

HIGHER EDUCATION DYNAMICS

# Cost-sharing and Accessibility in Higher Education: A Fairer Deal?

Pedro N. Teixeira, D. Bruce Johnstone, Maria J. Rosa  
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COST-SHARING AND ACCESSIBILITY  
IN HIGHER EDUCATION: A FAIRER DEAL?

## HIGHER EDUCATION DYNAMICS

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*The titles published in this series are listed at the end of this volume.*

# COST-SHARING AND ACCESSIBILITY IN HIGHER EDUCATION: A FAIRER DEAL?

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## TABLE OF CONTENTS

List of Contributors	vii
Preface	xiii
Introduction D. BRUCE JOHNSTONE, PEDRO TEIXEIRA, MARIA JOÃO ROSA AND HANS VOSENSTEYN	1
Strengthening Consumer Choice in Higher Education BEN JONGBLOED	19
Cost-sharing and the Cost-effectiveness of Grants and Loan Subsidies to Higher Education D. BRUCE JOHNSTONE	51
Income Related Student Loans: Concepts, International Reforms and Administrative Challenges BRUCE CHAPMAN	79
Access to Higher Education in Britain: The Impact of Tuition Fees and Financial Assistance CLAIRE CALLENDER	105
The Changing Nature of Public Support for Higher Education in the United States DONALD E. HELLER	133
The Canadian Experiment in Cost-sharing and its Effects on Access to Higher Education, 1990–2002 ROSS FINNIE AND ALEX USHER	159
Student and University Funding in Devolved Governments in the United Kingdom MAUREEN WOODHALL AND KEN RICHARDS	189
Student Financing in the Netherlands: A Behavioural Economic Perspective HANS VOSENSTEYN AND UULKJE DE JONG	213

A Broader Church? Expansion, Access and Cost-sharing in Portuguese Higher Education PEDRO TEIXEIRA, MARIA JOÃO ROSA AND ALBERTO AMARAL	241
The German Tuition Fee Debate: Goals, Models and Political Implications of Cost-sharing FRANK ZIEGELE	265
Accessibility and Equity in a State-funded System of Higher Education: The French Case THIERRY CHEVAILLIER AND JEAN-JACQUES PAUL	295
Access to Higher Education Within a Welfare State System: Developments and Dilemmas PER OLAF AAMODT	317
Conclusion PEDRO TEIXEIRA, D. BRUCE JOHNSTONE, HANS VOSSENSTEYN AND MARIA JOÃO ROSA	343

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## INCOME RELATED STUDENT LOANS: CONCEPTS, INTERNATIONAL REFORMS AND ADMINISTRATIVE CHALLENGES

### 1. INTRODUCTION

A critical aim of a higher education financing system is to help ensure that there are minimal barriers to the participation of talented but poor students. To this end governments of mature economies typically intervene, either through the provision of taxpayer subsidies covering all tuition costs and some proportion of student living expenses, or through public sector involvement in loan programmes. This chapter begins by explaining, with reference to capital market ‘failure’, why it is that some form of government intervention is necessary to minimise problems of access.

The most common form of financing assistance involves governments offering access to guaranteed commercial bank loans. Interventions of this type address part of the capital market problem but, as explained in section 4, the approach does not offer a comprehensive solution.

A relatively new form of government loan intervention (in application terms), known as income related loans (IRLs), is examined conceptually in section 5.<sup>1</sup> This approach involves former students repaying debt contingent on their future incomes, meaning that capacity to pay is given weight. Policies of this type are now in place in several countries, and their experiences are considered briefly in section 6. A cautionary note is offered in this section designed to highlight implementation problems of particular significance for the adoption of IRLs in developing countries.

### 2. THE CASE FOR GOVERNMENT INTERVENTION: CAPITAL MARKET ‘FAILURE’

To understand what, if any, might be the correct forms of public sector higher education financing involvement, it is useful to ask: what problems would arise in the absence of government intervention? This could involve the following arrangements. Assuming that the public sector accepted the existence of externalities from higher education, there is thus a resource allocative efficiency case for the provision of taxpayer-financed subsidies equal to the presumed marginal value of the spillovers.

In the absence of intervention this could be achieved by the government providing the appropriate level of finance to universities and allowing the institutions to charge up-front fees to cover remaining costs, assumed in this

approach to be equivalent to the marginal private benefits of higher education attendance (see Chia 1990; and Chapman 2004).

However, there are major problems with such an arrangement, first raised by Friedman (1955). The argument can be best understood with reference to the nexus between labour markets and human capital investments, the essential point being that educational investments are risky, because (Barr 2001; and Palacios 2004):

- (i) enrolling students do not know fully their capacities for (and perhaps even true interest in) the higher education discipline of their choice. This means in an extreme they cannot be sure that they will graduate and, in Australia for example, around 25 per cent of those enrolling end up without a qualification;
- (ii) even given course completion, students will not be aware of their likely relative success in the area of study. This will depend not just on their own abilities, but also on the skills of others competing for jobs in the area;
- (iii) there is uncertainty concerning the future value of the investment. For example, the labour market – including the labour market for graduates in specific skill areas – is undergoing constant change. What looked like a good investment might turn out to be a poor choice when the process is finished; and
- (iv) many prospective students, particularly those from disadvantaged backgrounds, may not have much information concerning graduate incomes, due in part to a lack of contact with graduates.

These uncertainties are associated with important risks since if graduate future incomes turn out to be lower than expected, the individual is unable to sell part of the investment to re-finance a different educational path, for example. This is critical in an understanding of capital market failure, and explains why banks will not be interested in unsecured loans for higher education investments, compounded by the fact that there is no collateral to be sold in the event of default. And even if it were possible for a third party to own and sell human capital, its future value might turn out eventually to be quite low.

These issues are apparently understood by the governments of most countries because there are typically public sector loan interventions. Until recently, government intervention almost exclusively took the form of public sector guarantees for commercial bank provision of education loans, and over the last decade or so has increasingly involved IRLs. While quite different in practice, both approaches are motivated in part by the recognition that left to themselves, higher education markets will function poorly.

An assumption implicit in the above discussion is that the capital market issue is important enough to mean that, in the absence of government intervention, access to higher education will be restricted significantly. But the borrowing problem takes on a serious form only if it is actually the case that there are constraints for individuals in need of bank financing. There is evidence concerning the extent to which access to credit limits human capital investment, and it takes several forms.

One concerns the argument that if there are no borrowing constraints with respect to the financing of skill investments, there should also be no relationship between family income and an individual's level of education. This turns out to be a difficult research assignment because of the complicated relationships between family income and its likely association with educational choice factors. These include the quality of compulsory schooling, inherent ability, educational motivation and the transfer of values between parents and children.

There is now considerable empirical evidence on this issue (e.g. Cameron and Heckman 2001). While it suggests that family factors are critical to an understanding of higher education enrolment outcomes, for a minority of potential students a lack of access to capital seems still to be an important factor.

The second type of evidence provided in analyses of credit constraints asks whether or not there is a relationship between family income and changes in the private costs and benefits of college. Kane and Rouse (1999) explore these issues with respect to both rates of return to education and the effects of increases in tuition. The data from different exercises imply the existence of credit constraints.

It is important to recognise that the data concerning the access of the poor to higher education are typically collected in an environment in which there are policy initiatives designed to minimise the problem. This suggests that in the absence of such government intervention, credit constraints would be likely to have been found to be more important, so long as such policies have some effect.

Overall, it appears that there are many factors contributing to children from poorer families being less likely to attend higher education, but this stylised fact is not sufficient evidence for the existence of credit constraints. However, there is now considerable research considering the influence of non-family background factors on access. In summary, borrowing problems have acted to restrict higher education enrolments for a significant minority of prospective students.

On this issue Bruce Johnstone has pointed out in private correspondence (November 2004):

There is no country where the private capital market provides loans to all students without the requirement either of: (a) a credit worthy co-signatory; or (b) a credit worthiness test of the borrower himself/herself based upon academic credentials or a high status/highly competitive academic program and employment future. Such cases, at least by my definition, are not 'generally available' ... In the situations where many or most students have to borrow ... *higher educational accessibility demands governmental intervention to absorb the risk that the private capital market cannot and should not be expected to absorb.*

### 3. THE BENEFITS AND COSTS OF GOVERNMENT-GUARANTEED BANK LOANS

#### 3.1. *The Benefits for Commercial Banks*

Given that credit constraints have real impacts on access to higher education there is a case for government intervention in higher education financing. A possible solution used in many countries, such as the US and Canada (Finnie and Schwartz

1997), involves higher education institutions charging up-front fees in conjunction with government-guaranteed bank loans being made available to students, with amounts available being determined by means-testing of family incomes. Government assistance typically takes two forms: payment of interest before a student graduates; and guarantee of repayment of the debt to the bank in the event of a default. Arrangements such as these are designed to facilitate the involvement of commercial lenders, and the fact that they are common suggests their usefulness.

This form of assistance addresses an important aspect of the capital market problem for lenders. With this approach no collateral is required, and neither will lenders be concerned with the uncertainties associated with future incomes of students; both problems are resolved because the public sector assumes the lenders' risks and costs of default. However, government assistance of this type is associated with other problems.

### *3.2. The Costs for Students*

Government-guaranteed bank loans address the higher education financing problem for lenders, but there are two problems for borrowers, students. They are that loans requiring repayment on the basis of time, rather than capacity to pay, are associated with both default-risk and the prospect of future financial hardships. These issues might usefully be analysed separately in the categories of insurance and consumption-smoothing.

The insurance issue is that repayments in most student loan schemes are fixed with respect to time and are thus not sensitive to an individual's future financial circumstances (Barr 1989). Borrowers who default face damage to their credit reputation and thus eligibility for other loans, such as for a home mortgage (Chapman 1997). Thus in anticipation of potential credit reputation loss, some prospective students may prefer not to take the default-risk of borrowing because of the high potential costs. The possible importance of this form of 'loss aversion' is given theoretical context in Vossensteyn and De Jong (in this volume).

It is instructive to note the evidence concerning which students default. Dynarski (1994) used the National Post-secondary Student Aid Study and found strong evidence that earnings after leaving formal education is a strong determinant of default. Moreover, borrowers from low income households, and minorities, were more likely to default, as were those who did not complete their studies. An important issue from these findings is that some poor prospective students might be averse to borrowing from banks because of the risk of default.

Even so, it would be an exaggeration to suggest that students with bank loans have no alternative other than default in unanticipated circumstances in which they are unable to meet their repayment obligations. In the US, for example, borrowers are able to defer loan repayments if they are able to demonstrate that their financial situation is unduly difficult, and in some cases this might lead to loan forgiveness. But there would generally be no expectation that a bank loan repayment takes into account capacity to repay.

A related problem for students from bank loans concerns possible consumption difficulties associated with fixed repayments. Given the uncertainties associated with the path of future income, a fixed level of a debt payment increases the variance of disposable (after debt repayments) incomes. This raises the possibility of students experiencing repayment hardships if future financial circumstances turn out to be poorer than expected. Finnie and Usher (in this volume) offer useful empirical evidence on repayment hardships, noting that between 20 and 35 per cent of former students report 'difficulties in repayment' of Canada Student Loans.

A final possible practical problem of government-guaranteed bank loans relates to the fact that in many countries loans of this type are typically not universally available, or available loan levels are limited.<sup>2</sup> That is, usually loan provision is means-tested on the basis of family income.

This raises the important issue explained above and noted by Carneiro and Heckman (2002), concerning the role of the sharing of financial resources within families. Some students will be unable to access necessary levels of borrowing and will face the same credit market failure as they would in the absence of a government guarantee of a bank loan. That is, means-testing with loans means that some prospective students will have difficulties accessing the system.

#### 4. THE COSTS AND BENEFITS OF IRLS

##### *4.1. The General Case for IRLs Compared to Bank Loans: Default-protection and Consumption-smoothing*

There are two advantages of IRL schemes compared to government-guaranteed bank loans, both arising from repayment obligations being based on the borrower's capacity to repay. The first is that a properly designed IRL has as its major characteristic complete default-protection for borrowers; a student can't go broke because of an inability to meet repayments. Thus IRLs have the capacity to solve the essential capital market failure for human capital investments.

Second, IRLs have the potential to significantly diminish debt repayment difficulties, again because obligations are reduced or eliminated in future periods of financial adversity. That is, IRLs provide consumption-smoothing.

A particular advantage of consumption-smoothing is pertinent to an understanding of US higher education financing policy. It is that some graduates with very high levels of bank debt will be forced to undertake employment associated with relatively high earnings in order to be able to repay comfortably their college debts. A concern that this would adversely affect the supply of graduates for low pay public interest employment encouraged the Clinton administration to introduce an IRL option in the US in 1993.<sup>3</sup>

##### *4.2. IRLs and 'Debt Aversion'*

The relative advantages of IRLs noted above raise for discussion the issue of 'debt aversion', the notion that individuals from low socio-economic backgrounds are

more concerned with being in debt because their parents have had traumatic experiences from having bank loans. The point is considered in detail in Callender (in this volume).

But with IRLs there is a different interpretation of debt aversion and its probable connection with family background. This is that one aspect of poor students' concern with debt is likely to be related to the nature of repayment. Specifically, bank loans require borrowers to repay according only to time, and thus give no weight to students' future capacity to pay. There are two critical aspects of the nature of such repayment obligations, both related to the uncertainties of future income streams, and considered in detail in section 3 above: lack of protection against default, and the hardship costs of not having consumption-smoothing.

It matters that these alternative interpretations of the nature of debt aversion predict what seems to be the case: poor students are more likely to avoid bank loans. But they also suggest that an IRL has the potential to diminish significantly the prospect of debt aversion. It is critical that discussion of the phenomenon recognises that bank loans and IRLs have fundamentally different implications in the area, because of the relative weight given to capacity to repay. The bottom line is that IRLs offer a higher potential for both default-insurance and consumption-smoothing.

#### *4.3. Types of IRLs*

These generic advantages of IRLs notwithstanding, it is important to recognise that there are different forms of income related financial instruments, and, even within genres, there are very distinct ways in which they can be made operational. The nature of these differences and their effects are now examined.

Income related financing takes several broad forms known as: IRLs with risk-pooling; IRLs with risk-sharing; graduate taxes; and human capital contracts. Within these broad categories there are myriad designs differentiated by parameters such as: the level of the charge; the percentage of income to be repaid; interest rates; forgiveness of the debt; and income thresholds. There are many hybrids of IRLs that fit within the broad categories uneasily.

##### *4.3.1. IRLs with Risk-pooling*

An IRL with so-called 'risk-pooling' is one with a fixed total debt for members of cohorts involved. That is, students signing on to the debt repayment are also agreeing to take some financial responsibility for the unpaid debt of others.

Thus while risk-pooling IRLs offer an insurance system, it is one with premiums adjusted ex post to take into account the repayment experience of others in the borrowing cohort. This means that borrowers with high lifetime incomes, the 'winners', will repay the balance unpaid by those with low lifetime incomes, the 'losers'. That is, the effective interest rate for successful investors in human capital will be adjusted to a level sufficiently high to compensate for the extent of non-payment of others, either because members of the latter group default fraudulently or simply experience low lifetime incomes.

In essence risk-pooling IRLs transfer borrowing costs to non-defaulters. This apparently is what happened with respect to the Yale Plan, now examined.

The Yale Plan,<sup>4</sup> introduced at Yale University in the 1970s but since discontinued, is the best-known example of a full risk-pooling IRL. Nerlove (1975) raises some serious operational problems with arrangements of this kind. His essential motivation was to explore the behavioural consequences of such schemes, with particular reference to two major micro-economic issues: adverse selection and moral hazard.

Nerlove suggested that the design characteristics of a risk-pooling IRL encourage a form of adverse selection. Specifically, since such schemes are designed to be revenue-neutral (i.e. not involving any subsidies from the lending agency) individuals expecting to be winners (future high income earners) have incentives to avoid being involved. On the other hand, those potential borrowers with expectations of relatively poor future prospects have an incentive to take such loans, because if their expectations are met, they will have their repayments subsidised by winners.

There is thus a clear implication that the cohort of students willing to borrow from a risk-pooling IRL will be made up of individuals expecting their future relative earnings to be low on average. For a university such as Yale, hoping to attract the highest quality students, the scheme has the perverse effect of encouraging the ablest students to seek enrolment at universities offering non-IRL financial assistance, such as subsidised bank loans.

The second problem for risk-pooling IRLs, also identified by Nerlove, involves moral hazard, and relates to the behaviour of debtors. Since the scheme in effect taxes the successful on the basis of declared income, the incentive is for borrowers to behave in ways that minimise repayments. This could take the form of choosing jobs with relatively high remuneration being in non-salary form.

This form of moral hazard behaviour increases the debt of those with measurably high incomes, even if their total remuneration is relatively low. That is, there is a built-in incentive for risk-pooling IRLs not to achieve high levels of protection for unsuccessful debtors.

Raymond and Sesnowitz (1976) explore the extent to which repayment obligations from those involved in risk-pooling IRLs might be considered burdensome. Through a series of simulation exercises they found that under most sensible parameters of potential repayment, IRLs of these types would still leave most borrowers better off in terms of the effect of the repayments on rates of return to higher education.

However, even if graduates are 'better off' than not undertaking higher education in terms of retaining average high rates of return, the moral hazard point with respect to the labour/leisure choice remains. Responding to Nerlove's lament concerning the paucity of empirical evidence on the potential size of the behavioural effects from risk-pooling IRLs, Feldman (1976) conducted a series of simulations of the effects of current versus IRL financing arrangements with respect to different medical speciality incomes. Under a range of plausible assumptions concerning labour supply, his major finding is that there would be a 6.6 per cent fall in weeks

worked, equivalent to an effective overall loss of about 725 new physicians in the US per year (in the mid-1970s) if current loans were converted into a risk-pooling IRL.

The issues of adverse selection and moral hazard raised by Nerlove constitute serious challenges for those advocating risk-pooling IRLs as a solution to capital market failure and as an answer to the problems associated with government-guaranteed bank loans. This seems to be particularly likely with respect to the ex post implications of risk-pooling IRLs. Once graduates begin to earn relatively high incomes it should be expected that there would be some behavioural responses to what are effectively high levels of marginal tax rates.

A bottom line with respect to both moral hazard and adverse selection is that risk-pooling IRLs do not seem to be workable. There is an additional issue concerning the efficacy of the Yale Plan, concerning collection, considered in further detail below.

Barr (2001), Palacios (2004) and Chapman and Nicholls (2003), point out that there are several important conditions that have to be met in order for an IRL to be workable. The basic points are that the collection agency has to have the capacity to accurately assess a former student's lifetime incomes, and to be then able to deduct debts in accordance with these incomes in a low-cost way. This suggests that private institutions – such as Yale University – are likely to face major difficulties, and these may be significant enough to render non-government schemes unworkable.

That is, in principle, while an IRL with risk-pooling could be operated within or outside the public sector, the public sector has the distinct advantage of administrative efficient collection of debt using the internal revenue service (or tax office). This is likely to be critical for the operation of such schemes, since the probability of default of a risk-pooled IRL will determine in part how much winners compensate losers and thus reflects the extent of unequal distributions of repayments between different borrowers. Collection of IRLs, and more generally IRL design, is a critical matter for policy.

#### *4.3.2. IRLs with Risk-sharing*

A different form of IRLs is known as 'risk-sharing'. With risk-sharing IRLs borrowers are obligated to repay a maximum amount in present value terms but the extent of the obligation is unrelated to the actual incomes received, and thus the repayment levels, of others involved in the scheme. That is, the risks of non-repayment – the costs of income contingency – are shared with taxpayers, not other members of the borrowing cohort.

That is, compared to a risk-pooling system, it is less likely for a risk-sharing IRL to repel students expecting to do very well in the labour market, and less important for those eventually repaying to attempt to avoid the obligation if the number in the cohort 'defaulting' turns out to be higher than expected.

The important point is that, unlike with respect to a risk-pooling IRL, with risk-sharing IRLs there are no downside risks for any of the borrowers. That is, if the government receives lower than expected repayments there are no associated penalties for borrowers,<sup>5</sup> nor are there any rewards to borrowers if the opposite turns

out to be the case. The advantage of this type of IRL is the avoidance of some part of the adverse selection and moral hazard costs associated with risk-pooling IRLs.

The examples of risk-shared IRLs best known are those initiated in Australia in 1989, New Zealand (1991), and to be implemented in the UK in 2005 and Thailand in 2006. But even within this category, it is clear that the forms of IRLs in these countries differ in important dimensions and accordingly with respect to their likely economic and educational consequences. With this important caveat in mind, there are still significant broadly based theoretical insights available with respect to risk-sharing IRLs.

As conceptual background, it is useful to understand that before the 1990s research on the return to education or human capital investments had proceeded in two directions. Labour economists were building increasingly sophisticated models based on expected utility maximisation (e.g. Levhari and Weiss 1974; Eaton and Rosen 1980; and Paroush 1976). Most researchers, however, continued to use rates of return calculations (e.g. Psacharopoulos 1973, 1985) with scant attention being paid to the private and social risks associated with the investment.

Chia (1990) attempted to combine these two strands of research by developing a simple framework whereby the risks associated with investment in higher education can be readily incorporated into conventional measures of profitability, such as the net present value. Coming at the issue of rates of return in this way allowed Chia to develop a framework robust enough to calculate the benefits to the borrower of risk-sharing IRLs, now explained.

The essence of Chia's work was to use an expected utility framework to estimate an uncertainty premium, which was then used to adjust the net present value resulting from investment in higher education. This allowed him to quantify the 'insurance content' of an ex post income contingent fee scheme (of the risk-sharing variety) and to compare this calculation with the payment of fees with no insurance for both given levels of uncertainty and with respect to a range of risk aversion.

Chia found that if individuals are uncertain of their ability (and thus face greater uncertainty in potential income streams as a result) they would prefer an income contingent fee scheme to paying up-front fees. The 'insurance content' of the income contingent scheme could, in some instances, amount to more than the equivalent of a year's fees. On the other hand, if individuals are fully aware of their abilities, then those with high abilities would prefer to pay their fees up-front while the less able would opt for the income contingent scheme. It should be recognised that there are, of course, forms of uncertainty unrelated to an individual's ability, such as the future state of the labour market, meaning that even those fully aware of their individual capacities will not be able to predict their lifetime incomes.

Grout (1983) presented a version of the Arrow (1973a, 1973b) discrimination model with imperfect information and showed that "... an element of income contingency will offset to some extent the misallocation of educational resources resulting from imperfect expectations" (p. 32). Similar to Chia's result concerning ability, he showed that the benefits of risk-sharing IRLs are greater the less certain individuals are of their future incomes and the greater is risk aversion. From Grout's simulation exercises IRLs seem to have the most propitious leverage in terms of the reduction of the costs of uncertainty. That is, the effects of IRLs on welfare even

given a significant range of risk aversion are relatively small compared to their benefits in terms of minimising the effects of uncertainty.

Quiggin (2003) extended these results, offering analysis focused on the notion that risk-sharing IRLs provide a mixture of consumption-smoothing benefits and insurance against the uncertain outcomes of risky educational investments. Using a conventional two-period modelling approach with risk aversion and imperfect information, Quiggin establishes that this approach will enhance welfare relative to the alternative of up-front fees yielding the same revenue in present value terms.

Quiggin also demonstrates that the form of IRL with the best welfare properties has a threshold below which no repayments are required. However, there is a critical trade-off with respect to the design of an IRL, at least with respect to risk-neutral individuals: there is an insurance effect, which is welfare improving, and there is a subsidy effect, which is welfare reducing. This promotes for policy consideration the critical role played by the choice of collection parameters: if they are insufficiently generous there will be inadequate insurance provision; but if they offer considerable protection the associated subsidies will be too high. This is a critical trade-off for the design of such schemes.

Moen (1998) analyses variants of risk-sharing IRLs using an equilibrium search model of the Diamond–Mortensen–Pissarides variety. His analysis begins with the familiar point that human capital investments are irreversible, and he shows that, given this irreversibility, investments will be less than optimal unless ex post those investing are able to share the costs of job search.

The overall conclusion from these somewhat different modelling approaches is the same: an IRL risk-sharing system is in general welfare increasing compared to either bank loans or up-front fees. The greater both risk aversion and uncertainty are, the stronger are these results. Moreover, these analyses focus on economic efficiency with the conclusions implicitly giving no weight to the potential for IRLs of this type to contribute propitiously in equity terms. This suggests that the relatively high welfare properties of risk-sharing IRLs could be argued to understate the overall social benefits of these types of approaches to higher education financing.

There is a caveat to the general thrust of the analytical results. This is that the greater the insurance protection offered (through, for example, having a very high first income threshold of repayment of, or a very low nominal rate of interest on, the debt), the less likely is an IRL to achieve a social optimum. This is the result of risk-sharing arrangements offering relatively higher taxpayer subsidies as a trade-off to the provision of default-protection for borrowers.

#### 4.3.3. *Graduate Taxes*

A very different form of an income related financing instrument, and one that has yet to be implemented, is known as a graduate tax (GT). A GT takes the following broad form.

Graduates (or former students, more generally) agree to repay a proportion of their incomes, say 2 per cent per year, for a given length of time (which could be as long as a lifetime). Thus they share the essential ingredients of both risk-pooling and

risk-sharing IRLs, which is that 'loan' payments are made in such a way as to ensure default-protection. They can be designed to raise considerable revenue, even at the same time as their influence on returns to higher education are not affected significantly, a point made by Lincoln and Walker (1995) through some plausible simulations.

However, there are significant differences between GTs and IRLs. The most obvious is that the former is not based on cost recovery. This can lead to the so-called 'Mick Jagger' problem, as explained in Barr (2001). This is that the lead singer of the Rolling Stones rock band studied for a short time at the London School of Economics. If a GT was applied to his income for life (and if it could be collected), Mr Jagger's payments would massively exceed the direct costs of his higher education, even by several hundred-fold. The example is very extreme, but serves to illustrate that the revenue collected can be seen to be excessive in many cases, and only poorly related to the benefits of higher education.

A second and related difference is that for very high earners the fact that the GT is ongoing, that is, an addition to income tax, suggests there might be much higher work disincentives from this form of payment than there would be for IRLs involving cost recovery (Barr 2001). This is a variant of the moral hazard problem associated with risk-pooling IRLs.

Third, the revenue from GTs will not reflect marginal cost pricing rules, and nor do the resources received have any resource allocative implications – instead they are essentially a device designed to raise money from the direct beneficiaries of higher education. The incapacity of GTs to influence economic efficiency is highlighted in both Barr (2001) and Greenaway and Haynes (2003) as a major reason to prefer different forms of income contingent instruments, such as a risk-pooling IRL.

A fourth point concerning the efficacy of a GT is also related to the pricing rules, and has a critical administration challenge. That is, should there be any attempt to have repayments reflect the time and other higher education resources absorbed by the student? While this is a general issue for courses of markedly different length, the point applies also to the issue of whether or not identical repayment rates should apply for students enrolling in one course only, or not graduating, compared to those completing a degree (or several degrees).

Finally, unlike an IRL, a GT does not offer the potential for the government to sell debt obligations in the private capital market, because with a GT there is no clear mechanism to calculate graduates' unpaid financial obligations. However, the extent to which this matters is not obvious, since the benefits to a government of privatising IRL debt are likely to be more apparent than they are real. The issue warrants closer inspection.

#### *4.3.4. Human Capital Contracts*

There has been recent interest in whether private firms could be involved in financial arrangements in which payments are tied to the borrower's income. Proponents of this approach question the notion that only the public sector should be

involved in sharing the risk of IRL schemes. It is argued by some that such private involvement could take place without public sector involvement.

The most common incarnation of the above idea is a contract that specifies a percentage of income to be paid over a predetermined time period by students benefiting from income and tuition support. With such an arrangement the instrument takes a form similar to a GT (with the additional twist that the percentage is determined by the amount borrowed by students). Then a high earner would pay more than was borrowed and a low earner would pay less. From the investor's perspective, the loan resembles a significant investment in the borrower's earning power. Arrangements of this type are known as human capital contracts (HCCs).

Palacios (2004) argues that these instruments would promote efficiency in the higher education market by increasing the information available about future earnings with respect to different universities and fields of study. The contracts would therefore reflect market expectations of students' future earnings, thereby creating an observable 'market value' for different types of education or different cohorts of individuals. He adds that this information would also create an instrument for measuring the value of the insurance implicit in IRLs, thereby introducing a market measure of the extra amounts that governments should ask students to pay to compensate the losses on an IRL.

Recognising the possibility that using loans whose payments are tied to income may mitigate income risk, there have been a few attempts to understand the personal financial impacts from the borrower's perspective. Rather than using aggregate data to infer the needs of borrowers, these studies have applied financial decision theory to the market for loans.

Carver (2004) creates a model of individual choice for loans to explore preferences among different loan alternatives. In the model, utility maximising borrowers with uncertain income prospects consider the effect of both standard debt and percentage of income loans (HCCs) on the probability distribution of the net present value as on of future income. The borrower receives funding from a risk neutral lender who offers prices for debt and HCC funding. The model shows that, according to Pareto criteria, optimal contracts can consist of: (i) all standard debt; (ii) all HCC funding; or (iii) some combination of debt and HCC.

The type of contract that is optimal depends on the lender's beliefs about the borrower's income prospects, the borrower's beliefs about his/her own income prospects and also the borrower's degree of risk aversion. He then goes on to suggest that the individual borrowing decision can be made in a manner similar to the corporate borrowing decision. The results indicate that borrowers who are more uncertain about future income – or who are risk averse about future income prospects – will choose to raise money by pledging percentages of income rather than taking on standard debt. Carver's model can be adapted to arrive at the same conclusions for HCCs as Chia reaches with respect to risk-sharing IRLs.

HCCs are now in operation, with the first business formed known as MyRichUncle (founded by Vishal Garg and Raza Khan in the US in 2002). MyRichUncle began with a subset of engineering students at the University of California, San Diego. To minimise problems of adverse selection, eligibility for the contract is determined in part through academic merit. Repayments of the obligation

are remitted directly to the company, with amounts validated through the provision of income information made available to the internal revenue service. This is bound to be less efficient than would be a direct deduction, as operates in Australia, New Zealand and other countries, but the principle of default-protection remains intact.

## 5. INTERNATIONAL IRL REFORMS

### *5.1. International Applications of IRLs*

#### *5.1.1. The Yale Plan*

Yale University introduced an IRL scheme in 1972, extended in 1976 but discontinued several years later. Apart from loans being repaid depending on income, the scheme had the feature of borrowing being of a 'group loans' form, in which there was mutual responsibility between members with respect to the repayment of the total debt. That is, the Yale scheme was a risk-pooling IRL.

Individual repayments were not unlimited, however, with a cap being defined at 150 per cent of the borrower's loan. This then became a 'buy-out' option for former students wishing to discontinue in the programme (Palacios 2004). Even so, risk-pooling necessarily meant that high income earners covered the unpaid debts of low income earners and those who defaulted for other reasons.

Initial default rates of 15 per cent exceeded expectations, and this had an unfortunate behavioural implication. This was to encourage those remaining in the scheme to avoid repayments as well, increasing the burden further for those not so doing. These effects are close to what would be expected with the moral hazard issue raised by Nerlove (1975).

One of the major problems with the Yale scheme was that the university acted as the collection agency. However, an educational institution is poorly equipped to efficiently enforce the payment of income contingent loans, and this lack of expertise effectively encouraged and reinforced the sense of inequity of those Yale debtors remaining in the scheme. The critical role of administration and collection is taken up further below.

#### *5.1.2. Sweden*

In Sweden in 1988 the government's student assistance scheme had both a grant and a loans component (Morris 1989). The repayment arrangements were of the conventional type except that at low levels of income former students were allowed to defer repayments. There was evidence of student concerns about repayments at the time (Morris 1989).

The scheme was changed in 1989 to allow a fuller embrace of the notion of income contingent repayment. The arrangement is that former students now repay 4 per cent of their average incomes over the previous two years. The collection is done through an education loans office. There is little available evidence of the effect of the scheme.

### 5.1.3. *Australia*

In 1989 Australia instituted a broadly based risk-sharing IRL charging system for higher education, known as the Higher Education Contribution Scheme (HECS). HECS seeks to recover a part of tuition costs, and is not concerned with student income support.<sup>6</sup> HECS involves students incurring a debt which is repaid according to future incomes, there being a first threshold of repayment of around average Australian earnings. The Tax Office is the collection agency.

Payments are progressive and, after the debt is incurred, there is a real rate of interest of zero. The interest rate regime is more complicated than this however, because if a student chooses to pay up-front, they receive a 25 per cent discount. This means that HECS implicitly has a rough form of a real rate of interest, in that those choosing to pay later initially incur a higher level of debt, although the difference obviously reduces in present value terms over time. The ‘discount’ could be seen to be Australia’s way of encouraging what are called in other countries ‘parental contributions’.<sup>7</sup>

Repayments of HECS debts for typical graduates are shown in Chapman and Ryan (2002). Their analysis illustrates that: male science graduates earning average graduate incomes for full-time work will repay HECS in about 8 or 9 years; equivalent females will repay HECS after about 12 years. Of course, there will be a large variation in repayment profiles given that annual contributions depend on individual graduates’ incomes. Micro-simulation analysis of repayment profiles of HECS illustrates this point (see Harding 1995).

There has by now been considerable research on the effects of the introduction of HECS on a critical issue for policy – the consequences of the scheme for the access of relatively disadvantaged prospective students.

The conclusions from the Australian research with respect to socio-economic mix and access are as follows.

- (i) The introduction of HECS was associated with aggregate increases in higher education participation.
- (ii) HECS did not result in decreases in the participation of prospective students from relatively poor families, although the absolute increases were slightly higher for relatively advantaged students.

Both findings raise some important discussion points. With respect to the first, it doesn’t follow that HECS per se resulted in an increase in the demand for higher education. Indeed, if this were the case it would constitute a curiosity for economic theory, since the result would suggest that increasing the price of a service increases also the quantity demanded.

Understanding the positive relationship between the introduction of tuition and higher education participation is assisted through consideration of the theoretical framework of Finnie and Usher (in this volume). The critical point they make is that typically many public higher education systems are supply-constrained, and this was certainly the case in Australia at the time of the introduction of HECS. The effect of the introduction of the scheme was to encourage the government to outlay

substantially more resources for university places through the promise of higher future revenues.

The apparent finding that neither the introduction of, or changes to, HECS had no apparent effects on the access to the system of poorer students should not be interpreted to mean that risk-sharing IRL schemes have a unique capacity to protect the disadvantaged from any adverse effects of tuition. Indeed, an important finding from the disparate case studies examined in this volume is that the socio-economic mix of higher education students seems fairly insensitive to funding regimes. That is, marked changes in the levels, incidence and nature of grant and loan support systems (and tax and other fiscal incentives) do not seem to affect significantly the proportion of enrolments of students from different family wealth backgrounds.

The above important finding rings true: with respect to the marked changes in the nature of government support in Canada (Finnie and Usher, this volume); even with significant enrolment expansions in Norway (Aamodt, this volume); following marked long-run changes in tuition levels in the Netherlands (Vossesteyn and De Jong, this volume); and with both large higher education growth and increased cost-sharing in Portugal (Teixeira, Rosa and Amaral, this volume). It follows that any claims that particular financing systems are special because they don't affect the socio-economic composition of higher education should not be taken at face value. The current author has in the past gone close to this suggestion with respect to the consequences of risk-sharing IRLs.

The other important finding from HECS is that the collection of the debt is apparently quite efficient in administrative terms. That is, Tax Office estimates put the collection costs at around \$40 million annually, or less than 4 per cent of yearly receipts. Administratively the system seems to have worked well.

#### *5.1.4. New Zealand*

The second country to adopt a broadly based risk-sharing IRL scheme was New Zealand, in 1991. The New Zealand system shares several features of HECS. Specifically:

- loan repayments depend on an individual's income, and are collected through a tax system which made this simple in operational terms; and
- a first income threshold of repayment, after which there is a progressive percentage rate of collection.

The New Zealand arrangements differ importantly to those introduced in Australia. In particular:

- the loans are designed to cover both university fees and some living expenses, although there is also a system of means-tested grants for students from poor backgrounds;
- initially the loans carried a market rate of interest; and

- universities are free to set their own fees (although it is notable that the resulting charge regimes did not differ much between institutions).

In other words, the New Zealand system was designed to be more consistent with free market principles. For example, there is a potential for resource allocation efficiencies through the freedom of institutions to choose fee levels. Further, having a market rate of interest on the debt arguably reflects the true opportunity cost of loans (Barr 2001).

However, in response to public disquiet over the interest rate regime, the government changed the scheme significantly in early 2000. The changes introduced a zero nominal interest rate for the period a student was enrolled, and variations to the application of real rates of interest depending on graduates' employment circumstances. These complications have apparently added to the administration costs of the scheme, with some commentators estimating that it now costs three or four times as much to run the New Zealand system compared to HECS.<sup>8</sup>

There is little direct evidence of the effects of the New Zealand IRL system on the access of disadvantaged prospective students. However, Maani and Warner (2000) report data on changes in participation with respect to ethnicity at the University of Auckland over the 1990s. They suggest that there has been a marked relative decrease in both European and Maori enrolments, and a large increase in the proportion of students with an Asian background. No clear conclusions are drawn as to the meaning of these changes for the effects of the New Zealand IRL scheme.

The New Zealand system has been fairly controversial, and has undergone considerable parameter changes, particularly with respect to interest rates. However, in collection terms the New Zealand IRL scheme has apparently worked satisfactorily, although there is little doubt that the complexities from the current differential interest rate treatment make it administratively quite expensive.

#### *5.1.5. The Republic of South Africa*

The Republic of South African introduced an IRL system in 1991, known as the National Student Financial Aid Scheme (NSFAS). NSFAS was motivated essentially by a concern that without assistance the marked racial skewing of the higher education system away from non-white students would remain (Jackson 2002; Ishengoma 2002). While bursaries could have been used instead of IRLs, it was considered that the costs involved "... would not be financially sustainable" (Jackson 2002: 83). The scheme initially provided resources to about 7500 students, but by 2002 this number had risen to over 100,000, or more than 20 per cent of South Africa's higher education students.

Resources are distributed via the universities, with preference going to prospective students who are both poor and academically able. That is, unlike other national schemes, the South African IRL scheme involves means-testing on the basis of family income at the point of entry to higher education.

Collection takes the form of former students repaying directly to NSFAS when their income reaches R26,000 per annum, at a rate of 3 per cent of income, and this proportion rises to reach a maximum of 8 per cent of income per year when income

exceeds R59,000. In this sense the collection parameters are similar to HECS in that they are progressive, but there are two major differences between the South African approach and those used in both Australia and New Zealand.

The first concerns the first income level of repayment which at about US\$5000 is very much lower than the thresholds used in other countries (see Jackson 2002). Second, in the first instance the student repays directly to the lending institution. That is, the taxation system is not the first port of call, but is instead a last resort. Employers are required to be involved only when a student is not maintaining expected debt repayments. It is unclear how much this adds to administrative costs, but it would seem to suggest that collection is relatively expensive.<sup>9</sup>

#### 5.1.6. *The UK*

Higher education financing policy over the last 15 years or so in the UK has been characterised by considerable instability. As well, there have been notable changes over time in the value and institutional nature of student income support. In the 1980s grants were offered on the basis of parental income, but the real value of this support eroded significantly and Barr (2001: 202) argues that “by the late 1980s [it] was no longer adequate fully to support a student’s living costs”.

In 1990 a loan scheme was introduced, but collection was not based on a former student’s income. The loans were designed to replace half of the support previously covered by the grant, but in effect their impact was likely to be smaller than this given that they attracted a zero rate of interest. Barr (2001: 202) notes critically that: “It would have been cheaper to give the money away”.

In 1995 the Conservative government set up a higher education funding committee, due to report after the election of 1997. Chaired by Sir Ron Dearing, the report (Dearing Report 1997) recommended strongly the adoption of a scheme based on Australia’s HECS. For description and analysis of the Dearing recommendations, and the highly modified form in which they were adopted, see Chapman (forthcoming).

In 2003, the UK government announced further proposed reforms to higher education financing. The major changes to be implemented in 2005 are:

- (i) the introduction of price discretion for universities, but with a cap of £3000 per full-time student year;
- (ii) the introduction of tuition for all students, but with the poorest being provided with subsidies; and
- (iii) all students will be able to repay the charge according to their future incomes.

An arguable advantage of the UK system over that of the current Australian approach,<sup>10</sup> and more consistent with the New Zealand approach, is the introduction of some price discretion; since universities are able to charge what they want up to a maximum level of about US\$5000 per full-time course. This implies that there will be some prospects for price competition, and thus the possibility of increased allocative efficiency.

As with the Australian and New Zealand schemes, the UK IRL policy is likely to be relatively inexpensive to administer. This is because income tax arrangements in these countries greatly facilitate the operation of IRLs. The last is a major conclusion from the adoption of such arrangements in countries with efficient, comprehensive and settled income tax collection mechanisms. As explained below, this is far from the case with respect to developing countries, where public administrative challenges related to the collection of IRLs loom large.

#### *5.1.7. The US*

In 1993, the Clinton administration introduced broadly based reforms to student loan programmes (Brody 1994; Schrag 2001). One noteworthy aspect of the reforms adopted included an option for students to adopt income contingent repayments for some part of their loan obligations, for up to 20 per cent of an agreed income basis. Interestingly the justification for an IRL option in the US reform can be traced not to risk or uncertainty with respect to future graduate incomes.

Instead, the background was the Clinton administration's concern for the job choice of graduates. Specifically the perceived problem was that the very high loan repayment burdens of graduates were such as to make job choices in relatively low paid, but socially productive employment, close to impossible. Brody argues that this was the foundation of the proposal, and quotes President Clinton (who participated in the Yale Plan): "A student torn between pursuing a career in teaching or corporate law, for example, will be able to make a career choice based on what he or she wants to do, not how much he or she can earn to pay off the college debt" (Clinton 1993 cited in Brody 1994: 502).

This perspective is supported by Schrag (2001), who reports Kramer (1987) suggesting that the effect of escalating costs and debts for law schools is that they would "... be filled with many more students who, as they become lawyers, do so with the single-minded objective of milking the profession for all it is worth in order to be able to pay retrospectively for their legal education". Schrag suggests that law graduates in public sector jobs would typically face repayments of conventional loans that were around 40 per cent of after-tax earnings.<sup>11</sup>

In support of the above, a survey<sup>12</sup> of Georgetown and Catholic University law students, conducted by Schrag (2001), suggested that up to 70 per cent of students who responded that they were interested in public sector law employment said that they would have to choose jobs in more highly paid private practice because of their loan obligations. US Senate hearings at the time, consistent with President Clinton's view, documented that this was the major motivation for the income contingent loan scheme (Schrag 2001).

That is, an IRL scheme was promoted in the US as a result of the perceived problems associated with the very high level of conventional loan repayments, which was not the case with respect to the background to IRL introduction in Australia, New Zealand and the UK. In these countries, the regressivity of having a no-charge system, the importance of default-protection in the repayment of loans, and the need for resources to allow expansion of higher education were the principal motivations for the introduction of IRL schemes.

The IRL reforms introduced in the US have not worked. With respect to take up, for example, in 1999 only 7 per cent of the eligible student population had chosen to convert their loan obligations to the IRL option (Schrag 2001). The reasons for this are explored in Chapman (forthcoming).

The basic point from the US IRL experiment is that policy design and information processes are critical to the success of public sector initiatives. That is, the US scheme does not adequately address the issue of default-protection, and has been inaccurately and insufficiently promoted to its potential users.

In the US over the last decade or so, there has also been a move by private universities towards a form of income contingent repayment of the debt of law students. These schemes are known as 'loan repayment assistance programs' (LRAP). The arrangement, now with 56 law schools, entitles law graduates who choose employment in "... lower-paying public service jobs – such as legal services programs or some government agencies ..." to some forgiveness of loan obligations (American Bar Association 2003: Appendix). The motivation behind universities' subsidies of LRAP is clear, which is to facilitate the role for private colleges of enabling more lawyers than otherwise to undertake periods of relatively socially productive employment, the same basis as that which encouraged the Clinton reforms. The effects of these programmes are not so far well documented.

#### *5.1.8. Chile*

In 1994, Chile introduced an income contingent loan scheme to replace the previous fixed-payment loan system (Leiva 2002). The loan carries a real interest rate of 2 per cent, and requires from the student annual payments of the lesser between 5 per cent of income and a fixed amount (Palacios 2004).

Importantly, each university is responsible for collecting the payments from the University Credit resulting in widely varied collection results from institution to institution, with average countrywide cost-recovery levels at around 60 per cent (Camhi and Latuf 2000).<sup>13</sup>

Palacios (2004) reports that the system is not widely considered to be successful, for the following reasons: cost-recovery levels are low; and the amounts available for lending are far from satisfying student demand (Leiva 2002).

According to Palacios, Chile's example reinforces the notion that universities are poorly suited to debt collecting, a point which seems to follow from the Yale IRL experience. That is, for an IRL scheme to work it is critical that repayment collections use a national tax or social security agency. This issue is taken up further below.

#### *5.2. Common Factors in the Successful Adoption of IRLs<sup>14</sup>*

It is interesting to examine some of the circumstances behind the apparent successful adoption of IRLs in Australia, New Zealand, the Republic of South Africa and the UK. Chapman and Greenaway (2003) record there are several factors shared by these four countries which might help in an understanding of their adoption of IRL

schemes within a similar time frame. Two critical aspects of this relate to shared institutional background.

The first is that Australia, New Zealand, the UK and South Africa all have in place taxation systems that could be used to collect efficiently student loans on the basis of future incomes. This is a critical administrative issue, and is fundamental to the prospects of the adoption of IRLs in other countries. It is interesting that in the South African case authorities chose to use the tax system as a back up rather than the port of first call for loan collection, but it still remains the case that the tax system is available for collection.

Second, in these four countries there is a similar higher education system, essentially inherited from the UK. An important characteristic is that the vast majority of universities are public sector institutions, which has meant that the recovery of a loan designed to pay a charge is uncomplicated if the collection authority is also part of the public sector (the internal revenue service or equivalent).

It is also worth stressing that in all of these countries there was a clear recognition that the time for 'free' higher education was over (a position not shared for example in the US, since charges are the norm in that country). The expansion of the number of university places, or improvements in the quality of the service, was seen to be desirable, and none of the governments was prepared to finance the required outlays from additional taxation or reduced public services. Chapman and Greenaway (2003) argue that this can be traced to a worldwide move towards more parsimonious government after about the mid-1980s and, perhaps more importantly, to the recognition that university education financed without direct contributions from the private beneficiaries is in essence regressive and inequitable.<sup>15</sup>

It is possible that the apparent successful implementation of the Australian IRL scheme helped motivate administrative change in these directions in some of the other countries. That is, New Zealand policy advisers were aware of developments in Australia, and there is little doubt that direct contact between analysts from Australia and the UK influenced the nature and form of debate in the latter country. Perhaps the policy point is, as Kenneth Boulding once observed: "If it exists, then it is possible".<sup>16</sup>

While there have been significant reforms in the direction of the adoption of IRLs in the above countries, this has not so far been a shared experience in developing countries. This is the case even though there has been a significant amount of attention with respect to IRL reforms from the World Bank, the UK Department of International Development and other international aid agencies. The following short discussion summarises the experience of these countries, stressing the relative lack of successful implementation of IRLs in developing countries.

### *5.3. Administrative and Collection Issues: IRLs for Developing Countries?*

Chapman and Nicholls (2003) consider policy debates related to the potential adoption of IRLs in Indonesia, Namibia, Ethiopia, Rwanda, the Philippines and other countries. Their essential point is that in Australia and other advanced Western

countries in which an IRL system of deferred payment has been introduced, this has been a relatively simple matter from an administrative point of view.

The reasons for this are that the public administration systems of these countries feature a strong legal framework, a universal and transparent regime of personal taxation and/or social security collection, and an efficient payment mechanism. The last involves computerised record keeping of residents' vital financial particulars and, very importantly, a universal system of unique identifiers (usually numbers, often accompanied by an identity card).

Under these circumstances it is a relatively simple matter to identify and track individual citizens over time and space. It is not difficult, moreover, given the strength and reach of public administrative systems, to tack onto some existing collection mechanism an additional function: the collection of payments from ex-students, on the basis of a fixed proportion of income.

In the developing world, however, administrative systems are likely to be weak, and often rely on intensive and inefficient manual record keeping. Taxation regimes may be shaky or even corrupt, and usually no reliable system of unique identifiers exists. Financial regulation, bankruptcy laws and contract laws are often ineffectual. Nevertheless, it is in these countries, where social and economic inequalities are usually profound, that even a modest up-front charge for higher education constitutes a significant barrier to participation for citizens other than the very privileged.

Chapman and Nicholls' (2003) survey lead to a summary of the minimum conditions required in order to implement a successful IRL system, which are:

- (i) a reliable, preferably universal, system of unique identifiers;
- (ii) an efficient way of determining with accuracy, over time, the actual income of former students;
- (iii) an accurate record keeping of the accruing liabilities of students (while studying); and
- (iv) a collection mechanism with a sound and, if possible, computerised record keeping system.<sup>17</sup>

A further basic requirement for the introduction of IRLs is a strong legal framework and functional judicial system. Indeed, it is hard to imagine implementing a workable scheme outside this context. Even so, it may be possible in some countries to utilise other forms of incentives and sanctions to bolster a weak legal system.

In many countries there are severe difficulties associated with the establishment of IRL policy integrity, credibility and collection, at the same time that there is an important economic case for charging tuition. Given this, both Johnstone and Aemero (2001) and Chapman and Nicholls (2003) suggest that it may be desirable to proceed with the imposition of up-front fees and scholarships instead of IRLs. The former, in particular, offer considerable scepticism with respect to IRLs in developing countries (see also Johnstone 2004).

Very recently, the government of Thailand has announced that it will be implementing in 2006 an IRL scheme similar to that of Australia's HECS. To

increase the likelihood of successful administration, a tax file numbering system has also been introduced. We watch this development with considerable interest.

## 6. SUMMARY

Market failure in the provision of resources for human capital investments is a critical issue for higher education financing policy. Given the presence of credit constraints associated with a lack of collateral to underwrite human capital investment borrowing, there is a case for government intervention. One typical way in which this issue is addressed takes the form of guarantees for bank loans.

However, there are important shortcomings with this approach, traceable to the fact that repayment obligations of loans of this form are insensitive to borrowers' future financial circumstances. There are two potential adverse implications for prospective borrowers: a lack of insurance against default, and hardships related to high variances in consumption streams. In addition, there might well be socially unproductive career choices made by graduates facing very high loan repayments. These problems promote for discussion other approaches to the capital market problem.

IRLs offer a potential solution. Their essential benefits are that, if properly designed, they can both eliminate the prospect of default and provide consumption-smoothing. There are several quite different forms: risk-pooling, risk-sharing, graduate taxes and human capital contracts.

IRLs with risk-pooling are characterised by high levels of adverse selection in terms of who chooses to be involved in such schemes, and moral hazard with respect to the labour/leisure choice once the repayment period begins. These problems seem to be severe enough to eliminate this form of an IRL as a viable policy solution.

IRLs with risk-sharing can avoid these problems and, in conceptual terms, seem to offer the most favourable prospect for IRL policy reforms. But the design characteristics of this form of IRL are critical for policy: greater insurance and consumption-smoothing for borrowers impose higher costs on taxpayers.

GTs have little prospect of allocative efficiency because there are no economic benefits delivered to institutions from price competition. However, GTs offer what is arguably the most progressive basis of the collection of charges. GTs do not yet exist.

HCCs involve risk-sharing – with the risk burden being assumed by the lender – and are more a form of equity than they are debt. There are now several examples of operating HCCs, and a burgeoning research literature (see particularly Palacios 2004; and Carver 2004).

In mature economies there are many recent applications of IRLs for higher education. Just about all of them take the form of risk-sharing, with the public sector bearing the borrowing risks. The experience of this form of IRL, documented best for Australia, has been argued above to be favourable.

There are no national risk-pooling loans, nor is there yet an example of a GT. HCCs are just being implemented, but their incidence thus far is not significant.

Consideration of the case for IRL approaches to higher education financing needs to take into account the fact that there is not yet available a great deal of information or analyses of these forms of policy intervention.

However, some lessons are already clear. One is that IRLs of the risk-pooling variety seem destined to fail, and this can be traced to the adverse selection and moral hazard issues raised by Nerlove (1975) and others. Two, analysis of risk-sharing IRLs suggests that the introduction of tuition collected in this way has not been associated with adverse consequences for the access of the poor. This result is not necessarily because of the loan collection form however, since charges collected in other ways might also have had no adverse implications for the enrolment of poor students (see other chapters in this volume).

An essential lesson for public policy is that collection, design and information issues are critical to the acceptance and success of loan schemes. The US scheme has not worked due in part to problems in these areas. On the other hand, the administration costs of HECS are low, and this arguably will be the case for IRLs implemented in most mature economies. This is far less likely to be true for developing countries.

#### NOTES

- 1 The notion of IRLs has been in the literature for quite a while, it being 'new' only in the context of implementation (Johnstone 1972a; Friedman 1955).
- 2 Eligibility for Canada Student Loans, for example, is determined in part by an assessment of needs, and loans have been made available to less than half of the student population (Finnie and Schwartz 1997).
- 3 The Clinton IRL policy initiative is analysed in detail below.
- 4 The Yale Plan is examined in more detail below.
- 5 The point is made in different terms by Johnstone (1972b).
- 6 In Australia, student income support takes the form of means-tested grants.
- 7 A point emphasised by Bruce Johnstone in private communication (November 2004).
- 8 This view can be sourced to private conversation with Australian tax authorities exploring the comparative costs of the two policies. Also, direct comparisons of administration costs and loan revenues from government reports support this view (Warner 1999; and the Australian Department of Education, Science and Training Budget papers).
- 9 Jackson (2002) argues that the annual administrative costs are less than 2 per cent of the total value of loans distributed. The more important figure however would be costs as a proportion of revenues collected; data not reported.
- 10 HECS will involve a change towards universities receiving charge finances directly in 2005.
- 11 This is very much higher than the repayment proportions of taxable income required in the IRL schemes of Australia and New Zealand, for example, of around 3–6 per cent of taxable incomes.
- 12 It should be noted that the response rate of the survey of around 30 per cent was very low, raising the possibility that the data are an inaccurate reflection of general views concerning the scheme.
- 13 This number reflects collection for other types of loans as well, so the collection amount for only the income contingent ones could be different.
- 14 The discussion in this section follows closely Chapman and Greenaway (2003).
- 15 These arguments were part of the explicit policy debate in Australia (Chapman 1997), New Zealand (Warner 1999) and the UK (Barr 2001).
- 16 Kenneth Boulding, unpublished lecture, Harvard University, 1972 (as recalled by Glenn Withers pers. comm., 1975).
- 17 It should be recognised that the first three conditions apply also to the successful implementation of commercial bank loan arrangements.

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