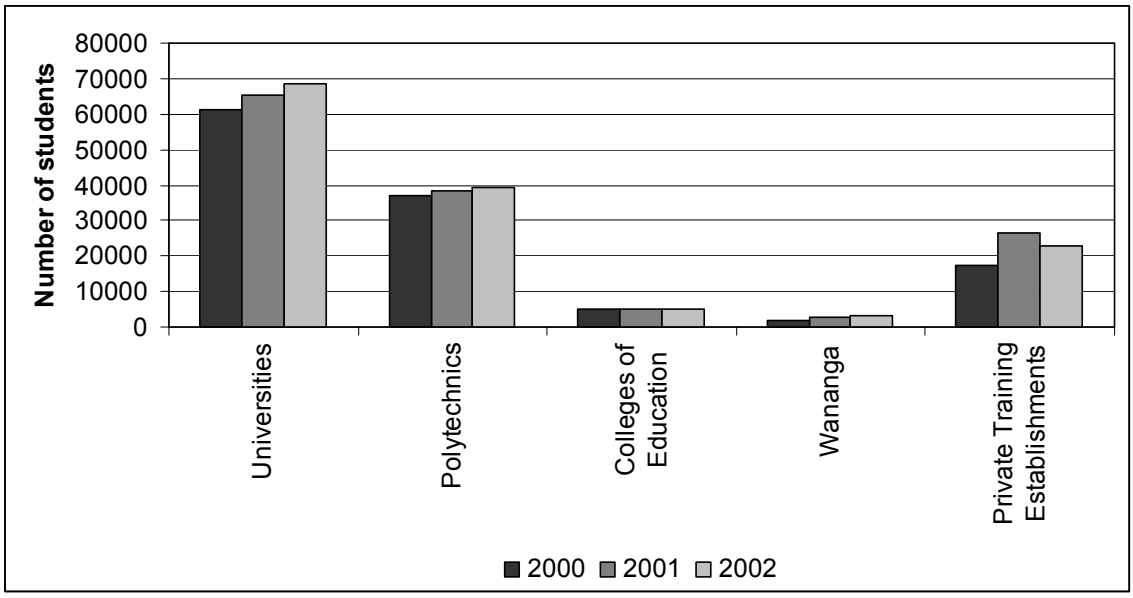
Source: Ministry of Education, TESLA model

There has been recognition by government that there is a need for more and better quality information on the impact of the student loan scheme. The Data Integration Project, which began in 2002, involves Statistics New Zealand merging educational data on a longitudinal basis from the Ministry of Education, and data on student loans from MSD, with income data from Inland Revenue at an individual student level. The aim of the Project is to allow for accurate estimation of repayment periods, analysis of the benefits of higher education, as well as assisting providers and policy makers with planning and strategic decisions.

5.1.3 Criticisms of Model

TESLA does not break down repayment times by qualification type – it simply gives an average repayment period for all student loans. That is, the model includes loans taken out for one year certificate and diploma courses, as well as money borrowed for three and four year degree level courses. Figure 5.1 shows course fees borrowed by education provider type from 2000 – 2002.

Figure 5.1 Students who Borrowed Fees by Provider Type 2000-2002[29]



Source: StudyLink

The greatest proportion of fees borrowed in 2002 was, and has historically been, by university students; these students are more likely to be participating in longer and more expensive courses than individuals studying at other tertiary institutions. It would therefore be useful to give an estimate of repayment times by qualification type – for example, to give an average repayment period for students undertaking a three year Bachelors degree at university. This would give students undertaking such courses a more accurate representation of the repayment period they are likely to face.

In reality, people older than 65 years of age can borrow under the scheme, and then earn above the repayment threshold, therefore being required by law to make repayments. The debt will only be written off upon death. Because TESLA writes off any outstanding debt at age 65, the model does not consider individuals who continue to repay their loan after this point and those who never repay their loan – leading to an underestimation in the average repayment period.

Some of the data used in the model are old, and out of date. Borrowing is taken from 1992 to 1995 figures, despite the substantial increases in fees and as a result, borrowing, that has occurred since then. Table 5.2 gives average borrowing from 1992 to 2002.

[29] Only students who borrowed for course fees are included because CRCs and living costs borrowed are not recorded by institution type.

Table 5.2: Average Amount Borrowed Annually, 1992 – 2002[30]

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total ($)	3,628	3,979	4,309	4,432	4,649	5,494	5,714	4,917	6,058	6,135	6,204

Source: Ministry of Social Development

Furthermore, incomes are transitioned according to data from 1992 to 1994. It is possible that the income premiums graduates can command may have decreased over this period, due to a significant increase in the number of people obtaining qualifications, as shown in table 5.3. From 1992 to 2001 there has been an increase of 129 percent in the number of Advanced Diplomas and Bachelors degrees received.

Table 5.3: Advanced Diploma and Bachelors Degree Graduates 1992, 1997 – 2001

Year	1992	1997	1998	1999	2000	2001
Awards Received	10,916	20,864	21,514	23,677	24,117	25,052

Source: Ministry of Education

A copy of the TESLA model could not be obtained, and therefore testing sensitivity of results to varying assumptions was not possible.

5.2 NZUSA Debt Repayment Calculator

The New Zealand University Students' Association (NZUSA) is a federation of student associations set up to represent students on the matters of student concern. The body is aimed at political change – the primary objectives being to see the introduction of a universal living allowance and abolishing of course fees (F. Fitzsimons, personal communication, 28 October, 2003). One of the Association's key concerns is the detrimental effect that student debt has on the individual. As a result, a repayment model was created to estimate an average repayment period of student loans. For a university student undertaking a three year Bachelors degree, average length of repayment is estimated to be 15 years for males, and almost twice that, at 28 years for females.

[30] All data is represented in nominal terms and has not been adjusted for inflation.

5.2.1 Data

The debt calculator uses mean personal income from the 2001 Census of Population and Dwellings for the usual resident population count, for respondents indicating that their highest qualification obtained was a Bachelors degree. The data was further broken down by age (in 10 year cohorts), sex, and ethnicity. Table 5.4 sets out the mean income for respondents with a Bachelors degree.

Table 5.4: Mean Annual Income ($) for Respondents with a Bachelors degree[31]

	20 – 29 Years		30 – 39 Years		40 – 49 Years		50 – 59 Years	
Ethnic Group	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
European	32,453	27,236	63,755	36,093	72,909	38,837	69,773	39,281
Maori	28,160	24,892	50,376	33,872	54,626	38,011	52,284	35,048
Pacific Island	27,138	23,121	41,219	33,648	45,364	33,250	43,007	30,074
Asian	25,036	20,039	36,504	23,954	40,880	25,218	35,895	22,534
Other	23,061	17,858	35,028	21,329	39,028	22,904	34,756	19,778
Not Elsewhere Included	29,719	23,459	48,859	32,223	49,335	33,792	54,845	34,916
Total	**30,057**	**26,744**	**51,806**	**30,500**	**60,179**	**33,218**	**58,853**	**34,761**

Source: Statistics New Zealand, 2001 Census of Population and Dwellings

5.2.2 Assumptions

(1) Using figures obtained from the Ministry of Social Development, the end of study debt for the average university Bachelors degree recipient is $20,424 for females. The average male loan balance is slightly higher at $21,501.

(2) The graduate begins employment at age 20 after studying full-time for three years, and earns the mean income for the 20-29 year age bracket. Nominal income is assumed to remain constant for ten years until the person reaches age 30, whereupon income increases to the mean for 30-39 year olds. Again, nominal income remains unchanged for ten years until the person turns 40, at which point they move into the next income bracket and so on. This implies that wage inflation is equal to zero, and no performance related or length of service pay-rises are given to the graduate over the ten year period in which income is held constant.

[31] Extremely low incomes were exhibited in some categories – likely to be due to inappropriate aggregation. This occurs because incomes of a number of individuals are aggregated together, which may fail to acknowledge discrete differences between the individuals. For a further discussion of the problem see Birks, 2003.

(3) The nominal interest rate is an average of the interest rate charged on student loans from 1997 to 2003. The base interest rate is equal to 5.41 percent and the interest adjustment rate is 2.10 percent, giving a total nominal interest rate of 7.51 percent.

(4) Voluntary repayments are equal to zero over the life of the loan. That is, total repayments are equal to total compulsory repayments.

(5) All other current operating rules of the student loan scheme remain the same over the life of the loan.

5.2.3 Results

Estimated average repayment time of university students' loans are given in table 5.5.

Table 5.5: Average Repayment Period of University Students' Loans

	Average Repayment Time (Years)	
Ethnicity	**Male**	**Female**
European	12.95	21.91
Maori	15.73	23.71
Pacific Island	21.12	32.84
Asian	23.51	> 65
Other Ethnicities	25.73	> 65
Not Elsewhere Specified	15.76	28.54
Total	**14.88**	**27.86**

Source: NZUSA

5.2.4 Criticisms of Model

The assumption of constant nominal income for periods of ten years is highly unrealistic. It implies that real income decreases over the period (because wage inflation is assumed not to occur in the model, despite loan interest including an inflation component). It also implies that a large pay increase is received when an individual moves from one income bracket into the next. For example, a Maori male will have a pay rise of $22,216 upon turning 30 years old (from an annual income of $28,160 to $50,376). According to NZUSA's Research Officer the assumption results in repayment times being "slightly overestimated" (R. Matthews, personal communication, 15 July, 2003). However, when 2001 Census mean income data (for Bachelors degree recipients) is inputted in one-year cohorts, significantly

lower repayment periods result. Table 5.6 illustrates the difference in repayment period using mean income data in both one-year and ten-year cohorts. The assumption of constant income results in a pattern of initially overstating actual income (when the individual is in their early 20's, early 30's, etcetera), then understating actual income (when the individual is in their late 20's, late 30's, etcetera), for each ten-year cohort.

Table 5.6: Repayment Period Using Bachelors Degree Mean Income Data in One-Year and Ten-Year Cohorts

	Average Repayment Time (Years), 1 year cohort		Average Repayment Time (Years), 10 year cohort	
Ethnicity	**Male**	**Female**	**Male**	**Female**
European	13.59	15.81	12.95	21.91
Maori	15.25	18.23	15.73	23.71
Pacific Island	17.60	21.21	21.12	32.84
Asian	16.38	22.66	23.51	> 65
Other	17.67	22.49	25.73	> 65
Not Elsewhere Included	13.62	16.97	15.76	28.54
Total	**13.79**	**16.39**	**14.89**	**27.86**

Source: Column four and five – NZUSA

The assumption that the individual begins full-time employment at age 20 seems implausible; in the 2001 Census of Population and Dwellings only 2,703 individuals aged 20 years and under indicated they had obtained a Bachelors degree, representing just 10.6 percent of respondents under 25 years old with a degree. It therefore seems highly unlikely that the "average" graduate will begin full-time work at age 20.

The model assumes that only compulsory repayments are made over the lifetime of the loan. Despite this assumption, over $198 million in voluntary repayments were made to the IRD for the year ending September 2003, comprising 48.8 percent of total repayments (IRD, 2003a). Consequently, representing the repayment period calculated as an "average" is deceptive, due to the significant proportion of student loan repayments that are voluntary. The assumption increases the repayment period noticeably as shown in table 5.7, which introduces voluntary repayments to the debt calculator. The effect is more pronounced for females, due to repayment of principal at a much faster rate, therefore incurring less interest charges over the total life of the loan.

Table 5.7: Effect of Voluntary Repayments, $500 - $2,000 Per Annum, on Period of Outstanding Loan Debt

	Average Repayment Time (All Ethnicities)	
Voluntary Repayments Per Annum	**Male (Years)**	**Female (Years)**
$ 0	14.89	27.86
$ 500	12.77	17.71
$ 1,000	10.76	12.66
$ 1,500	9.55	9.98
$ 2,000	7.90	8.16

CHAPTER 6 DEBT AND REPAYMENT SCENARIOS

In this chapter the period of debt repayment is considered by making calculations using various debt and repayment scenarios faced by student loan holders. Loan size, income, interest rates, and voluntary repayments significantly influence the repayment period; changes in these variables will be modelled, leading to a number of overall scenarios. The analysis models both the time and cost requirement of these changes.

The income data used to conduct an analysis of repayment times of student loans was obtained from Statistics New Zealand, and sourced from the 2001 Census of Population and Dwellings. The census is conducted on a five-yearly basis under the authority of Section 23(1) of the Statistics Act 1975, the purpose being to collect demographic and social statistics which can be used by central and local government, business, and community organisations for planning and other decision making.

6.1 Census Data

The income data used in this research report pertain to the employed full-time usual resident population, people aged 15 years and above, who indicated that their highest qualification obtained was a Bachelors degree.[32] A person is categorised as being employed full-time if they work 30 hours or more per week in their specified occupation. The data were further broken down by gender, age (in one year cohorts), and ethnicity.[33] Ethnicity is defined by Statistics New Zealand as being a social group or groups that people identify with, or feel they belong to (www.stats.govt.nz). Respondents who identify themselves as belonging to more than one ethnic group are counted in the statistics for all of the identified ethnic groups. For example, a person who identifies their ethnic groups as being New Zealand European, Maori, and Tongan will be included in the statistics for each of these groups. The concept of ethnicity is different from that of descent. In the 2001 census, one in six people identified themselves as being of Maori descent but only one in seven people identified as belonging to the Maori ethnic group (www.stats.govt.nz).

[32] Statistics New Zealand definitions are given in Appendix D.
[33] Income data used in the analysis are given in Appendix E.

A potential source of error with the census data is inherent in the nature of the data collection. By relying on a self-declaration of income, answers, and therefore accuracy of the data collected, are ultimately at the discretion of the respondent (Honey and Pool, 1998).

To preserve the anonymity of the data, all statistics are randomly rounded to base three. As a result, "Total" given in the data may differ slightly from the sum of the individual cells contributing to the total.

6.2 Assumptions

A number of assumptions were made before an analysis of repayment times of student loans could be undertaken. Some of these are modified later in the report in order to examine sensitivity of repayment times to these assumptions.

By transparently stating the assumptions made and the possible limitations of the data used, it is hoped that the integrity of the findings are strengthened and that the results may be viewed within the appropriate context. The assumptions are as follows:

(1) Students borrow the same amount in CRCs and living costs regardless of the institution they study at. That is, university students borrow the same amount in CRCs and living costs as students studying at private training establishments, polytechnics, and wananga.[34]

(2) The same amount is borrowed per year and 2002 borrowings figures represent the amount loaned per annum, with no adjustment for inflation. Using data obtained from StudyLink, the total end of study debt is $17,685 for a female, and $20,181 for a male.[35]

[34] The assumption was made because the Ministry of Social Development does not compile data pertaining to living costs and CRCs borrowed by institution type, although information is compiled on course fees borrowed by institution.

[35] Calculation of end of study debt is given in Appendix C.

(3) The first year of full-time employment begins at age 23 after three years of full-time study (the length of a basic business, humanities, or science degree).[36]

(4) Incomes mimic the trend in the Census data, but vary according to changes in the cost of living. For example, the increase in mean income from 23 year old European males to 24 year old European males is 19.20 percent, increasing by a further 13. 18 percent for 25 year olds; the assumption is made that the percentage increase in income from one age bracket to the next does not change over time, except for at the rate of inflation.[37]

(5) The rate of inflation by which incomes increase in order to keep purchasing power constant remains at Treasury's long run forecast of 2.08 percent per annum.

(6) Both mean and median income of graduates is used to estimate repayment times.[38]

(7) The repayment threshold begins at the current level of $15,964, and then increases per annum at Treasury's long run inflation forecast.

(8) The repayment obligation remains at the current level. That is, for every $1 earned over the repayment threshold, 10 cents (ten percent) must be repaid to an outstanding student loan.

(9) The current interest write-off provisions remain unchanged over the life of the loan.

(10) Initially, no voluntary repayments are made over the life of the loan.

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[36] Initially it was to be assumed that the first year of tertiary education began at age 18, and full time employment at age 21. However, census data indicated that the mean income for 21 year olds was extremely low (for all ethnic groups). This is likely to have occurred because the question pertaining to income asked for total income in the last 12 months. The Census was conducted on March 2002 - it is likely that respondents who started full-time employment in January or February after the completion of a course the previous year were included in these figures, despite having been a student for the majority of the period in question. In addition, the gap in mean income from 22 year olds to 23 years was significant (approximately $9,000) for all ethnic groups, suggesting that in the 22 year age group there was also a number of individuals who did not work full-time for the entire year. Furthermore, a large proportion of students take more than three years to complete a degree, and a number of students do something else between school and university. It was therefore decided to use age 23 as the starting point of full-time employment. This may result in a slight overestimation of income earned (if the majority of graduates begin full-time work before they turn 23), and therefore a slight underestimation in the true repayment period.

[37] The mean income for 23 year-old European males from Census 2001 data is $28,209. This increases by 19.20% to $33,624 for 24 year olds, and further increases by 13.18% to $38,056 for 25 year olds.

[38] The earnings profile used is not necessarily accurate – not everyone will earn either of these amounts. Rather, it is intended as a guide to predict repayment estimates.

(11) The individual with the outstanding loan works full-time until the entire loan balance is repaid. That is, no breaks are taken from the workforce for overseas travel, further study, raising a family, et cetera.

(12) Legislative changes that affect student borrowing are inevitable over time. These are almost impossible to account for and will not be included in this research due to difficulty in determining what they will be.

6.3 The Model

A model was created in Excel to estimate loan repayment periods using IF statements to account for the various interest write-offs and other factors affecting repayment of student loans. IF statements are of the following general form: IF(test, value if true, value if false).

For example, Annual repayment obligation = IF(Income over repayment threshold > 0, Income over repayment threshold *0.1, 0)

That is, if income is over $15,964 then the annual repayment obligation is equal to the income over threshold * 10 percent. If income is less than $15,964 the annual repayment obligation is zero.

The other components of the model are as follows:

$Y_n = Y_B * (1 + \pi)^{n-1}$

$Y_R = Y - [\text{Repayment threshold} * (1 + \pi)^{n-1}]$

$R = IF(Y_R > 0, Y_R * 0.1, 0)$

$BI = IF(L_B - R > 0, L_B * \text{Base interest rate}, 0)$

$IA = IF(L_B - R > 0, L_B * \text{Interest adjustment rate}, 0)$

$BI_W = IF(Y < R, BI, 0)$

$PI_W = IF[Y \geq Y_R \text{ and } BI > (50\% * R), BI - (50\% * R), 0]$

$\text{Total interest paid} = BI + IA - BI_W - PI_W$

$\text{Loan at end of year} = L_B - R - \text{Voluntary repayments} - \text{Total interest paid}$

Where:

n	=	Year
Y	=	Annual Income
Y_B	=	Income at beginning of year
Y_R	=	Income over repayment threshold
π	=	Inflation rate
R	=	Annual repayment obligation
BI	=	Base interest charged
L_B	=	Loan at beginning of year
IA	=	Interest adjustment charged
BI_W	=	Base interest write-off
PI_W	=	Partial interest write-off

6.4 Scenario One: Current Interest Rate and Borrowing, No Voluntary Repayments

For the first scenario, the current interest rate of 7.0 percent is modelled, comprised of a base interest rate of 4.2 percent and an interest adjustment rate of 2.8 percent. 2002 borrowing figures and income data from the 2001 census are used. Table 6.1 gives the repayment period calculated.

Table 6.1: Repayment Period for 2002 Borrowing, 2001 Census Mean Income, No Voluntary Repayments

	Repayment Period (Years)			Total Interest Paid[39]	
Ethnicity	**Male**	**Female**	**Difference[40]**	**Male**	**Female**
European	10.07	11.17	1.10	$ 10,405	$ 9,911
Maori	11.91	13.76	1.85	$ 12,303	$ 11,657
Pacific Island	13.90	15.14	1.24	$ 13,885	$ 13,089
Asian	12.77	16.39	3.62	$ 12,192	$ 13,387
Other	14.44	18.22	3.78	$ 13,936	$ 15,920
Not Elsewhere Included	11.49	11.51	0.02	$ 11,499	$ 9,486
Total	**10.38**	**11.65**	**1.27**	**$ 10,620**	**$ 10,163**

[39] Total interest paid is given in 2002 constant dollar terms. Although not technically accurate (discounting is required to calculate present value), interest paid is commonly used in debate to illustrate the impact the period of outstanding debt has on the total amount repaid. Total interest paid is calculated as: base interest charged + interest adjustment charged – interest write-offs.

[40] Equal to repayment period (females) – repayment period (males).

The repayment period is shortest for the European ethnic group, and is significantly longer for respondents of Pacific Island and 'Other' ethnicities due to lower annual incomes. The effect of a longer repayment period by ethnicity is more pronounced for females, as shown by the difference column. In addition, repayment differences by ethnicity are generally greater than differences by gender.

Despite the smaller initial debt held by females, the repayment period is longer than males because incomes are lower on average. However, total interest payments are lower for females (except for Asian and 'Other' ethnicities), due to the lower initial loan size.

The results follow a similar pattern to those obtained by the Ministry of Education and NZUSA, in that repayment periods are shorter for those of European ethnicity, and longer for females. The total repayment period is higher than those calculated by the Ministry of Education, but significantly lower than those obtained by NZUSA.

Figure 6.1 graphs the loan balance over the period in which there is an outstanding debt (for all ethnicities). After 7.3 years the loan balance of females surpasses that of males.

Figure 6.1: Loan Balance Since Course End (Mean Income and Mean Loan)

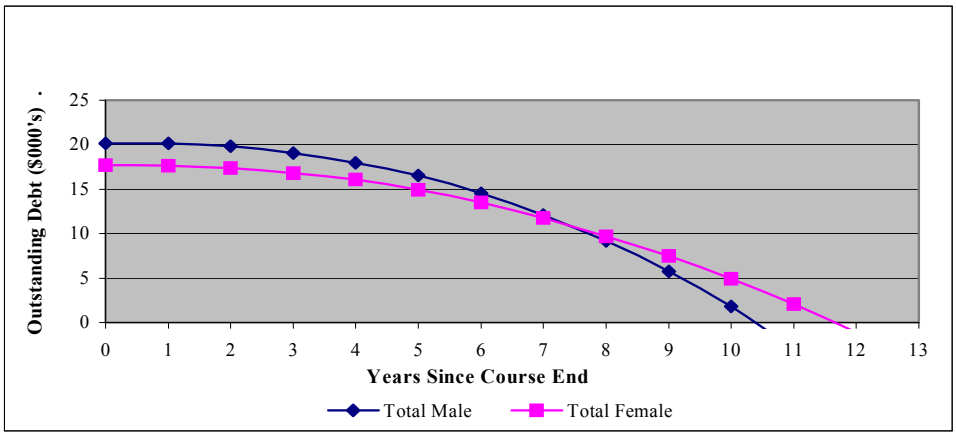


Table 6.2 gives results when the same scenario is run using median, as opposed to mean, income of graduates.

Table 6.2: Repayment Period for 2002 Borrowing, 2001 Census Median Income, No Voluntary Repayments

	Repayment Period (Years)			Total Interest Paid	
Ethnicity	**Male**	**Female**	**Difference**	**Male**	**Female**
European	10.92	11.76	0.84	$ 11,044	$ 10,084
Maori	13.43	13.98	0.55	$ 13,834	$ 11,509
Pacific Island	15.96	15.08	-0.88	$ 15,831	$ 12,792
Asian	15.61	19.39	3.78	$ 14,462	$ 15,424
Other	17.34	19.96	2.62	$ 17,068	$ 16,481
Not Elsewhere Included	13.30	13.85	0.55	$ 12,686	$ 10,815
Total	**11.40**	**12.45**	**1.05**	**$ 11,599**	**$ 10,553**

Mean incomes for all ethnicities (except Pacific Island females) are higher than the median income in the corresponding group, probably due to a small number of individuals earning significantly more than the majority of respondents. As a result, repayment times are slightly longer, although the same pattern in terms of repayment time by ethnic group and gender is present.[41]

Except for Asian ethnicity, gender differences in repayment period are smaller when median income is used.

The repayment period of Pacific Island females is shorter than for males of the same ethnic group because of similar median incomes; because females have a smaller initial debt the outstanding loan is repaid in a shorter period of time.

6.5 Scenario Two: Current Interest Rate and Borrowing, Voluntary Repayments

The second scenario is the same as scenario one, with the addition of voluntary repayments. The current interest rate of 7.0 percent is modelled, comprised of a base interest rate of 4.2 percent and an interest adjustment rate of 2.8 percent. 2002 borrowing figures and income data from the 2001 census is used.

[41] The one exception is Pacific Island females - median income was slightly higher than mean income for the group, resulting in a shorter repayment period when median income was used.

Individual level data on voluntary repayments made per annum to existing student loans was not available.[42] As a result, an "average" repayment period for university students' loans could not be calculated. Instead, various values of voluntary repayments are inputted and the corresponding repayment period calculated. Table 6.3 shows the effect that making voluntary repayments has on the repayment period.

Table 6.3: Repayment Period for 2002 Borrowing, 2001 Census Mean Income, Fixed Voluntary Repayments Per Year

Voluntary Repayments Per Annum	Repayment Period (Years)			Total Interest Paid	
	Male	Female	Difference	Male	Female
$ 0	10.38	11.65	1.27	$ 10,620	$ 10,163
$ 500	8.88	9.42	0.54	$ 8,445	$ 7,807
$ 1,000	7.73	7.85	0.12	$ 7,075	$ 6,357
$ 2,000	6.04	5.81	-0.23	$ 5,406	$ 4,541
$ 3,000	4.87	4.54	-0.33	$ 4,302	$ 3,551
$ 4,000	4.03	3.70	-0.33	$ 3,536	$ 2,920
$ 5,000	3.41	3.11	-0.30	$ 3,096	$ 2,428

Introducing voluntary repayments to the model significantly lowers the repayment period and interest paid over the course of the loan. The effect is initially more pronounced for females, as increases in voluntary repayments (of up to $2,000) lower the repayment period and total interest cost to a greater extent than the same payment does for males.

The period of outstanding debt is shortest for females when annual voluntary repayments of $2,000 and above are made, although for all values of voluntary repayments, the total interest paid is smaller than males. This is due to a smaller initial debt. Figure 6.2 shows the effect that voluntary repayments have on the outstanding loan balance for males (all ethnic groups).

[42] Data on total voluntary repayments made per annum are available. However, information on the proportion of borrowers making voluntary repayments and the average amount voluntarily repaid per annum was unable to be obtained.

Figure 6.2: Loan Balance Since Course End (Male, Mean Income and Loan, Fixed Voluntary Repayments Per Annum)

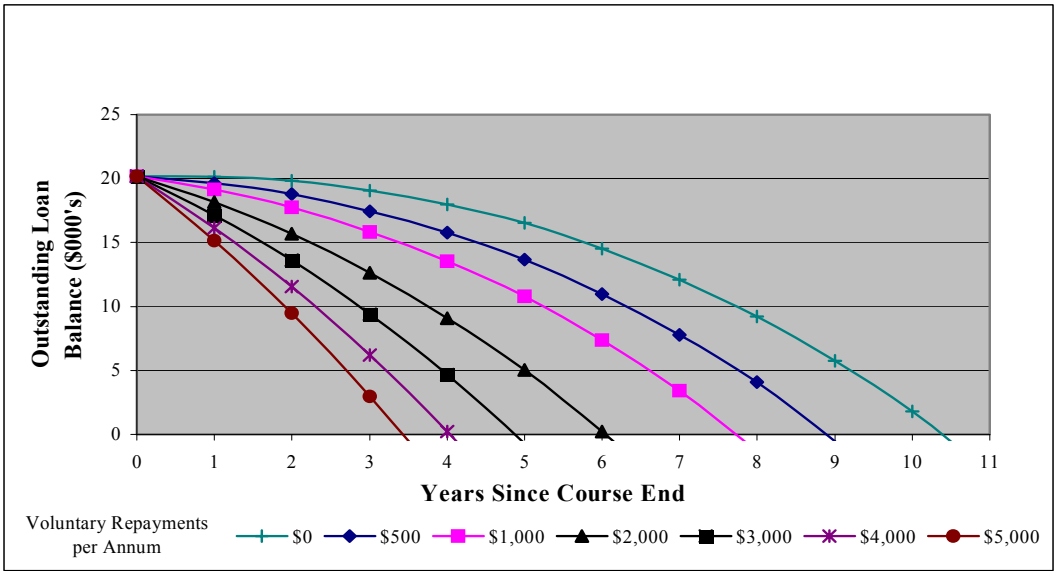


Table 6.4 shows the effect when voluntary repayments are made as a proportion of income, as opposed to a fixed annual amount.

Table 6.4: Repayment Period for 2002 Borrowing, 2001 Census Mean Income, Voluntary Repayments as a Proportion of Annual Income

Voluntary Repayments Per Year (% of Annual Income)	Repayment Period (Years)			Total Interest Paid	
	Male	Female	Difference	Male	Female
0	10.38	11.65	1.27	$ 10,620	$ 10,163
1.0	9.15	9.87	0.72	$ 9,116	$ 8,300
2.0	8.17	8.62	0.45	$ 7,950	$ 7,138
3.0	7.37	7.64	0.27	$ 7,001	$ 6,207
4.0	6.73	6.93	0.20	$ 6,424	$ 5,679
5.0	6.19	6.29	0.10	$ 5,770	$ 5,053
6.0	5.73	5.78	-0.05	$ 5,382	$ 4,694
8.0	5.01	4.97	-0.04	$ 4,602	$ 3,987
10.0	4.40	4.34	-0.06	$ 4,114	$ 3,388
15.0	3.40	3.31	-0.09	$ 3,236	$ 2,743

As the proportion of annual income made in voluntary repayments increases, the difference in repayment time between males and females becomes smaller. The period of outstanding debt is shorter for females when six percent or more of income is voluntarily repaid to an outstanding student loan. Figure 6.3 graphs the effect of changes in the percentage of income made in voluntary repayments on the remaining loan balance for males (all ethnic groups).

Figure 6.3: Loan Balance Since Course End (Male, Mean Income and Loan, Voluntary Repayments as a Proportion of Income)

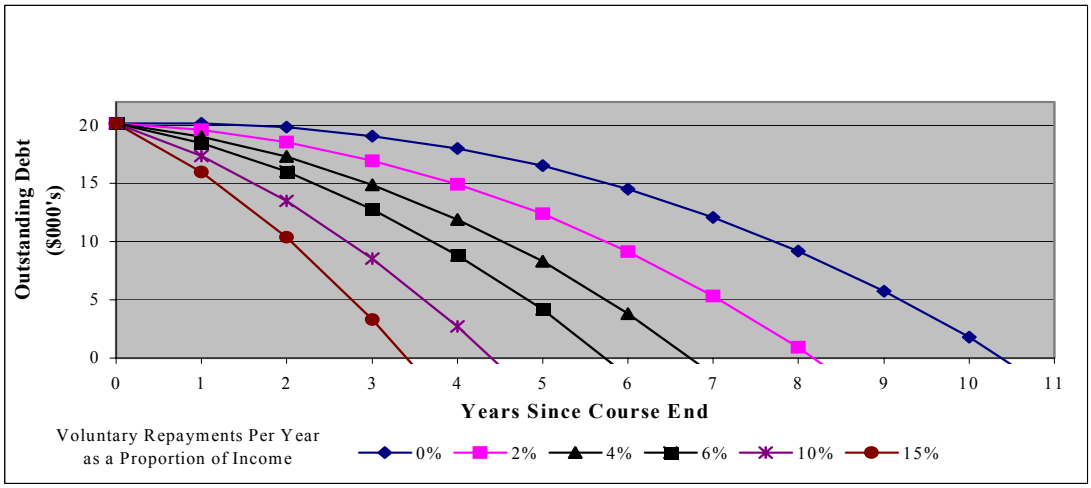


Table 6.5 shows the effect when the same scenario is run using median, as opposed to mean, income of graduates.

Table 6.5: Repayment Period for 2002 Borrowing, 2001 Census Median Income, Fixed Voluntary Repayments Per Year

Voluntary Repayments Per Annum	Repayment Period (Years)			Total Interest Paid	
	Male	Female	Difference	Male	Female
$ 0	11.40	12.45	1.05	$ 11,044	$ 10,084
$ 500	9.60	9.64	0.04	$ 9,138	$ 7,837
$ 1,000	8.21	7.93	-0.28	$ 7,584	$ 6,365
$ 2,000	6.21	5.77	-0.44	$ 5,521	$ 4,554
$ 3,000	4.95	4.49	-0.46	$ 4,385	$ 3,580
$ 4,000	4.07	3.65	-0.42	$ 3,605	$ 2,970
$ 5,000	3.43	3.07	-0.36	$ 3,165	$ 2,498

Using median income again results in a slightly longer repayment period and higher interest costs. Again, total interest costs are lower for females for all values of voluntary repayments, despite the lower incomes earned. Table 6.6 shows the effect when voluntary repayments are made as a proportion of median income.

Table 6.6: Repayment Period for 2002 Borrowing, 2001 Census Median Income, Voluntary Repayments as a Proportion of Annual Income

Voluntary Repayments Per Year (% of Annual Income)	Repayment Period (Years)			Total Interest Paid	
	Male	Female	Difference	Male	Female
0	11.40	12.45	1.05	$ 11,599	$ 10,553
1.0	9.94	10.26	0.32	$ 9,814	$ 8,576
2.0	8.73	8.81	0.08	$ 8,248	$ 7,306
3.0	7.84	7.74	-0.10	$ 7,450	$ 6,364
4.0	7.09	6.93	-0.16	$ 6,621	$ 5,629
5.0	6.44	6.25	-0.19	$ 5,889	$ 5,006
6.0	5.94	5.71	-0.23	$ 5,502	$ 4,635
8.0	5.13	4.86	-0.27	$ 4,670	$ 3,940
10.0	4.48	4.23	-0.25	$ 4,178	$ 3,373
15.0	3.42	3.18	-0.24	$ 3,266	$ 2,604

6.6 Scenario Three: Current Borrowing, Change in Nominal Interest Rate

For the third scenario, the interest adjustment rate is equal to the long run inflation rate forecast of 2.08 percent. 2002 borrowing figures and mean income data from the 2001 census are used. Table 6.7 shows the effect of changes in the base interest rate (and hence changes in the total nominal interest rate), on the repayment period.

Table 6.7: Repayment Period for 2002 Borrowing, 2001 Census Mean Income, Change in Nominal Interest Rate, No Voluntary Repayments

Base Interest Rate (%)	Nominal Interest Rate (%)	Repayment Period (Years)			Total Interest Paid	
		Male	Female	Difference	Male	Female
-2.08	0	7.90	8.38	0.48	$ 0	$ 0
-1.08	1.0	8.17	8.72	0.55	$ 1,091	$ 980
-0.08	2.0	8.46	9.10	0.64	$ 2,283	$ 2,110
0.92	3.0	8.78	9.49	0.71	$ 3,580	$ 3,338
1.92	4.0	9.16	9.93	0.77	$ 5,175	$ 4,692
2.92	5.0	9.54	10.46	0.92	$ 6,829	$ 6,402
3.92	6.0	9.89	10.95	1.06	$ 8,341	$ 7,951
4.92	7.0	10.28	11.50	1.22	$ 10,148	$ 9,691
5.92	8.0	10.58	11.94	1.36	$ 11,586	$ 11,054
6.92	9.0	10.83	12.42	1.59	$ 12,766	$ 12,535
7.92	10.0	11.13	12.78	1.65	$ 14,221	$ 13,640
8.92	11.0	11.34	13.19	1.85	$ 15,216	$ 14,906
9.92	12.0	11.52	13.46	1.94	$ 16,082	$ 15,772

As can be expected, changes in the nominal interest rate have the effect of lengthening the repayment period and the total interest paid. However, every percentage point increase in the nominal rate results in an increase in repayment time of no more than six months.

Increases in the nominal interest rate adversely affect those on lower incomes (women) more than those on higher incomes (men). Repayment time is disproportionately increased for females when the interest rate is increased, as illustrated by the repayment difference column. The higher the interest rate, the greater the difference between repayment times for males and females.

Figure 6.4 graphs the effect that changes in the nominal interest rate have on the repayment period for males (all ethnic groups).

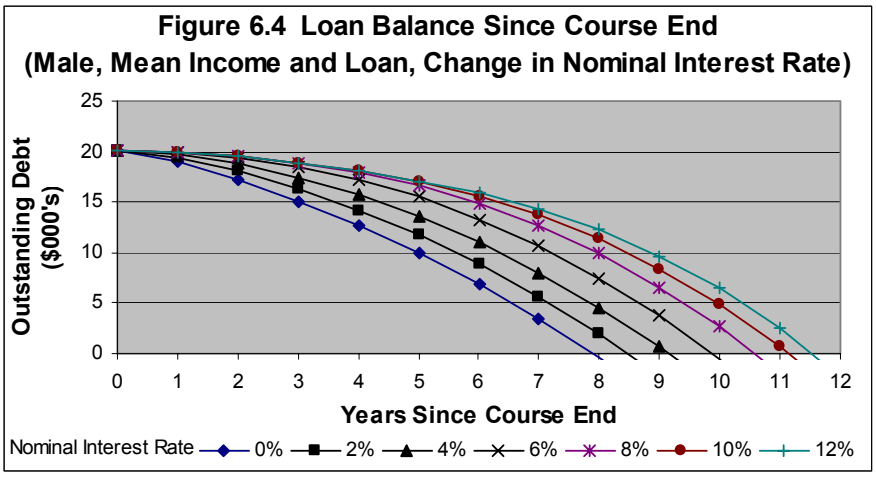


Table 6.8 shows the difference in repayment time between males and females by ethnicity, when the base interest rate (and therefore the nominal interest rate) is varied. The interest adjustment rate is equal to 2.08 percent.

Table 6.8: Difference in Repayment Period Between Males and Females by Ethnicity, 2002 Borrowing, 2001 Census Mean Income

	Difference in Repayment Time (Years)[43]						
Nominal Interest Rate (%)	**European**	**Maori**	**Pacific Island**	**Asian**	**Other**	**Not Elsewhere Included**	**Total**
0	0.45	0.30	0.47	1.23	1.63	-0.60	0.48
2.0	0.57	0.44	0.30	1.47	1.91	-0.53	0.64
4.0	0.74	0.77	0.51	2.03	2.23	-0.57	0.77
6.0	0.95	1.46	0.68	2.90	2.77	-0.14	1.06
8.0	1.16	2.11	1.28	3.93	3.48	0.57	1.36
10.0	1.46	2.69	1.43	4.37	3.34	1.33	1.65
12.0	1.56	3.14	1.14	4.38	3.28	1.53	1.94

Differences in repayment time between males and females tend to become larger as the nominal interest rate increases. Furthermore, differences by ethnicity also become larger as the interest rate rises.

[43] Difference = Female repayment period - Male repayment period

6.7 Scenario Four: Current Borrowing, Change in End of Course Loan Debt

For the fourth scenario, the interest adjustment rate is equal to the long run inflation rate forecast of 2.08 percent. The base interest rate is 4.92 percent, giving a total nominal interest rate of 7.0 percent. 2002 borrowing figures and mean income data from the 2001 census is used. Table 6.9 shows the effect that changes in the original loan debt have on the repayment period when no voluntary repayments are made.

Table 6.9: Repayment Period for 2002 Borrowing, 2001 Census Mean Income, Change in End of Course Debt, No Voluntary Repayments

End of Course Debt	Repayment Period (Years)			Total Interest Paid	
	Male	Female	Difference	Male	Female
$ 5,000	3.31	3.77	0.46	$ 831	$ 860
$ 10,000	5.82	6.84	1.02	$ 2,784	$ 3,260
$ 15,000	8.16	9.88	1.72	$ 6,203	$ 7,239
$ 20,000	8.39	13.34	4.95	$ 10,459	$ 13,075
$ 25,000	12.43	17.44	5.01	$ 15,782	$ 20,979
$ 30,000	14.64	22.70	8.06	$ 22,136	$ 32,531
$ 35,000	16.94	30.23	13.29	$ 29,552	$ 51,064

A factor that becomes more evident as loan size increases is the considerably longer repayment period, and total interest costs incurred by female graduates. Again, this results because of lower average income than males.

When the end of course debt is $35,000, similar (though slightly longer), repayment periods to those calculated by NZUSA are obtained. The NZUSA model estimates average repayment to be 28 years for females and 15 years for males.

6.8 Scenario Five: Current Interest Rate and Borrowing, Change in Initial Income

For the fifth scenario, the current interest rate of 7.0 percent is modelled, comprised of a base interest rate of 4.2 percent and an interest adjustment rate of 2.8 percent. 2002 borrowing figures are used but initial annual income is varied. Table 6.10 shows the effect on the loan repayment period, and the total interest costs.

Table 6.10: Repayment Period for 2002 Borrowing, Current Interest Rate, Change in End of Course Debt, No Voluntary Repayments

Initial Annual Income	Repayment Period (Years)			Total Interest Paid	
	Male	Female	Difference	Male	Female
$ 20,000	16.91	22.51	5.60	$ 17,013	$ 19,141
$ 25,000	12.14	13.48	1.34	$ 12,397	$ 11,734
$ 30,000	9.47	9.84	0.37	$ 9,542	$ 8,479
$ 35,000	7.75	7.78	0.03	$ 7,616	$ 6,531
$ 40,000	6.56	6.48	-0.08	$ 6,365	$ 5,400
$ 45,000	5.66	5.53	-0.13	$ 5,388	$ 4,548
$ 50,000	4.97	4.81	-0.16	$ 4,516	$ 3,816

As would be expected, annual income has a significant impact on the time and cost involved in repaying an outstanding loan. This impact is more noticeable at lower income levels.

6.9 Summary

The calculated repayment periods of student loans are, on average, longer than the Ministry of Education results, and considerably shorter than those obtained by NZUSA. A similar pattern to the TESLA model and NZUSA debt calculator emerges in terms of repayment by ethnic group and gender. Repayment periods are shortest for those of European ethnicity, and longer for Pacific Island, Maori, and Asian individuals. Also, on average, females take longer to repay their loan than males, due to lower overall incomes. In spite of this, total interest costs are often lower for women, due to smaller amounts borrowed. The analysis has also showed that gender differences in repayment time are smaller than ethnic differences.

When voluntary repayments are introduced to the model, the period of debt repayment decreases significantly – the effect being more pronounced for those on lower incomes. The effect of changing the nominal interest rate is to lengthen the loan repayment period by less than six months for every percentage point increase in the interest rate.

Finally, initial income and loan size have a substantial impact on the repayment period and total interest costs.

CHAPTER 7 HIGHER EDUCATION: COSTS AND RETURNS TO THE TAXPAYER

The current policy debate on tertiary education tends to focus on the costs and debt incurred by students, as opposed to the extent to which the taxpayer subsidises higher education (McLaughlin, 2003). Coupled with the media's inclination to present an alarmist view, and political discussions that reinforce this perspective, many members of the public may have a misleading view of tertiary affordability (McLaughlin, 2003). This chapter outlines the level of taxpayer subsidisation of tertiary education in New Zealand then discusses the potential returns from this investment.

7.1 Trends in Participation

The demand for higher education in New Zealand has increased steadily over the past two decades, probably partly due to the market liberalisation that has occurred since the mid 1980s, and an increase in the need for new skills (Maani, 1997). The increase in demand is illustrated by the large increases in student numbers - table 7.1 shows enrolments in tertiary institutions from 1993 – 2002.

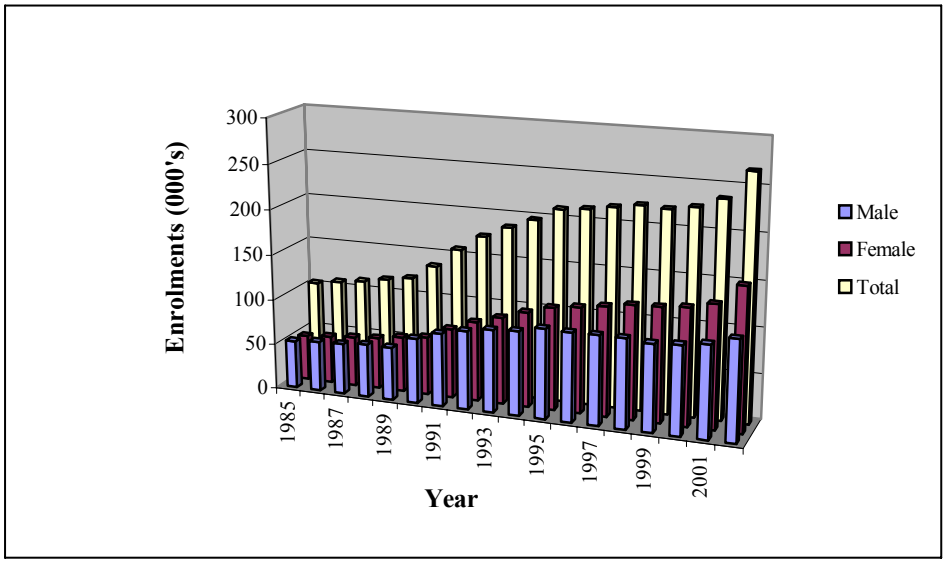
Table 7.1: Formal Enrolments at Tertiary Education Providers, 31 July 1993 – 2002

Year	Males	Females	Total
1993	90,856	95,406	186,262
1994	92,623	104,358	196,981
1995	98,347	112,588	210,935
1996	97,491	116,144	213,635
1997	98,000	120,006	218,006
1998	97,855	124,462	222,317
1999	95,280	125,429	220,709
2000	97,206	127,974	225,180
2001	101,182	134,613	235,795
2002	109,915	156,586	266,501

Source: Ministry of Education Tertiary Education Statistics

Figure 7.1 illustrates the trend in participation numbers at tertiary institutions from 1985. The increase is dramatic – tertiary enrolments rose by almost 160 percent from 102,673 in 1985 to 266,501 in 2002. A large proportion of this growth was due to increased participation by women; in 2002 there were 42 percent more women enrolled in tertiary education than there were men.

Figure 7.1: Number of Tertiary Students 1985 - 2002



Source: Ministry of Education Tertiary Education Statistics

Table 7.2 shows how the increased demand for tertiary education resulted, in part, because of a significant rise in the proportion of 18 – 24 year olds participating in tertiary education.

Table 7.2: Estimated Proportion of 18 – 24 Year Olds Enrolled in Tertiary Education, July 1990, 1995 - 2000

Year	1990	1995	1996	1997	1998	1999	2000
% of 18 – 24 Year Olds in Tertiary Education	23.2	31.4	31.7	32.5	33.4	33.4	33.7

Source: Ministry of Education

Of the five main components of tertiary enrolments (universities, polytechnics, colleges of education, wananga, and private training establishments), university enrolments dominate. Table 7.3 gives university enrolments from 1993 to 2002. Some of the increase in university numbers is likely to be linked to Wellington Polytechnic becoming part of Massey University in July 1999, and Auckland Institute of Technology gaining university status in 2000.

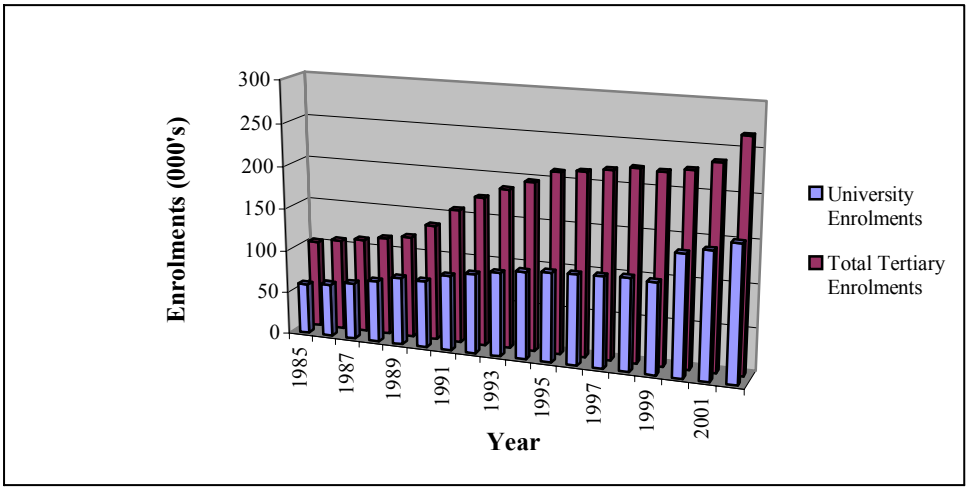
Table 7.3: University Enrolments, 1993 – 2002

Year	Total University Enrolments	Total Enrolments at Tertiary Institutions	University Enrolments as a Proportion of Total Tertiary Enrolments (%)
1993	97,835	186,262	52.53
1994	102,058	196,981	51.81
1995	104,389	210,935	49.49
1996	105,544	213,635	49.40
1997	106,377	218,006	48.80
1998	107,937	222,317	48.55
1999	105,996	220,709	48.03
2000	141,153	225,180	62.68
2001	147,426	235,795	62.52
2002	158,140	266,501	59.34

Source: Ministry of Education

As figure 7.2 illustrates, university enrolments make up a large proportion of total student numbers in tertiary education. Because tuition subsidies are typically higher for university students, the large increase in enrolments (up 167 percent from 1985 to 2002) has seen a substantial increase in funding for these providers in absolute terms. Combined with increases in numbers at other tertiary institutions, this has led to significant growth in total government spending on tertiary education.

Figure 7.2: University and Total Tertiary Enrolments, 1985 - 2002



Source: Ministry of Education

7.2 Government Expenditure on Tertiary Education

The main mechanisms government uses to provide financial assistance to tertiary students are tuition subsidies, student loans, and student allowances. In this section the various methods of funding are outlined and total government expenditure on tertiary education is given.

7.2.1 Tuition Subsidies

In 1991 the Equivalent Full-Time Student (EFTS) funding system was introduced as a method of counting tertiary student numbers, then allocating tuition subsidies accordingly to be used for teaching and accompanying research. The basis of the EFTS system is that a student taking a normal year's full-time study equals 1.0 EFTS unit and courses taken by part-time students are a fraction of one EFTS unit. The 2002 actual subsidy per EFTS is given in table 7.4. EFTS funding is higher for postgraduate courses, and lower for non-degree courses. The Ministry of Education has estimated that in 2003, on average, tuition subsidies will equate to $7,800 per EFTS.

Table 7.4: Tuition Subsidy Rates per EFTS (GST inclusive)[44]

Tuition EFTS Subsidy Category	Undergraduate Degree
Arts; Social Sciences; Business; Accountancy; General, including Community Education; Law	$ 5,481
Science; Computing; Nursing; Trades; Fine Arts; Music	$ 8,504
Engineering; Agriculture; Architecture; Audiology	$ 10,249
Dentistry; Veterinary Science; Medicine	$ 19,116
Specialist Large Animal Science	$ 15,995
Teaching	$ 7,735

Source: Ministry of Education

Despite nominal government spending on tertiary education increasing over the past decade, expenditure per EFTS decreased steadily from 1992 onwards, although the trend reversed from 2000 to 2002, with funding increasing 5.1 percent in nominal terms over this period. Table 7.5 gives average funding per EFTS in 1991, and from 1995 – 2002.

Table 7.5: Average Funding per EFTS 1991, 1995 - 2002 (Nominal $)

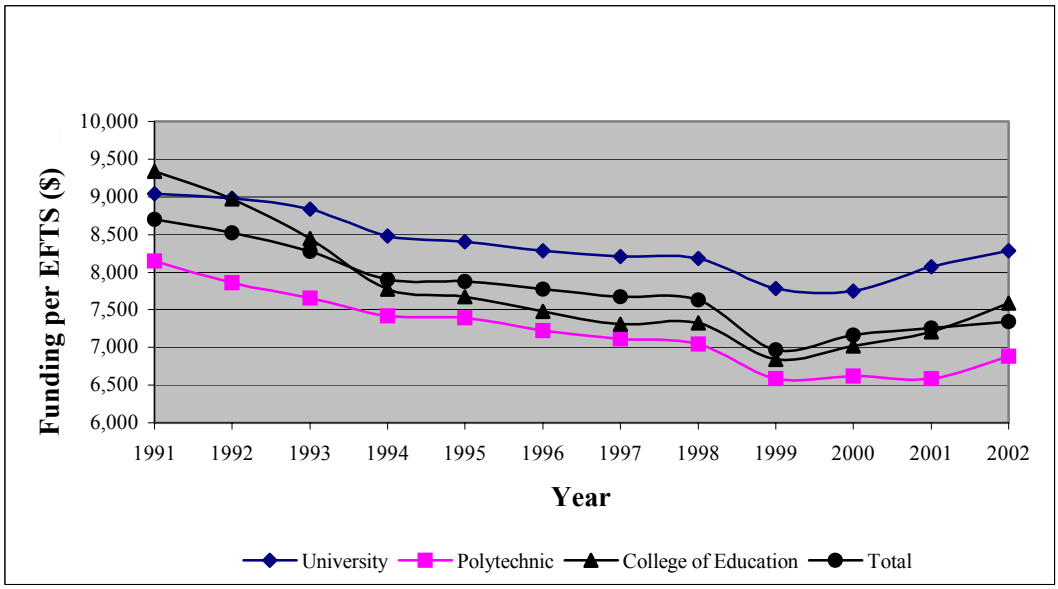
Tertiary Institution	1991	1995	1996	1997	1998	1999	2000	2001	2002
University	9,043	8,406	8,286	8,206	8,181	7,781	7,750	8,073	8,288
Polytechnic	8,150	7,389	7,224	7,116	7,042	6,587	6,624	6,585	6,886
College of Education	9,336	7,673	7,480	7,312	7,322	6,839	7,020	7,210	7,586
Wananga	-	7,187	6,465	6,728	6,743	6,242	5,681	5,263	5,334
PTE	-	2,498	3,555	3,297	3,214	1,829	5,812	5,847	6,174
Other Providers	-	-	-	-	-	-	5,435	11,255	13,078
Total	**8,704**	**7,879**	**7,775**	**7,672**	**7,628**	**6,966**	**7,165**	**7,253**	**7,340**

Source: Ministry of Education

[44] Funding add-ons are available for certain qualifications. A full list of these and other EFTS funding can be obtained from: www.minedu.govt.nz/index.cfm?layout=document&documentid=7193&data=l#P330_9044

Figure 7.3 graphs average funding per EFTS for universities, polytechnics, and colleges of education, as well as total EFTS funding across all tertiary institutions. Expenditure is in nominal dollars.

Figure 7.3: Average Funding per EFTS, 1991 - 2002



Source: Ministry of Education

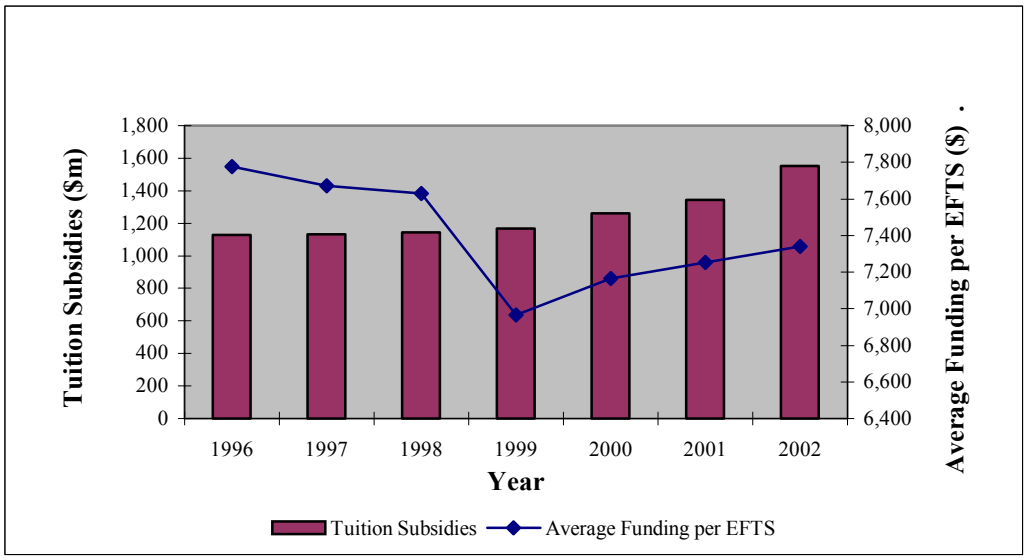
Table 7.6 gives total expenditure in the form of tuition subsidies from 1997 – 2003 in nominal dollars. Figure 7.4 graphs this data, along with average government funding per EFTS. Expenditure is in nominal dollars.

Table 7.6 Total Tuition Subsidies for Tertiary Students, Year Ending 31 March 1997 – 2003

Year	Tuition Subsidies ($m)
1997	1,130
1998	1,144
1999	1,167
2000	1,262
2001	1,344
2002	1,551
2003	1,754
Total	**$9,352m**

Source: Ministry of Education

Figure 7.4: Total Government Funded EFTS and Average Funding per EFTS



Source: Ministry of Education

Prior to 2000, a research component was included in EFTS funding allocated to tertiary institutions. From 2000 onwards, this component was removed; instead, research top-ups were given (in addition to EFTS funding) for students enrolled in degree level courses. In 2002 the total value of the research top-ups was $115.3 million, compared with $114.3 million in 2001, and $113.8 million in 2000. The change in allocation of funds makes it difficult to directly compare changes in expenditure per EFTS, as doing so understates the decline in subsidisation for students (or overstates the subsidisation of the student before the research component was removed) (S. Birks, personal communication, 15th December, 2003). The problem is further compounded by teaching and research being highly integrated.

From 1 January 2004, a new integrated funding framework will replace the EFTS system. A student component will be introduced as the government's contribution to the cost of student participation in tertiary education (funding for teaching and learning). Funding of research for tertiary education providers (particularly universities) will no longer be allocated as part of overall tuition funding on the basis of student enrolments. Instead, a Performance Based Research Fund (PBRF) will allocate funding on the basis of a number of indicators, including quantity and quality of research.

7.2.2 Student Loans

Borrowers meet part of the costs of the loan scheme through the one-off $50 administration fee charged on each loan, and by meeting a share of the government's cost of capital through interest payments. For the year ending 30 June 2003 over 150,000 individuals borrowed under the scheme, resulting in almost $7.6 million being charged by the MSD in administration fees alone. For the same period a further $393.1 million was charged by the MSD and IRD in interest payments – representing an average interest charge of $1,007 for the 390,027 borrowers with an existing student loan. The Crown meets additional costs of the loan scheme, such as implementing new policies, improving service delivery, and meeting fluctuations in uptake and transactions.

A Doubtful Debt Provision (DDP) is in place to cover capital write-offs due to death, small balance loans, and bankruptcy. When the scheme was introduced in 1992 the provision was set at 15 percent, this decreased to ten percent from 1996 - 2001 and was revised again in 2002 to 11.4 percent. For loans drawn out in 2002, the DDP for capital write-offs equated to $707 per student.

A further DDP is in place to cover the various interest write-offs that apply under the scheme. Because many borrowers are eligible for write-offs, a lot do not face the full rate of interest of seven percent. The IRD has estimated the effective interest rate charged to be 3.5 percent for 2002/03, representing the average rate charged per borrower – calculated as total net interest as a proportion of total debt. The DDP in place to cover interest write-offs is currently set at 46.5 percent per annum - the proportion of interest accrued during 2003 that the Ministry of Education estimates will be written off – a total of $469 per student.

As at 30 June 2003, the total DDP set aside for all existing student loans stood at $723.8 million (or $1,856 per borrower), up from $637 million the previous year. There is no provision in place for individuals who do not meet their repayment obligations; instead, the debt accumulates until the individual dies, at which point the debt is written off.

For the year ended 30 June 2003, $438 million in student loan repayments (both compulsory and voluntary) was received, although a net student loan cash outflow still resulted to the tune of $521.5 million (down from $547.2 million for the year ended 30 June 2002).

As at 30 June 2003, the student loan scheme is listed as an asset on the government's books at $5.370 billion (net of the DDP of $723.8 million) – an average student loan of $13,679.

In November 2003 the Ministry of Education TESLA model forecast student loan debt levels to be $10,650 billion, $13,500 billion, and $15,700 billion for the years ending 31 March 2010, 2015, and 2020 respectively. The model has not been run to determine what this means in terms of average loan and repayment period on a per student basis (T. Wake, personal communication, 22nd December, 2003).

Table 7.7 gives government support in the form of student loans for students enrolled in higher education from 1997 – 2003. Expenditure is in nominal dollars.

Table 7.7: Expenditure on Student Loans for Tertiary Students, Year Ending 31 March 1997 – 2003

Year	Student Loans ($m)
1997	542
1998	657
1999	624
2000	701
2001	873
2002	934
2003	952
Total	**$5,283m**

Source: Ministry of Education

7.2.3 Student Allowances

Student allowances were introduced in 1989 to provide financial assistance to eligible tertiary students. Currently, allowances are available to single students under 25 whose parents earn a combined income of less than $45,760 before tax (if the student lives at home) or $50,752 before tax (if the student lives away from home). The thresholds are revised annually and change on 31 March each year. Furthermore, students under 25 who are considered to be independent from their parents; or cannot reasonably be expected to rely on their parents; or are (or have been) married; and students 25 and over on a low income are eligible for an allowance. In 2002, 39 percent of New Zealand full-time students received a student allowance.

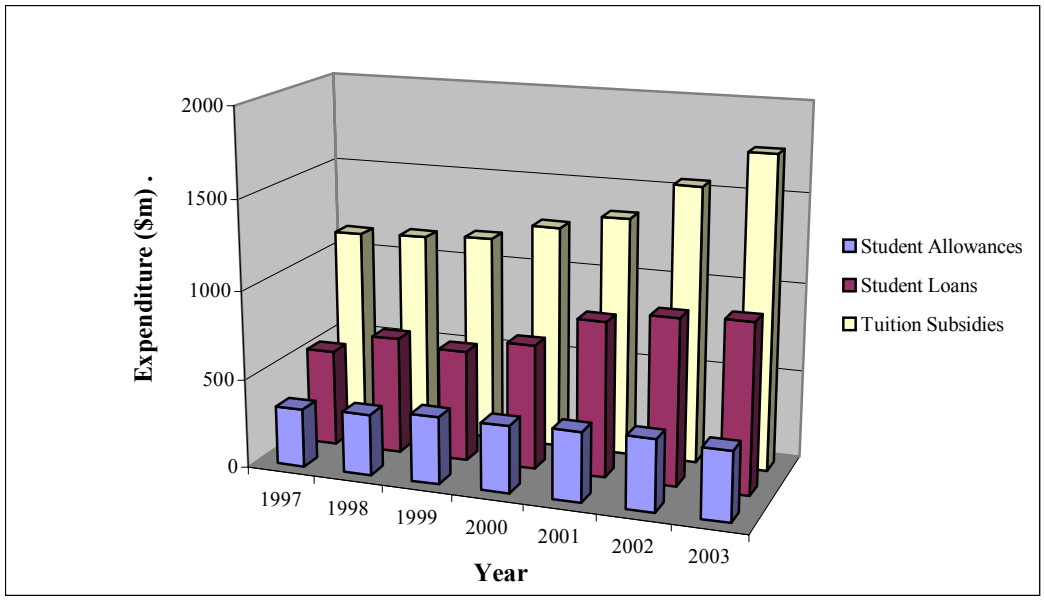
Since the introduction in 1989, expenditure on student allowances has increased considerably. Much of the increase was due to greater participation in tertiary education, with consequent increases in the number of eligible students. Table 7.8 shows government expenditure on student allowances, while figure 7.5 graphs government support for tertiary students in the form of loans, allowances, and tuition subsidies from 1997 – 2003. All figures are in nominal dollars.

Table 7.8: Government Expenditure on Student Allowances, Year Ending 31 March 1997 – 2003

Year	Student Allowances ($m)
1997	327
1998	344
1999	378
2000	376
2001	391
2002	401
2003	387
Total	**$2,604m**

Source: Ministry of Education

Figure 7.5: Government Expenditure on Tertiary Education, 1997 - 2003



Source: Ministry of Education

7.2.4 Further Expenditure

Government funding of tertiary education is also provided through the Training Incentive Allowance for beneficiaries, the Unemployment Student Hardship benefit, Prime Minister's scholarships, tertiary scholarships for Maori and Pacific Island students, and various other community education programmes.

Further tertiary education related expenditure includes funding for the Ministry of Education for policy advice; providing information to consumers and providers of tertiary education to address information gaps; and administration of tertiary resourcing. Government funding is also provided to the New Zealand Qualifications Authority (NZQA), Career Services, and Skill New Zealand for the provision of tertiary information and advisory services; NZQA for the development and maintenance of the National Qualifications Framework; and funding for the purchase and delivery of training programmes.

7.2.5 Total Government Expenditure on Tertiary Education

Table 7.9 gives total expenditure on tertiary education for the year ending 31 March 1999 – 2002 (estimated). Comparisons of expenditure prior to the year ending June 1999 are difficult, as funding related to the Ministry of Education was reported within a broader class (funding for policy advice for primary, secondary, and tertiary education was grouped as one category). All figures are in nominal dollars.

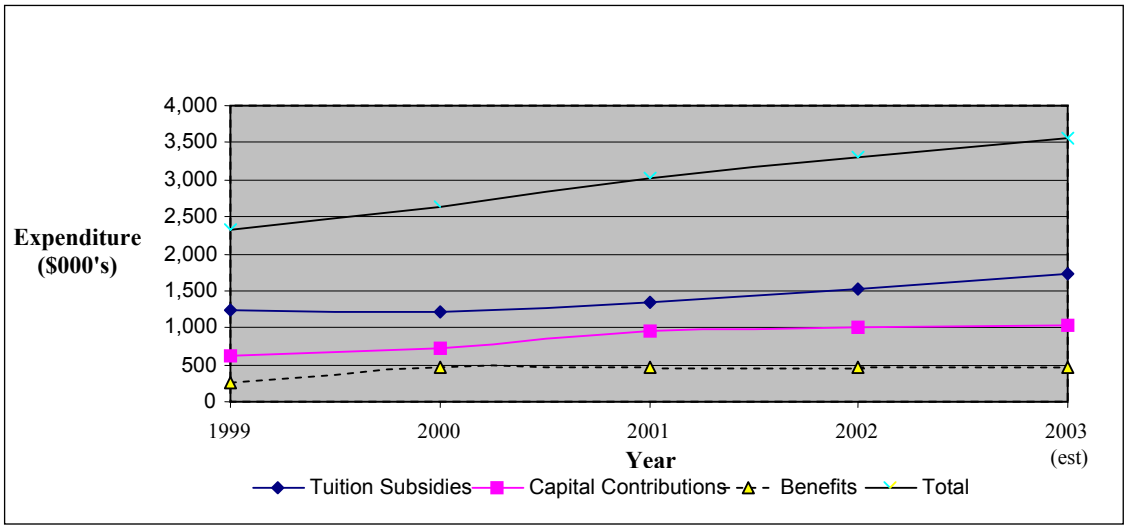
Table 7.9: Government Appropriations for Tertiary Education, Fiscal Years 1998/1999 – 2002/2003 (Estimate)

	1998/1999		1999/2000		2000/2001		2001/2002		2002/2003 Estimate	
	($000's)	% of total	($000's)	% of total	($000's)	% of total	($000's)	% of total	($000's)	% of total
Tuition Subsidies	1,233,431	45.5	1,202,696	46.1	1,346,557	44.5	1,535,213	46.6	1,717,669	48.2
Capital Contributions										
Student loans	618,116	27.4	717,533	27.5	893,672	29.5	934,859	28.4	951,840	26.7
Other	2,300	0.1	6,818	0.3	53,472	1.8	84,199	2.6	89,045	2.5
Benefits										
Student allowances	203,022	14.7	386,162	14.8	391,985	13.0	400,758	12.2	405,043	11.4
Training incentive allowances	30,360	1.5	34,745	1.3	40,411	1.3	35,582	1.1	48,111	1.4
Community Wage - training	22,246	1.5	49,000	1.9	39,000	1.3	36,011	1.1	-	-
Other Expenses										
Tertiary Scholarships	5,586	0.2	6,488	0.2	11,543	0.4	13,618	0.4	19,188	0.5
Community education	17,357	1.3	16,207	0.6	20,254	0.7	18,859	0.6	40,112	1.1
Training for designated groups[45]	121,546	4.9	134,247	5.1	149,418	4.9	165,405	5.0	190,498	5.3
Ministry of Education										
Policy advice, administration of resourcing and other services	23,990	0.9	12,604	0.5	8,153	0.3	13,400	0.4	15,805	0.4
Non-Ministry Administration										
Provision of information and advisory services to students	27,268	1.1	53,026	1.3	56,296	1.9	44,755	1.4	45,879	1.3
Management of grants and contracts, development of standards and qualifications	9,825	0.4	8,778	0.4	12,989	0.5	12,056	0.4	12,523	0.4
Total Funding	**$2,315,047**		**$2,627,776**		**$3,023,750**		**$3,296,191**		**$3,561,716**	

[45] Includes Industry Training Fund, Modern Apprenticeships Programme, Skill Enhancements, Training Opportunities Programme, Gateway, and second chance education.

Figure 7.6 illustrates the upward trend of nominal expenditure on tertiary education. Although overall spending has increased, as a proportion of total government expenditure on education the tertiary sector dropped from 34.4 percent in 2001 to 33.8 percent in 2002. However, tertiary spending as a percentage of overall government spending increased from 5.4 percent in 2001 to 6.3 percent in 2002.

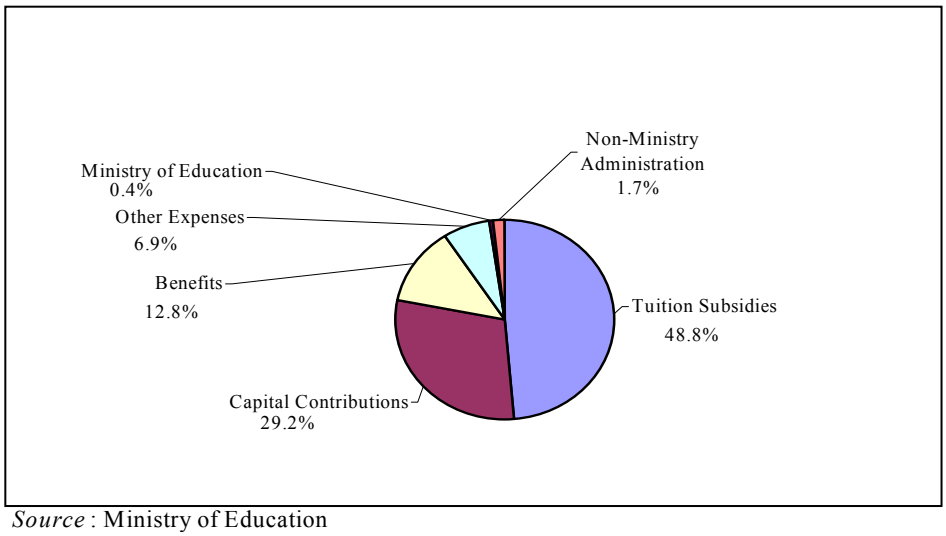
Figure 7.6: Government Expenditure on Tertiary Education, 1999-2003 (Estimate)



Source: Ministry of Education

The estimated breakdown of expenditure in 2003 is given in figure 7.7. Tuition subsidies make up the greatest proportion of spending (almost half of total expenditure on tertiary education), while expenditure on student loans comprises over one quarter of total spending.

Figure 7.7: Breakdown of Expenditure on Tertiary Education (2003 Estimate)



Source : Ministry of Education

The Ministry of Education has estimated government expenditure on tertiary education - excluding spending on student loans and allowances - to be 1.6 percent of New Zealand's Gross Domestic Product (GDP) in the year from 1 April 2002 to 31 March 2003, up from 1.3 percent in 1999/2000. When spending on student loans and allowances is included, tertiary education expenditure reaches an estimated 2.0 percent of GDP, compared with 1.7 percent in 1999/2000. However, repayments of student loans are not considered in these figures.

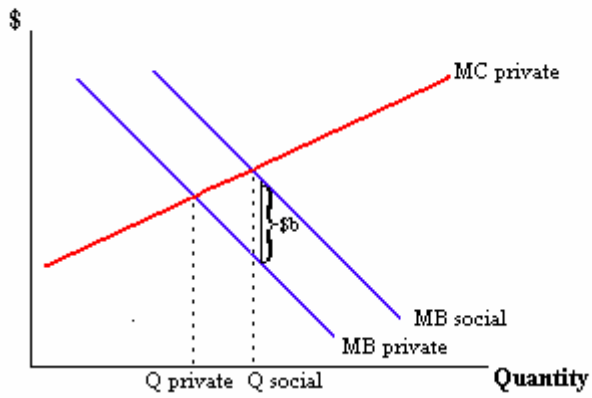
In 2002, the Ministry of Education estimated that students pay, on average, 29 percent of the total course costs of their tertiary education.

7.3 Returns to the taxpayer

One line of reasoning commonly used by those arguing for complete public subsidisation of tertiary studies is that education is a public good. However, in purely economic terms education is generally a private good. In most cases it is rival (use by one person diminishes the use of another person) and excludable (can prevent people from using it by having to pay) (Birks and Chatterjee, 2001). Nonetheless, it is widely agreed that higher education does produce spill-over benefits – positive externalities that occur when "one party's action provides a 'gain' to someone else for which payment is not required" (Haveman, 1976, p.178). The Ministerial Consultative Group Report – "Funding Growth in Tertiary Education and Training" recognised that, if funding of tertiary education is left entirely to the market, under-investment will occur (MCG, 1994). Subsequently, the report recommended that the government should make a substantial contribution to the cost of tertiary education, to ensure that society does not lose the benefits beyond those received by the individual (MCG, 1994).

Figure 7.8 gives a stylised representation of the market for higher education. The curve $MB_{private}$ represents the marginal benefit to individual students of participating in tertiary education (and therefore indicating the amount they would be willing to pay at the margin, taking into account the opportunity cost of students' time enrolled in tertiary education). MB_{social} reflects net benefits to society as a whole of students attending tertiary institutions. MC represents the marginal cost of tertiary education (the supply curve), representing the cost to institutions of providing higher education.

Figure 7.8: Market for Higher Education



In the absence of government funding, students would choose the amount of tertiary education that equates their private marginal benefit of education with their private marginal cost. That is, $Q_{private}$. From society's point of view, the amount of tertiary education consumed is less than optimal. Instead, society would prefer to have Q_{social} units consumed. At $Q_{private}$ the next unit of output yields benefits to society in excess of costs and, hence, it is in the interest of society to have Q_{social} units of tertiary education produced.

A subsidy paid by government, equal to $b per unit would redress this inefficiency, resulting in output being increased to Q_{social}, where marginal costs are equated with total marginal benefits. Only at this point is the net contribution of tertiary education to society maximised. However, difficulties arise in determining the marginal benefit to the public, and the size of $b. Somehow, the significance of the public benefits of tertiary education must be determined, and hence the appropriate split between funding from government and individual students.

Before the benefits from tertiary institutions can be identified, it is important to determine the outputs that are produced. Providing an education is the most obvious output - the main beneficiary of which is likely to be the student, observed through higher lifetime earnings and the consumption benefits that occur due to enjoyment of study (McLaughlin, 2003). However, under section 162 (4a) of the Education Act 1989, universities are also required to produce research, to act as a repository of knowledge and expertise, and accept a role as a conscience and critic of society. Colleges of education, wananga, and polytechnics serve this role also, but arguably to a lesser degree (Hansen, 2002). Although students undertaking

higher-level courses often gain from having lecturers with research experience, it is generally agreed that society as a whole, as opposed to individual students, is the main beneficiary from university research (Hansen, 2002). Likewise, society is the main beneficiary from the roles that universities perform as critics and consciences of society and as repositories of knowledge (Hansen, 2002). However, these benefits are impossible to accurately quantify.

Maani (1997) points out that there are both positive and normative aspects when attempting to draw upon the benefits of higher education. For society, positive issues considered are public expenditure and the economic returns that result from investment in higher education (Maani, 1997). However, public funding is also influenced by normative aspects such as "the value placed on equity of access to education" (Maani, 1997, p.2).

For public expenditure on higher education to be justified, the economic returns (including external benefits and costs) must be positive and productive compared to society's alternative investments (Stanley-Clarke, 2000). Possible future economic returns for society include research and technological change (Stanley-Clarke, 2000). In addition, further education can improve human capital, can increase worker productivity, and, because of a competitive labour market, may increase wages for highly skilled workers; as a result, taxation receipts may increase (Maani, 1997). However, economic returns are complicated because of the possibility of positive externalities that occur to third parties (Stanley-Clarke, 2000).

There are a number of spill-over benefits cited in the literature that are hypothesised to occur because of tertiary education. These include higher productivity, leading to increased economic growth at the margin, with associated benefits such as increased individual living standards, higher levels of employment, and decreased expenditure on welfare payments (Craven et. al, 1987). Another externality suggested is that higher education yields additional benefits to economic performance because it stimulates the accumulation of other productive inputs such as physical capital, or technology, which in turn foster economic growth (Sianesi and van Reenen, 2002).

Other social returns to higher education referred to are a role in preserving democratic freedom and increased social cohesion (Stanley-Clarke, 2000). However, exactly what is implied by 'preserving democratic freedom' is not defined (does this mean training to accept the established line of thought?); there is also the possibility that 'democratic freedom' may result in more conflict than cohesion, as individuals have greater autonomy in making decisions (S. Birks, personal communication, 28th October 2003).

One positive externality of education often cited in the literature is a lowering of criminal behaviour. Despite this, there is little discussion of the impact that higher education has on white-collar crime – there is the possibility that it may actually increase the prevalence of such behaviour. Another possible spill-over is that an environment with a higher average level of human capital may entail a higher incidence of learning from others, as educated individuals inevitably pass some of their skills and knowledge on to less educated colleagues (Kreuger and Lindahl, 2001). Furthermore, as (educated) individuals produce goods, they think of ways of improving the production process (Romer, 2001).

It is also argued that there are external social impacts to higher education, which in turn can have indirect effects. For example, more education has been found to be associated with better public health, a better environment, wider political and community participation, and better parenting (including tertiary educated parents contributing more towards the education of their offspring), all of which is likely to feed back into economic growth (Sianesi and van Reenen, 2002; OECD, 2000). Other positive spill-overs suggested include more intelligent voter behaviour, a greater ability to take initiative, develop and adapt to technological change, and a role in transmitting and enhancing appreciation of cultural values (Craven et. al, 1987; Krueger and Lindahl, 2001). The MCG also noted that higher education assisted in the creation of an institutional environment that stimulates research (MCG, 1994).

In addition, research by Maani (1997) and Krueger and Lindahl (2001) shows that those with higher education are less likely to depend on welfare payments; also, OECD Economic Surveys (1992 – 1993) show a negative correlation between educational qualification and unemployment. Perhaps of less significance, McMahon (1984) states that there is empirical evidence that graduates are more likely to participate in a range of voluntary boards and commissions.

All of the potential spill-over benefits are impossible to quantify exactly, but are used to justify governments' continuing subsidisation of higher education - whenever external benefits exist there is market failure, and resulting inefficiency may justify government intervention. Nonetheless, as noted by the MCG, observing external benefits does not necessarily justify a case for a subsidy. A case for intervention requires that the benefits from doing so outweigh the costs, and that there is not a lower opportunity cost for the money used elsewhere. In addition, there is a common stream of thought that diminishing marginal returns to education exist. That is, there are significant externalities present in the early years of an education, but these are likely to diminish with each additional year of education (Payne and Callender, 1997). The social returns from higher education may therefore be small.

There is a dearth of empirical research in New Zealand on the social returns to higher education. Maani (1997) has estimated the rate of return associated with lifetime income gains adjusted for all public and private costs of the investment including forgone earnings. The use of lifetime income is based on the competitive marketplace, whereby the market returns to an individual's economic activity (earnings) reflect the value to the economy in terms of the individual's productivity (Maani, 1997). The analysis shows that investments in post-compulsory education from 1991 to 1995 were a worthwhile social investment.

CHAPTER 8 WOMEN AND STUDENT LOANS: CLAIM UNDER THE HUMAN RIGHTS ACT

On 3 September 2003, NZUSA Co-President Fleur Fitzsimons ("on behalf of all women borrowers in New Zealand") laid a claim with the Human Rights Commission (HRC) asserting that the New Zealand Student Loan Scheme discriminates against women under the Human Rights Act 1993 (NZUSA, 2003, p. 1). This chapter outlines the claim and the rationale behind it.

8.1 The Claim

The claim asserts that the loan scheme unlawfully discriminates against women because, on average, females take twice as long as men to repay their student loans. As a result, women pay more for their education than men because they face higher total interest payments. Due to the longer repayment period, it is claimed that the scheme indirectly discriminates against females; women are therefore discriminated against in paying for their tertiary education.

8.2 Human Rights Act 1993

Discrimination may be direct or indirect. Under Section 65 (2) of the Human Rights Act indirect discrimination occurs "where any conduct or practice has the effect of discriminating against a person(s) even though it may appear to be neutral".

Section 21 of the Human Rights Act states that it is unlawful to discriminate against people in one of the prohibited grounds *and* in one of the prohibited areas of public life. For the purposes of this case the prohibited grounds for discrimination is sex, Section 21 (1a); it is claimed that women are indirectly disadvantaged by the loan scheme because of their sex. The relevant prohibited area of public life is education, Section 57; because of the student loan scheme it is argued that women are discriminated against in tertiary education.

Under Section 1A of the Human Rights Amendment Act 2001, any branch of Government, Department, or individual performing a public function is legally responsible for unlawful discrimination. Complaints can be made about policies, practices, and legislation - in this case the student loan scheme. Any Act complained about must be shown to be a "reasonable limit on the right to be free from discrimination, prescribed by law, which is demonstrably justified in a free and democratic society" (www.hrc.co.nz). If the Government cannot prove this, then the Act will be deemed to be unlawfully discriminating.

Furthermore, under Section 19 (1) of the New Zealand Bill of Rights Act, 1990, everyone has the right to freedom from discrimination on the ground of sex.

8.3 Evidence Supporting the Claim

Using figures obtained from the 1999 Briefing to the Incoming Minister of Women's Affairs, women with a degree earn, on average, 83 percent of equally qualified men's hourly earnings. These data are used to show evidence of a gender pay gap - the difference in average rates of pay between males and females.

The HRC claim uses figures obtained from the NZUSA Debt Repayment Calculator to illustrate the significant differences in repayment times of student loans between females and males. Average repayment time for individuals with a Bachelors degree is 28 years for females, and 15 years for males. Reasons given for this imbalance are pay inequity, time taken out of the workforce to care for children, unpaid work not being valued, and gender segregation in industry.

8.4 Discussion

There are a number of inconsistencies and questions that can be raised regarding the complaint made to the Human Rights Commission. Some of these are discussed below:

(1) The methodology behind the average repayment period used to substantiate the claim is flawed, as discussed in chapter five, section two of this report. The difference in repayment time between males and females is significantly inflated as a result.

(2) The calculation of repayment times in chapter six shows that ethnic differences are greater than gender differences. Should the Human Rights Commission also investigate whether or not the loan scheme discriminates by ethnicity?

(3) As calculated in chapter six, gender differences in interest paid are often not bad for women. Despite lower incomes, in many instances females pay less interest than males because of a smaller initial debt. It is therefore questionable whether females do pay more than males for their education, as is claimed.[46]

(4) NZUSA acknowledges that if "there were no gender pay gap then the student loan scheme would not discriminate against women" (NZUSA, 2003a, p.2). Following the rationale of the argument, then males earning less than the average female wage, and males undertaking unpaid domestic work are discriminated against also; yet no claim has been laid on behalf of this sub-group.

(5) The claim laid with the HRC recognises that "not all women are discriminated against by student loan debt and related interest payments" (NZUSA, 2003, p.4). Instead, female graduates earning the average wage or less are prejudiced against (NZUSA, 2003). The proposition is unusual as there will always be individuals earning below the average; with a normal distribution, this will be half the population. Following the reasoning used in the claim (females earning below average are discriminated against), the loan scheme will always discriminate against some portion of the population in favour of others.

(6) The claim made to the HRC states that the student loan scheme discriminates against women. However, NZUSA readily acknowledges that the scheme does not discriminate against all women, and on their own criteria it also discriminates against some men. How then, can it be said that the scheme discriminates against women?

[46] The results do show that women will take longer than men to repay a loan of the same size due to, on average, lower income. Overall though, total interest paid is generally lower for females.

(7) The claim asserts that females partaking in unpaid domestic work and taking time out of the workforce to raise children are discriminated against (NZUSA, 2003). This assertion raises some interesting questions. For example, are females choosing to carry out this work and raise children, or are they being forced to, against their own free will? According to economic theory, rational individuals will maximise their total utility. That is, they will spend time undertaking the activities that give them the highest total benefit. If women are freely making the choice to study and take out a loan, or freely make the choice to take time off work (thereby maximising their total utility), then how can the loan scheme be discriminating against these individuals? Furthermore, if females are being forced into unpaid domestic work, is this an issue of the loan scheme being discriminatory against them? Or does the issue become one of the woman's civil rights under the New Zealand Bill of Rights Act 1990, whereby everybody has the right to freedom of association, expression, and the right not to be subjected to cruel treatment or punishment?

(8) A great deal of empirical evidence suggests that differences still persist in terms of average rates of pay (for all work) received by males and females - evidence on which the HRC claim is primarily based. However, lower pay does not necessarily equal discrimination - income comparisons are drawn although there are clear differences in occupations between males and females. The question again comes down to whether individuals have the ability to make career choices of their own free will[47]. Furthermore, even when females choose similar careers to men, research suggests that income differentials still persist – often because women are more likely to work part-time.

(9) Individuals on very low incomes (less that $15,964 per annum) receive a base interest write-off, and the outstanding loan balance increases only at the rate of inflation. In addition, partial interest write-offs may apply to individuals earning above the threshold, but still on low incomes. It is likely that one of these scenarios will apply to females taking a break from the workforce to raise children, or to partake in other

[47] If there are no barriers to undertaking the tertiary qualification and career of their choice, and the chosen career pays less than the average male wage, how is the loan scheme discriminating against females? Is the lower pay not simply a result of market forces, with demand and supply determining the wage received? If females are choosing to undertake tertiary qualifications that inevitably lead to lower paid jobs than males, how is the loan scheme being discriminatory? Could females not have chosen to enter careers with higher remuneration?

unpaid domestic work. Economic reasoning would suggest that these individuals are actually at an advantage (as opposed to being discriminated against), compared with those who must pay the full rate of interest.

(10) NZUSA believes that changes should be made to ensure that the unpaid work of women does not disadvantage them in terms of the loan scheme. Possible solutions suggested are introducing a full-interest write-off for women raising children, or crediting their outstanding loan balance by the amount repaid in their last year of full-time work for every year spent out of the workforce (NZUSA, 2003). However, when females have debt in the form of a mortgage and take time out of the workforce to raise children, no interest rate subsidy is given. Does this mean that females are discriminated against when investing in a house as well as, or instead of, a tertiary education?

(11) The claim does not indicate whether or not it is believed that degrees of discrimination exist. That is, whether a female earning $10,000 a year below the average wage is discriminated against more than someone earning $10 below the average wage. If this is the case, should interest rate subsidies be varied according to incomes of individuals?

(12) Take the case of two individuals graduating with a loan of the same size - a 65 year-old female and a 21 year-old male. It is highly probable that the female will earn below the average wage for the rest of her lifetime, and (according to the argument used in the claim) is discriminated against by the student loan scheme. In reality, the male will probably pay more for his tertiary education, as he will have to repay the entire principal plus the interest charged. On the other hand, it is likely that the female's loan will be written off upon death, with only minimal (if any) repayments having been made. How then does the loan scheme discriminate against the woman concerned?

CHAPTER 9 CONCLUSION

9.1 Overview of Results

Over the past 15 years there has been a significant shift in tertiary education policy in New Zealand, with greater attention being drawn to the benefits derived by the individual student. This has resulted in considerable increases in course fees and loans for living costs. Subsequently, student debt levels have risen dramatically, as has debate over the impact that debt has on society and individuals.

Unlike overseas schemes, New Zealand's student loan scheme allows access to funds for all students, and the level of parental support does not determine available borrowing. Furthermore, interest rate subsidies are comparatively high during the period of study, but low whilst in full-time employment. The repayment threshold under the New Zealand scheme is relatively low, and the required repayment high; the effect being to significantly increase marginal tax rates and to intensify debate about the impact of student loan debt on individuals.

The results obtained when calculating the period of debt repayment were significantly shorter than those obtained by the New Zealand University Students' Association, and longer than those estimated by the Ministry of Education using the TESLA model. These results are not surprising, considering that the methodology underlying the NZUSA model is clearly flawed, causing a substantial inflation of the calculated debt repayment period. Also, since TESLA does not categorise repayment periods by institution type, we would expect the repayment period to be longer for university students compared with an average across all institutions, due to higher course costs for these students.

The taxpayer still subsidises the majority of the costs of higher education and, because of the existence of spill-over benefits, there are many potential returns from the investment. Nonetheless, it is widely agreed that benefits accrue both to society and to individual students; due to difficulty in quantifying external gains, the extent to which the taxpayer should subsidise tertiary education will always be contentious.

Finally, the claim laid with the Human Rights Commission that the student loan scheme discriminates against women, due to the existence of a gender pay gap, is unsubstantiated and contradictory. The claim acknowledges that the scheme does not discriminate against all women, yet it has been made on behalf of all women borrowers in New Zealand.

9.2 Limitations and Scope for Further Research

Although the research is useful in the sense that it gives a broad overview of various factors surrounding student debt in New Zealand, one area in which the analysis could be improved is in the modelling of the amount borrowed. The inability to obtain specific data pertaining to total loan size by institution type means that the estimates of debt repayment times may be inaccurate. This problem is further compounded by full interest write-offs, which are likely to have resulted in increases in the average amount borrowed, with the individual expecting to repay a portion of the loan immediately after course end to avoid paying the full rate of interest.

It would also be of use to model repayment estimates using data on median loan size, which is typically lower than the mean amount borrowed. Furthermore, comparing repayment periods between university and polytechnic degrees, and undergraduate and post-graduate degrees would be interesting.

Also of interest would be research on the decision to take out a student loan – whether it is because of financial need, to allow more even lifetime expenditure, or the perception of obtaining a financial advantage (or a combination of these), and the ensuing reasons behind the amount borrowed. This would help to determine the impact that full interest write-offs have had on average loan size, and establish whether the benefits of the policy outweigh the costs.

The research has focused on New Zealand students, though it would also be relevant to investigate debt repayment periods overseas, and look further into differences in earnings by educational qualification in different countries.

Additionally, further research on rates of return from higher education would be of use. This could then help to determine the efficient level of taxpayer subsidisation. Rates of return could also be compared amongst countries.

Regardless of the determination of the appropriate split of funding between government and individual students, it is important that understanding of the loan scheme, and the costs and benefits associated with student loans is improved. It is also vital that accurate forecasts of repayment periods are calculated. These factors would help students make informed decisions regarding the significant investment they make in their tertiary education.

APPENDIX A: AUSTRALIAN STUDENT LOAN SCHEME

In 1989 fees for undergraduate students were introduced after the passing into law of the Higher Education Funding Act, 1988. The rationale behind the legislation was that students were seen to benefit from tertiary education and should therefore be expected to contribute towards the costs (Department of Education Science and Training, 2002). Subsequently a loan scheme, the Higher Education Contribution Scheme (HECS), was introduced in 1991 in order to ensure that students could afford to pay for part of the cost of their studies. The HECS is funded by Federal Government; eligibility for a loan requires that the student be an Australian citizen and is enrolled in an approved course.

Students have the option of paying fees upfront or deferring the payment and holding a debt with the Commonwealth. Repayment of debt incurred is made to the Australian Taxation Office (ATO) and is income contingent. Despite the introduction of the HECS, the majority of the costs of tertiary education are still borne by the taxpayer; the actual student contribution represents, on average, around 26 percent of the course costs of higher education (Higher Education Report for the 2003-2005 Triennium, p.64).

HECS Liability

Since 1 January 1997 the fees that an undergraduate student pays are proportional to the study load and related to the individual units (papers) studied, not the overall course category. Units of study are divided into three bands and the amount paid for each unit depends on the band and the weight of the unit within a course.[48] Table A.1 sets out the undergraduate fee levels for a full time, full year student who borrows in 2003.

[48] Following the Higher Education Report for the 2003-2005 triennium new tertiary education policies are to be implemented from 2004 to 2008. As of 1 January 2005 the Government will no longer set standard contributions through HECS. Instead, institutions will individually set fees, but will be bound by a fee maxima set by the Commonwealth, which will vary between institutions and courses.

Table A.1: Undergraduate Student Contribution Levels 2003[49]

Category of Study	Higher Education Contribution
Band 1 Humanities, Arts, Behavioural Science, Social Studies, Foreign Languages, Visual and Performing Arts, Education, Nursing	$3,680
Band 2 Accounting, Commerce, Administration, Economics, Maths, Statistics, Computing, Built Environment, Health, Engineering, Science, Surveying, Agriculture	$5,242
Band 3 Law, Dentistry, Medicine, Veterinary science	$6,136

Source: Department of Education, Science and Training (DEST).

For study undertaken since 1 July 1998, Australian students have three options when paying their fees each semester:

- Pay up front and receive a 25 percent discount;[50,51]
- Make a partial up front payment of at least $500 and receive a 25 percent discount on that payment[12]; or
- Defer payment and repay through the Australian Taxation Office (ATO) when income exceeds the minimum repayment threshold.

If payment is deferred, the debt accumulates for each semester in which a payment of less than 75 percent of the semester liability is recorded during the student's period of study. The accumulated debt is indexed to changes in the cost of living, as measured by the CPI, to maintain its real value, but otherwise is interest free. The inflation adjustment is made by the ATO on 1 June annually, and applies to the portion of debt which has remained unpaid for 12 months or more – thereby giving students an incentive to make

[49] All values are given in Australian dollars unless otherwise stated.
[50] New Zealand citizens (who are not Australian citizens) must pay their HECS contribution up front each semester and are not eligible for the discount.
[51] As of 1 January 2005 the discount decreases to 20%

voluntary repayments in late May in order to avoid further increases in their loan size. In addition, if a voluntary repayment of $500 or more is made, a 15 percent bonus of the repayment applies.[52] For example, if a voluntary repayment of $1,000 is made, the total debt reduces by $1,150.

Postgraduate Education Loan Scheme

Unlike HECS courses, postgraduate students are required to pay the full cost of the course (with no contribution from the Commonwealth). If the course assessment is comprised of less than two-thirds research, students are able to obtain a loan from the Commonwealth under the Postgraduate Education Loan Scheme (PELS) in order to pay for all or part of their tuition fees.[53] Repayment requirements for PELS loans are the same as for HECS loans.[54]

HECS Income Contingent Repayment

Compulsory HECS repayments are required when annual income is greater than $24,365, regardless of whether one is studying, working, or has just left employment. The income used to calculate repayments is the HECS repayment income and is equal to taxable income for a year; plus any amount taxable income has been reduced by a net rental loss; plus any reportable fringe benefits total for the year of income.

When HECS repayment income reaches the minimum threshold for any particular year, the ATO calculates compulsory repayments. Money is collected through PAYG (Pay As You Go) and the income thresholds are adjusted each year to reflect changes in average weekly earnings. Repayments continue to be made until the unpaid debt is zero; the only case in which an outstanding balance will be written off is upon death of the borrower. The income thresholds and repayment rates for income earned during the 2002 - 2003 income year are given in table A.2.[55]

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52 As of 1 January 2005 the bonus decreases to 10%.

53 Applies to fees incurred from 2002 onwards.

54 Although postgraduate students undertaking research course are unable to borrow under the PELS, a significant number of postgraduate scholarships are available to assist students undertaking research.

55 Financial income year 1 July 2002 – 30 June 2003.

Table A.2: HECS Repayment Threshold and Compulsory Repayments

HECS Income	Repayment Rate Applied to HECS Income	Total Compulsory Repayment
Below $24,365	Nil	Nil
$24,365 - $25,694	3.0%	$731 - $771
$25,695 - $27,688	3.5%	$899 - $969
$27,689 - $32,118	4.0%	$1,108 - $1,285
$32,119 - $38,763	4.5%	$1,445 - $1,744
$38,764 - $40,801	5.0%	$1,938 - $2,040
$40,802 - $43,858	5.5%	$2,244 - $2,412
$43,859 and above	6.0%	$2,632 +

Source: Department of Education, Science and Training (Columns 1 and 2).

APPENDIX B: UNITED STATES STUDENT LOAN SCHEME

The Higher Education Act of 1965 was signed into law for the purpose of "increasing access to higher education for all citizens of the United States and to strengthen the capacity of higher education institutions to better serve their communities" (http://domenici.senate.gov). Included in the Act were provisions for students to obtain loans from private banks after an eligibility recommendation had been obtained from the designated educational institute. The institution first had to contact federal and state governments as to eligibility of funds; following this, applications and signed documents declaring that the borrower agreed to repay a stated amount were exchanged amongst federal government, state government, the higher education authority in the relevant state, and other guarantor agencies and banks. The process was extremely time consuming and consequently an amendment was made to the Act, which saw the introduction of the William D. Ford Federal Direct Loan Program (FDLP) in September 1994.

The FDLP is administered by the Department of Education, funded directly by central government through the sale of Treasury Bills, and is now the major student loan scheme of the United States. Direct loans comprise approximately two thirds of the total number of student loans obtained from all sources; for the 2002 financial year this equated to over US$19 billion in lending (CFDA, 2003).

Eligibility Criteria

Eligibility for all loans requires that the borrower has: American citizenship or be an eligible non-citizen, a Social Security Number, a high school diploma, General Education Development certificate, or pass an "ability to benefit" test approved by the Department of Education. In addition, the individual must enrol in an eligible course as a regular student seeking a degree or certificate, register (or have registered) for Selective Service if the borrower is a male between the ages of 18-25, and maintain satisfactory academic progress when studying.[56] There are a number of different loans available under the FDLP, with eligibility for some depending upon the student's income and parental income.

[56] Selective Service is an agency set up to provide manpower to the armed forces in an emergency. Virtually all men ages 18 through 25 must enter.

Types of Student Loans

(1) **Federal Direct Stafford/Ford Loans (Direct Subsidised Loans)**

Students must demonstrate financial need in order to be eligible for a Direct Subsidised Loan. The government pays interest on the loan during the period of study.

(2) **Federal Direct Unsubsidised Stafford/Ford Loans (Direct Unsubsidised Loans)**

Students can get a Direct Unsubsidised loan regardless of their financial situation, but are responsible for all interest charges that are incurred throughout the life of the loan.

(3) **Federal Direct PLUS Loans (Direct PLUS Loans)**

Parents of dependent students can obtain these loans in order to pay for their child's education. Parents are then liable for all interest charges.

(4) **Federal Direct Consolidation Loans (Direct Consolidation Loans)**

This loan combines one or more federal education loan(s) into one Direct Loan.

The amount that can be borrowed is reduced by other financial aid that a student receives, the amount a family is expected to contribute towards university costs (in the case of Direct Subsidised Loans), and is limited by the student's education costs. The amount that can be borrowed also depends on whether the student is independent or dependent.[57,58] Furthermore, there are limits on total borrowing - the maximum that can be loaned over the course of study is $23,000 for a dependent undergraduate student, $46,000 for an independent undergraduate student, and up to $138,500 for a graduate or professional student (including previous loans for undergraduate study).[59] Table B.1 sets out maximum borrowing for the 2003 academic year.

[57] An individual is deemed to be independent if they meet one of the following criteria: 25 years or older, married, have children, a veteran of the United States Armed Forces, or an orphan or ward of the court.

[58] The parent of a dependent student can borrow up to the cost of the student's education minus other financial aid the student receives.

[59] All figures given are in American dollars unless otherwise stated.

Table B.1: Limits on Borrowing per Student, 2003 Academic Year

	Dependent Student	Independent Student
1st Year Undergraduate	$ 2,625	$ 6,625
2nd Year Undergraduate	$ 3,500	$ 7,500
3rd and 4thYear Undergraduate	$ 5,500	$ 10,500
Graduate/Professional	N/A	$138,500

Source: Department of Education

Borrowing Charges

An administration fee of four percent is charged on all amounts borrowed. This would equal New Zealand's administration fee of $50 if the amount borrowed was $1,250. In addition, interest is charged throughout the life of the loan. Current interest rates are given in table B.2.

Table B.2: Interest Rates on Student Loans, Effective 1 July 2003

Loan Type[60]	Status	Interest rate
Direct Subsidised and Direct Unsubsidised Student Loans	In repayment	3.42%
Direct Subsidised and Direct Unsubsidised Student Loans	Prior to the beginning of repayment or during deferment (a period in which repayment of the principal balance is postponed)	2.82%
Direct PLUS loans	In any period	4.22%
Direct Consolidation Loans and PLUS Consolidation Loans (applications received on or after Feb/01/1999)	In any period	Weighted average interest rate of the loan(s) consolidated, rounded to the nearest 1/8 percent. Maximum rate is 8.25%.

Source: Department of Education

[60] Unless otherwise stated applies to loans disbursed on or after 1 July 1998.

Repayment Options for Direct Loans

Repayments are made to the Department of Education and there are four plans in which a loan may be repaid. Direct PLUS Loan borrowers may choose from the first three options only:

(1) **Standard Repayment Plan**

The plan requires fixed monthly payments (of at least $50) over a fixed period of time (up to ten years). The length of the repayment period depends on the loan amount.

(2) **Extended Repayment Plan**

The plan still requires fixed monthly payments (of at least $50), but loan repayment is extended over a longer period, generally from 12 to 30 years and depends on the total amount borrowed.

(3) **Graduated Repayment Plan**

With this plan, payments start out low and increase every two years. Again, the repayment period will generally vary from 12 to 30 years depending on the total amount borrowed.

(4) **Income Contingent Repayment Plan**

Monthly payments are based on the borrower's Adjusted Gross Income (AGI), as verified by the IRS, and the total amount borrowed. As income rises or falls, monthly payments are adjusted accordingly. If the loan is not repaid within 25 years any unpaid amount is discharged, although borrowers are taxed as ordinary income on the amount written off.

There is also a part non-capitalisation of accruing interest under the income contingent repayment plan. This occurs when the monthly fixed payment amount is not high enough to meet the amount of interest that accrues on the loan each month. The unpaid interest capitalises (is added to the principal balance) once a year and continues to do so to a maximum of ten percent of the original loan balance.[61] After the outstanding principal is ten percent greater than the original principal, interest continues to accrue, but does not capitalise yearly.

[61] Original loan balance refers to the balance at the time the borrower enters repayment.

Repayment Incentives

Repayment incentives were introduced to encourage prompt repayment of student loans and apply to loans taken out from the 2000 academic year onwards. An up-front interest rebate is given to Direct Subsidised Loan, Direct Unsubsidised Loan, and Direct PLUS Loan borrowers who meet the first 12 required monthly payments on time. The rebate amount is equal to 1.5 percent of the loan amount borrowed. In addition, beginning with repayments made in 2002, up to $2,500 per annum in student loan interest payments are tax deductible. This decreases the amount of income subject to tax, thereby increasing the incentive for the individual to repay their outstanding loan.

Write-off Provisions

An outstanding loan balance will be written off if the borrower becomes totally and permanently disabled; is unable to complete a course of study because the school closed or falsely certified eligibility; is declared bankrupt (in rare cases only); or upon death. A partial write-off may be obtained if a borrower is a teacher with a loan and has been teaching in selected low-income schools for five consecutive, complete, academic years. The teacher then becomes eligible for the Teacher Loan Forgiveness Discharge, a write-off of up to $5,000.

APPENDIX C: ENGLAND AND WALES STUDENT LOAN SCHEME[62]

The Teaching and Higher Education Act 1998, was passed into law to try and improve standards in tertiary education. The means by which this would be achieved was to make it compulsory for students to contribute towards the cost of their studies. The maximum that any student is required to pay towards their fees is £1,125, which represents approximately one quarter of the course costs of higher education. However, the majority of students do not pay the full amount, as the contribution is related to family income and depends on whether a student is financially dependent on their parents.[63] Table C.1 sets out the fee contribution for 2003/04.

Table C.1: Student Fee Contribution for 2003/04

Fee Contribution	Parental Residual Income[64] (Dependent Student)	Student's Residual Family Income (Independent Student)
No contribution	Less than £20,970	Less than £18,040
Part contribution, worked out on a sliding scale	£20,970 - £31,230	£18,040 - £26,679
Full fee contribution of £1,125	£31,231 or more	£26,680 or more

Source: Department for Education and Skills

The Teaching and Higher Education Act also saw the introduction of income contingent loans, whereby eligible students can borrow money for fees, living costs, and, in extreme circumstances of financial difficulty, up to £500 in the form of a hardship loan. The scheme is funded by Central Government.

62 Applies to student's whose homes are in England or Wales (whether studying in England, Wales or elsewhere in the UK).

63 A student is assumed to be financially independent if they fit one of the following criteria: 25 years or older, are married, have no living parents, have supported themselves for at least three years.

64 Residual income = Gross income (income before tax and National Insurance) – certain allowances.

66 There are a smaller number of exceptions to this rule.

Eligibility and Entitlement

In order to be eligible for a loan the student must have ordinarily been a resident in Britain for the three years immediately prior to the start of the academic year of the course being undertaken.[66] Loans are available to those studying for a first degree and are not available to people on courses below degree level or those studying for a postgraduate degree – unless taking an approved postgraduate teaching qualification.

Eligible students of any age may borrow for course fees but living costs may only be borrowed if the student is less than 55 years old. If the borrower is aged between 50 and 54, they must confirm that they plan to return to work upon completion of the degree in order to be eligible for living costs.

The amount that the individual is entitled to depends on where the borrower lives, their age, their spouse or family's financial circumstances, the type of course they are following, and the college they are studying at.

For all students, the amount able to be borrowed decreases in the final year of study because the summer holidays are not covered – students are assumed to be available for work or eligible for a benefit. The maximum borrowing amounts for 2003/04 are given in table C.2.

Table C.2: Maximum Borrowing, 2003/04 Academic Year

	Maximum Borrowing	
Residency Status	**Full Year**	**Final Year**
Living away from home	£4,000	£3,470
Living away from home in London[67]	£4,930	£4,275
Living at home	£3,165	£2,765

Source: Department for Education and Skills

75 percent of the maximum loan is available to students regardless of any other income they have. Whether or not a student is entitled to the remaining 25 percent depends on their income and the income of their family.

[67] Higher borrowing is permitted for students who live in London because of the higher cost of living.

Loan Repayment

Repayments are made in April after the student finishes (or ceases to attend) their course. The amount paid is contingent on the individual's income, although voluntary payments are accepted. The repayment threshold is £10,000 per annum, and nine percent of all income over this amount must go towards repayment of an outstanding student loan.[68] Inland Revenue collects repayments through PAYE in conjunction with the Student Loan Company (the corporation responsible for administering student loans throughout the United Kingdom).

The Interest Rate

Interest accrues on all loans from the day the first installment of the loan is received. Loans are indexed to inflation in line with the Retail Price Index (RPI), which is similar to the CPI in New Zealand or Australia. Like the Australian loan scheme, this means that the effective real interest rate is zero - the amount paid back will be approximately the same in real terms as the amount borrowed.

Write-off Provisions

Outstanding loan balances are written off if the borrower becomes permanently disabled, dies, or, if all compulsory repayments have been made, upon reaching 65 years of age.

[68] From 2005 the repayment threshold will be raised to £15,000 a year. Therefore, 9% of all income over £15,000 will need to be repaid on any outstanding student loan balance.

APPENDIX D: STATISTICS NEW ZEALAND DEFINITIONS

Census of Population and Dwellings
A five-yearly official count of population and dwellings In New Zealand.

Employed Full-Time
People aged 15 years or over that work at least 30 hours a week.

Ethnicity
Ethnicity is the ethnic group or groups that people identify with or feel they belong to. Thus, ethnicity is self-perceived and people can belong to more than one ethnic group. Ethnicity is a measure of cultural affiliation, as opposed to race, ancestry, nationality or citizenship. An ethnic group is a social group whose members have the following four characteristics:

(1) Share a sense of common origins;
(2) Claim a common and distinctive history and destiny;
(3) Possess one or more dimensions of collective cultural individuality;
(4) Feel a sense of unique collective solidarity.

Total Income
Includes salary, wages, commission, interest, dividends, rent, bonuses, any form of government benefits (including allowances), and income from other investments.

Usually Resident Population
Individuals who normally live in New Zealand and were in the country on census night. Excludes both New Zealand residents who are temporarily overseas and visitors from overseas.

A full list of Statistics New Zealand definitions can be obtained from:
http://www.stats.govt.nz/domino/external/pasfull/pasfull.nsf/web/Reference+Reports+Definitions+and+Questionnaires+2001?open

Appendix E: Table E.1: 2001 Census Median Income for Usual Resident Population Count, Bachelors Degree Respondents

Age (Years)	Annual Income ($)																			
	European			Maori			Pacific Island			Asian			Other			Not Elsewhere Included			Total	
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
20	9,177	8,117	8,387	11,251	8,182	8,840	9,167	7,001	7,813	3,473	4,231	3,991	7,501	7,501	7,501	7,501	7,500	6,667	8,300	7,767
21	8,256	8,720	8,566	7,900	9,365	8,929	4,000	8,182	6,667	5,223	4,856	4,968	12,501	7,143	8,500	7,500	12,500	7,501	7,862	8,361
22	12,393	13,048	12,780	9,861	12,977	12,034	12,501	13,611	13,125	7,251	7,076	7,137	10,715	9,375	10,193	12,501	9,375	10,626	11,771	12,325
23	22,928	25,006	24,260	14,297	19,436	17,447	13,929	12,917	13,200	11,030	12,051	11,638	7,501	12,501	8,587	16,667	8,750	15,626	20,752	23,311
24	29,949	30,342	30,215	25,477	26,401	25,979	20,834	25,148	23,677	22,885	18,393	20,477	17,500	8,334	11,667	13,750	24,167	21,501	28,720	28,992
25	33,742	31,700	32,396	28,875	30,482	30,031	27,251	26,945	27,054	25,578	25,796	25,715	23,334	18,750	21,876	28,000	27,501	27,778	32,577	31,149
26	35,949	33,049	34,032	28,572	30,568	29,942	29,167	29,583	29,405	29,891	23,334	25,757	17,500	15,834	15,625	34,001	19,375	29,167	34,937	32,009
27	38,524	34,801	36,187	35,122	31,411	32,690	33,751	30,132	31,452	30,674	26,149	28,047	31,000	14,643	19,500	35,000	31,668	31,251	37,405	33,601
28	42,434	35,766	38,194	34,887	31,001	32,570	34,584	30,456	32,609	33,438	23,629	28,134	28,750	6,251	14,167	28,125	29,167	28,572	40,564	34,312
29	44,441	36,777	39,744	37,286	33,001	34,579	34,424	25,418	31,251	32,301	24,714	27,948	18,000	22,501	19,722	41,667	15,000	32,001	42,434	34,887
30	47,022	36,773	40,993	41,407	31,952	36,096	35,001	32,885	33,553	29,375	20,751	24,567	19,500	17,501	18,929	47,500	31,668	37,500	44,328	34,833
31	50,077	34,894	41,746	43,784	32,501	38,387	34,643	39,615	37,037	30,436	18,158	24,216	31,668	16,876	26,563	25,834	31,668	27,501	47,067	32,785
32	52,712	34,157	43,024	43,334	30,910	37,317	40,455	30,251	33,501	30,080	19,773	24,534	27,501	13,215	20,626	27,501	43,001	35,001	48,608	31,284
33	56,955	33,791	44,213	47,778	35,466	39,154	36,667	37,334	37,000	31,187	18,155	23,150	33,890	16,876	23,500	55,000	38,334	43,572	51,994	30,797
34	58,382	31,528	44,128	44,616	32,242	36,334	42,917	36,000	39,000	30,819	18,224	24,561	23,750	16,072	18,959	52,000	17,500	42,001	52,540	28,785
35	61,114	30,567	43,488	47,500	29,000	34,063	35,834	33,462	34,211	28,276	16,777	21,501	25,834	17,501	22,501	37,500	17,501	27,501	53,591	27,675
36	61,478	29,883	43,548	45,834	31,365	36,728	35,001	33,334	33,959	31,819	19,460	25,037	38,889	16,876	26,667	60,001	27,501	45,001	55,757	27,634
37	61,957	31,940	44,661	44,546	34,118	38,413	37,500	32,334	34,131	29,722	19,875	25,317	37,000	12,501	22,858	41,668	37,500	41,251	55,142	29,631
38	62,563	30,898	45,101	46,563	33,966	38,334	37,000	37,308	37,174	34,404	18,141	25,887	31,001	14,000	24,375	45,001	30,000	35,001	56,214	28,211
39	64,828	32,007	46,304	47,143	33,104	38,864	46,000	37,273	41,501	30,093	20,856	24,718	26,786	18,215	21,667	37,500	28,750	31,250	57,815	30,094
40	64,990	31,945	46,964	44,231	34,862	37,759	34,092	36,667	35,435	34,529	18,360	26,228	35,556	16,251	25,626	46,250	31,250	37,000	59,325	29,801
41	64,798	33,091	46,763	40,501	34,286	36,321	40,834	31,819	35,527	33,903	19,500	25,358	27,501	20,834	23,215	47,500	53,334	48,334	59,587	31,111
42	65,645	33,532	47,518	56,501	35,682	41,766	53,001	21,251	37,500	35,541	21,294	27,223	31,429	18,750	23,572	37,500	35,001	36,667	60,851	31,320
43	65,294	34,489	47,561	47,143	37,656	39,419	38,500	30,626	35,001	31,171	19,167	25,548	38,750	10,834	25,834	29,167	33,334	31,668	59,202	32,160
44	64,323	35,747	48,795	40,500	34,546	36,364	36,154	37,857	36,750	34,269	17,900	26,364	29,167	15,626	22,501	43,751	27,500	36,250	59,502	33,374
45	66,144	36,282	48,868	50,477	44,001	45,556	33,334	27,501	28,929	37,794	19,643	27,194	23,750	13,125	16,751	53,334	35,000	42,501	61,586	33,678

APPENDIX F: CALCULATION OF END OF STUDY DEBT

StudyLink compile information on average course fees borrowed per university student but do not compile information on the total loan per university student. Therefore, needed to calculate an average of CRCs and living costs borrowed. 2002 borrowing figures from StudyLink were used and are assumed to represent average borrowing for that year. Not everyone will borrow this amount; rather, it is intended as a guide to predict repayment estimates.

Method for calculating total loan per university student:

(1) StudyLink provide information on average course fees borrowed per institution type and the number of borrowers per institution type. Multiplying these together gives the total amount borrowed in course fees per institution.

(2) Summing total amount borrowed by institution type gives the total amount borrowed in course fees.

(3) Total amount borrowed in course fees divided by total number of borrowers gives a weighted average of course fees borrowed. This is illustrated in table F.1.

Table F.1: Course Fees Borrowed (2002)

Institution	Number of Borrowers	Average Amount Borrowed	Average Amount Borrowed by Institution Type
University	68,688	$3,966	$ 272,416,608
Polytechnic	39,511	$3,597	$ 142,121,067
PTE	22,950	$5,159	$ 118,399,050
Wananga	3,035	$4,702	$ 14,270,570
College of Education	5,201	$2,638	$ 13,720,238
Total	**139,385**		**$ 560,927,533**
Weighted Average of Course Fees Borrowed per Student:			**$ 4,024.30**

Source: StudyLink - Columns two and three

(1) Taking the average loan per student (all institutions) and subtracting the weighted average of course fees borrowed per student gives the average amount borrowed in CRCs and living costs across all institutions. This is illustrated in table F.2.

(2) One of the assumptions made was that students borrow the same amount in CRCs and living costs regardless of the institution they study at. Therefore, adding average course fees borrowed per university student to average amount borrowed in CRCs and living costs gives total loan per university student. This is given in table F.2.

Table F.2: Total Borrowed per University Student per Annum

	Male	Female
Average Course Fees Borrowed (All institutions)	$4,024.30	$4,024.30
Average Loan Per Student (All Institutions)	$6,677.00	$5,845.00
Average Living Costs and Course Related Costs Borrowed (All institutions)	$2,652.70	$1,820.70
Average Course Fees Borrowed (University)	$4,024.30	$4,024.30
Administration Fee	$50.00	$50.00
Total Loan (University)	**$6,727.00**	**$5,895.00**

The average loan at the end of a three-year degree is $20,181 for a male, and $17,685 for a female.

REFERENCES

Alliance New Zealand (1999). *Up, Up and Away: Up – Lifting the Debt Burden, Up – Increasing Allowances for all Students, Away – Removal of Student Fees.* Wellington: Alliance New Zealand.

Baldwin, G., Gendall, P. & Hoek, J. (1995). 'Secondary Students' Perceptions of Debt and its Effects on Tertiary Enrolment Intentions'. *Marketing Bulletin 6,* 1-11.

Barr, N. (1989). *Student Loans: The Next Steps.* London: Aberdeen University Press.

Barr, N. (2002). 'Funding Higher Education: Policies for Access and Quality', House of Commons, Education and Skills Committee, *Post-16 Student Support,* Sixth Report of Session 2001 – 2002, 19 – 35.

Barro, R. J. (1991). 'Economic Growth in a Cross Section of Countries', *Quarterly Journal of Economics,* 106 (2), 407 – 443.

Barro, R. J. & Lee, J. (1993). 'International Comparisons of Educational Attainment', *Journal of Monetary Economics,* 32 (3), 363 – 394.

Barro, R. J. & Lee, J. (1996). 'International Measures of Schooling Years and Schooling Quality', *American Economic Review,* 86 (2), 218 – 223.

Barro, R. J. & Sala-i-Martin, X. (1995). *Economic Growth.* New York: McGraw Hill.

Becker, G. (1964). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education.* New York: Columbia University Press.

Birks, S. (2003). '*Aggregation, Bias and Confusion - Distortions in Policy'.* A Paper for the New Zealand Association of Economists Conference Auckland, 25-27 June 2003. Available from: http://econ.massey.ac.nz/cppe/papers/abc-d.htm

Birks, S. & Chatterjee, S. (Eds.). (2001). *The New Zealand Economy: Issues and Policies* (4th ed.). Palmerston North: Dunmore Press Ltd.

Brett, C. & Chamberlan, J. (1997, February). '*Generation Debt: Our Students $1.8 Billion Burden'.* North and South, 131. 32-42.

Catalogue of Federal Domestic Assistance (CFDA) (2003). *Federal Direct Student Loans.* Retrieved on 21st October, 2003 from: http://www.cfda.gov/public/viewprog.asp?progid=1038

Choy, W. & Glass, H. (2001). 'Brain Drain or Brain Exchange?' *Treasury Working Paper 1/22.* Wellington: Treasury

Council for Industry and Higher Education (CIHE), (2003). *The Impact of Higher Education on Employment Prospects and Earnings.* London: Graduate Prospects Ltd.

Craven, B., Dick, B., and Wood, B. (1987). Education. In B. Roper and B. Snowden (eds). *Markets, Intervention and Planning*. Chapter 9. Longman

Creedy, J. & Gemmell, N. (2002). 'Publicly Financed Education in an Endogenous Growth Model'. *Treasury Working Paper,* 02/24. Wellington: Treasury.

Cronin, J. & Simmons, S. (Eds.) (1987). *Student Loans: Risks and Realities.* Massachusetts: Auburn House Publishing Company.

David, P. A. (2001). 'Knowledge, Capabilities and Human Capital Formation in Economic Growth'. *Treasury Working Paper, 01/13.* Wellington: Treasury.

Department of Education, Science and Training (2002). Higher Education Contribution Scheme. Retrieved on 29th September, 2003 from http://www.hecs.gov.au/pubs/hecs2003/2003_1.htm

Department of Education, Science and Training (2003). *Higher Education Report for the 2003–2005 Triennium.* Canberra: Commonwealth Department of Education, Science and Training.

Education Directions (1997). *Entitlements in Education: Empowering Student Demand.* Wellington: Education Directions

Ehrhardt, P. (2002). *Does the Student Loan Scheme Impact Differently on Males and Females, and Does this Vary between Different Cultural Groups?* Available from: http://www.nacew.govt.nz/fldPublications/Report%20revisions.doc

Friedman, M. & Friedman, R. (1990). *Free to Choose: A Personal Statement.* New York: First Harvest / Harcourt Brace Jovanovich.

Gove, M. (2003). 'If I'm Paying For Your Education, So Can You', *The Times,* 21 January 2003.

Green, D. (1994). What is Quality in Higher Education? Concepts, Policies and Practice. In D. Greed (ed.), *What is Quality in Higher Education?* (pp. 3-20). Buckingham: Society for Research in Higher Education

Hall, R. E. & Jones, C. I. (1999). 'Why Do Some Countries Produce So Much More Output Per Worker Than Others?' *Quarterly Journal of Economics,* 114 (1), 83 – 116.

Hamilton, P. (1999). 'Women to Retire in Debt – Study'. *The Evening Post*, June 10 1999, p.3.

Hansen, P. (July, 2002). 'Borrowing to Learn or Learning to Borrow? Student Fees and the Student Loans Scheme'. *EcoNZ@Otago,* p. 1-4.

Hansen, J. (1986). 'Student Loans: Are They Overburdening a Generation?', Research Report Prepared for the Joint Economic Committee of the United States Congress.

Hanushek, E. A. & Kim, D. (1995), 'Schooling, Labour Force Quality, and Economic Growth'. *National Bureau of Economic Research Working Paper, 5399.* Cambridge: NBER.

Haveman, R.H. (1976). *The Economics of the Public Sector,* 2nd ed., Wiley, Santa Barbara

Hawke, G. (1988). *Report of the Working Group on Post Compulsory Education and Training.* Wellington: Ministry of Education.

Honey, J. & Pool, I. (1998). 'The Scientific Workforce: Implications for New Zealand's future science infrastructure', *Population Studies Centre, Discussion Papers,* Paper No. 28, University of Waikato.

Human Rights Commission (n.d.) Human Rights Commission website www.hrc.co.nz.

Institute of Charted Accountants of New Zealand (ICANZ) (2001). *Submission to The Associate Minister of Education (Tertiary Education) on: Shaping the system, Second Report of The Tertiary Education Advisory Commission.* Wellington: ICANZ

Inland Revenue Department (2003). *Student Loan Scheme Annual Report: September 2003.* Wellington: Inland Revenue Department.

Inland Revenue Department (2003a). *Student Loan Quarterly Report: September 2003.* Wellington: Inland Revenue Department.

Johnstone, D. B. (2001). *The Economics and Politics of Income Contingent Repayment Plans*. Retrieved on 16th December 2003, from: http://www.gse.buffalo.edu/org/inthigheredfinance/publications_InCntgntln.html

Klenow, P. J. & Rodriguez-Clare, A. (1997). 'The Neoclassical Revival in Growth Economics: Has It Gone Too Far?', *NBER Macroeconomincs Annual* 12, 73 – 103.

Krueger, A., & Lindahl, M. (1999). 'Education for Growth in Sweden and the World', *Swedish Economic Policy Review,* 6 (2), 289 – 339.

Krueger, A., & Lindahl, M. (2001). 'Education for Growth: Why and for Whom?' *Journal of Economic Literature,* 39, 1101 – 1136.

LaRocque, N. (2003). 'Student Loan Scheme – It's a Good Deal'. *National Business Review,* 8 Aug 2003.

Layard, P. & Walters, A. (1978). *Microeconomic Theory.* London: McGraw-Hill.

Lucas, R. E. Jr. (1988). 'On the Mechanics of Economic Development', *Journal of Monetary Economics,* 22(1), 3 – 42.

McLaughlin, M. (2003). *Tertiary Education Policy in New Zealand.* Fulbright New Zealand.

McMahon, W. (1984). 'Why Families Invest in Education', in S Sudman and M Spaeth (eds), *The Collection and Analysis of Economics and Consumer Behaviour Data,* 75-91, Illinois: University of Illinois Press.

Maani, S. (1997). *Investing in Minds: The Economics of Higher Education in New Zealand.* Wellington: Institute of Policy Studies.

Mankiw, N. G., Romer, D., and Weil, D. N. (1992). 'A Contribution to the Empirics of Economic Growth', *Quarterly Journal of Economics,* 107 (2), 407 – 437.

Massey University (1989). *Massey University Calendar 1989.* Palmerston North: Massey University.

Massey University (1990). *Massey University Calendar 1990.* Palmerston North: Massey University.

Massey University (2003). *Massey University Calendar 2003.* Palmerston North: Massey University.

Ministerial Consultative Group (MCG) Report (1994). *Funding Growth in Tertiary Education and Training.* Wellington: Ministry of Education.

Ministry of Education (2003). *A Guide to Tertiary Education Funding and A Guide to Student Enrolment for Tertiary Education Providers 1 January 2003*. Wellington: Ministry of Education.

Ministry of Education (2002). *Student Loan Scheme Annual Report, Incorporating the Financial Statements to 30 June 2002.* Wellington: Ministry of Education.

Ministry of Education (1993). *Funding Programme for Tertiary Education – News Release,* May 1993, Wellington: Ministry of Education.

Ministry of Education (1989). *Learning for Life: Education and Training Beyond the Age of Fifteen – Policy Decisions.* Wellington: Ministry of Education.

Ministry of Women's Affairs (1999). *Briefing to the Incoming Minister.* Wellington: Ministry of Women's Affairs.

Mishan, E. (1969). 'Some Heterical Thoughts on University Reform', *Encounter,* 32(3), 3 – 15.

National Advisory Council on the Employment of Women (n.d.). National Advisory Council on the Employment of Women website. www.nacew.govt.nz

New Zealand Business Roundtable (1997). *Submission on A Future Tertiary Education Policy for New Zealand: Tertiary Education Review.* Wellington: NZBR.

New Zealand Cabinet (n.d.). New Zealand Cabinet website. www.executive.govt.nz

New Zealand Statutes (1975). *Statistics Act.* Wellington: Government Printer under authority of the New Zealand Government

New Zealand Statutes (1989). *The Education Act.* Wellington: Government Printer under authority of the New Zealand Government.

New Zealand Statutes (1990). *New Zealand Bill of Rights Act.* Wellington: Government Printer under authority of the New Zealand Government

New Zealand Statutes (1992). *The Student Loan Scheme Act.* Wellington: Government Printer under authority of the New Zealand Government.

New Zealand Statutes (1993). *Human Rights Act.* Wellington: Government Printer under authority of the New Zealand Government

New Zealand Statutes (2001). *Human Rights Amendment Act.* Wellington: Government Printer under authority of the New Zealand Government

New Zealand University Students' Association (n.d.). New Zealand University Students' Association website. www.students.org.nz

New Zealand University Students' Association (2003). *Women and Student Loans: Claim Under the Human Rights Act 1993.*Wellington: New Zealand University Students' Association.

New Zealand University Students' Association (2003a). *Questions on Women and Student Loans: Claim Under the Human Rights Act 1993.* Wellington: New Zealand University Student's Association.

New Zealand Vice-Chancellor's Committee (1999). *Graduate Destinations Survey, 1999.* Available from: www.nzvcc.ac.nz.

Norton, A. (2003). 'Holes in the Condom Theory of HECS'. *The Australian*, 3 September 2003.

OECD (2000). *Education at a Glance: OECD Indicators.* Paris: OECD

OECD (1993). *Economic Surveys 1992 – 1993*. Available from www.oecd.org.

Parr, B. (1995). *The Tertiary Education Participation Study: An Investigation of the Plans of Seventh Formers and their Outcomes.* Auckland: Auckland Uniservices Ltd.

Payne, J., and Callender, C. (1997). *Student Loans. Who borrows and why?* London: Policy Studies Institute.

Psacharopoulos, G. (1981). 'Returns to Education: An Updated International Comparison', *Comparative Education,* 17(3), 321 – 341.

Psacharopoulos, G. (1985). 'Returns to Education: A Further International Update and Implications', *Journal of Human Resources,* 20(4), 583 – 604.

Psacharopoulos, G. (ed.) (1987). *Economics of Education: Research and Studies.* Oxford: Pergamon Press.

Psacharopoulos, G. (1994). 'Returns to Investment in Education: A Global Update', *World Development,* 22(9), 1325 – 1343.

Public Questions Committee (2000). *Submission to the Inquiry into Student Fees, Loans, Allowances, and the Overall Resourcing of Tertiary Education.* Available from www.casi.org.nz/submissions/smstfeesloans.html

Romer, D. (2001). *Advanced Macroeconomics.* 2nd ed. New York: McGraw Hill.

Romer, P. (1986). 'Increasing Returns and Long Run Growth', *Journal of Political Economy,* 94 (5), 1002 – 1037.

Shultz, T. (1961). 'Investment in Human Capital'. *American Economic Review,* 51, 1 – 17.

Sianesi, B. & van Reenen, J. (2002). 'The Returns to Education: A Review of the Empirical Macroeconomic Literature', *The Institute For Fiscal Studies Working Paper 02/05.* London: Institute for Fiscal Studies and University College London.

Solow, R. M. (1956) 'A Contribution to the Theory of Economic Growth', *Quarterly Journal of Economics,* 70 (1), 65 –94.

Solow, R. M. (1957). 'Technical Change and the Aggregate Production Function', *Review of Economics and Statistics,* 39 (3), 312 – 320.

Sommer, J. (1995). *The Academy in Crisis: The Political Economy of Higher Education.* London: The Independent Institute.

Spence, M. (1973). 'Job Market Signalling', *Quarterly Journal of Economics, 87,* 355 – 374.

Stanley-Clarke, N. (2000). *Returning to Paid Work: Mothers and the Impact of Student Loan Debt.* A thesis presented in partial fulfilment of the requirements for the degree of Masters of Social Work, Massey University. Palmerston North: Massey University.

Statistics New Zealand (n.d.) Statistics New Zealand website www.stats.govt.nz.

Statistics New Zealand (2001). Census 2001 Income by Highest Qualification.

Swan, T. W. (1956). 'Economic Growth and Capital Accumulation', *Economic Record,* 32, 334 – 361.

Tertiary Education Advisory Commission. (n.d.). Tertiary Education Advisory Commission website. www.teac.govt.nz

Topel (1999). 'Labor Markets and Economic Growth', in Ashenfelter, O. and Cared, D. (eds.), *Handbook of Labor Economics,* 3, 2943 – 2984.

Treasury (1987). *Government Management: Brief to the Incoming Government 1987.* Wellington: Treasury

Treasury (1999). *Towards Higher Living Standards for New Zealanders: Briefing to the Incoming Government.* Wellington: Treasury.

Treasury (2001). 'Human Capital and the Inclusive Economy'. *Treasury Working Paper 01/16.* Wellington: Treasury.

Warner, A. (1999). *The New Zealand Student Loan Scheme: Analysis and Options for Reform.* Auckland: Student Assistance Task Force, University of Auckland.

LIST OF STUDENT PAPERS

No.1 R. Bate and K. S. Birks, *Fact or Fiction: Five Issues About Women's Employment in New Zealand*, February 1998.

No.2 D. Jenkins and K. S. Birks, *An Economic Assessment of the Priority Criteria for Elective Surgery in New Zealand*, August 1998.

No.3 S. M. Summers and K. S. Birks, *The Gender Wage Gap in New Zealand: Theory and Evidence*, July 2000.

No.4 R. M. Hodgson and K. S. Birks, *Statistics New Zealand's Definition of Family, its Implications for the Accuracy of Data and Effectiveness of Policy Targeting*, March 2002.

No.5 R. Baxter and K. S. Birks, *The Student Debt Debate: An Economic Investigation of the Issues*, May 2004.