Financing of Higher Education

B Chapman, Australian National University, Canberra, ACT, Australia
P Tulip, Board of Governors of the Federal Reserve System, Washington, DC, USA

Introduction

There are very many possible ways to finance higher education and this is illustrated in what follows with respect to the systems of a large number of countries. We consider in detail the conceptual issues related to the costs and benefits of different approaches to student loans. Income contingent loans (ICL) are emerging as a mechanism to deliver financial assistance to students, and international reforms in this area are examined in some detail.

Descriptions of Higher Education Financing Systems

International Comparisons of Tertiary Education Expenditure

The financing of higher education varies greatly from country to country. Among the developed economies of the Organization for Economic Co-operation and Development (OECD), spending on higher education institutions averaged 1.4% of the gross national product (GDP) in 2003, which is about the same as a decade ago. Expenditures range from less than 1% of GDP in Italy up to almost 3% of GDP in the USA (see **Figure 1**). The variation in spending reflects large differences in both enrolment rates and in expenditure per student.

On average, 24% of tertiary expenditures in the OECD were financed privately in 2003. This is a marked increase from 1995, when the average was only 19%, although this partly reflects changes in the composition of countries within the sample. In some countries (the United States, Korea, Japan, and Australia), most spending is from private sources (see **Figure 1**). In others, including most European countries, almost all spending is by the government.

Notwithstanding these variations, government subsidies are substantial in every industrialized economy. The rationale for this government support for higher education is controversial. For example, it is often said that tertiary education is a right, not a privilege. However, the same might be said of food or clothing, which governments do not heavily subsidize. A more concrete argument is that subsidies permit children from less-wealthy families to undertake higher education, promoting equality of opportunity. This argument is powerful when the only alternative is the free market. However, as discussed below, other government policies, such as provision of student loans, can facilitate access without large subsidies. Perhaps the most common argument in the academic literature is that higher education provides benefits to others, not just the student – so it is fair and efficient that society pays a share of the cost. Examples of these benefits or externalities include technological innovation and civic participation. In practice, estimating the size of these benefits is difficult. Therefore, while there is widespread agreement in principle that governments should contribute to some of the costs of higher education, there is also disagreement as to how large that contribution should be.

International Comparisons of Tuition Fees

As might be expected, countries that finance higher education privately tend to have high tuition fees, and this is illustrated in **Figure 2** which also shows differences between private and public institutions. Estimates across countries are not precisely comparable but the ranking of countries is not very sensitive to measurement issues. In particular, tuition is relatively expensive in the United States, Korea, and Australia, and tuition is low, or even free, in most European countries.

Other Costs

The direct education costs described above typically represent a small share of the total cost of attendance. Students also need to pay for room, board, and other living costs. Estimates of these tend to be highly judgmental and are difficult to compare. As one indicator, governments and educational institutions in the United States typically base financial aid packages on the assumption that students need about $US10,000 to $11,000 per annum to live on. That compares with an average tuition fee of around $US8000. In other countries, estimates of both living costs and tuition fees tend to be lower, but the former outstrip the latter by even wider margins. The sum of tuition and living costs (less scholarships and grants, discussed below) represents the amount that needs to be financed by the typical tertiary student.

Students with ready access to finance will recognize that living costs would be incurred regardless of whether or not they study and hence are not relevant to the choice as to whether to enrol. The opportunity cost – the resources that are sacrificed in order to enrol – is foregone income. An

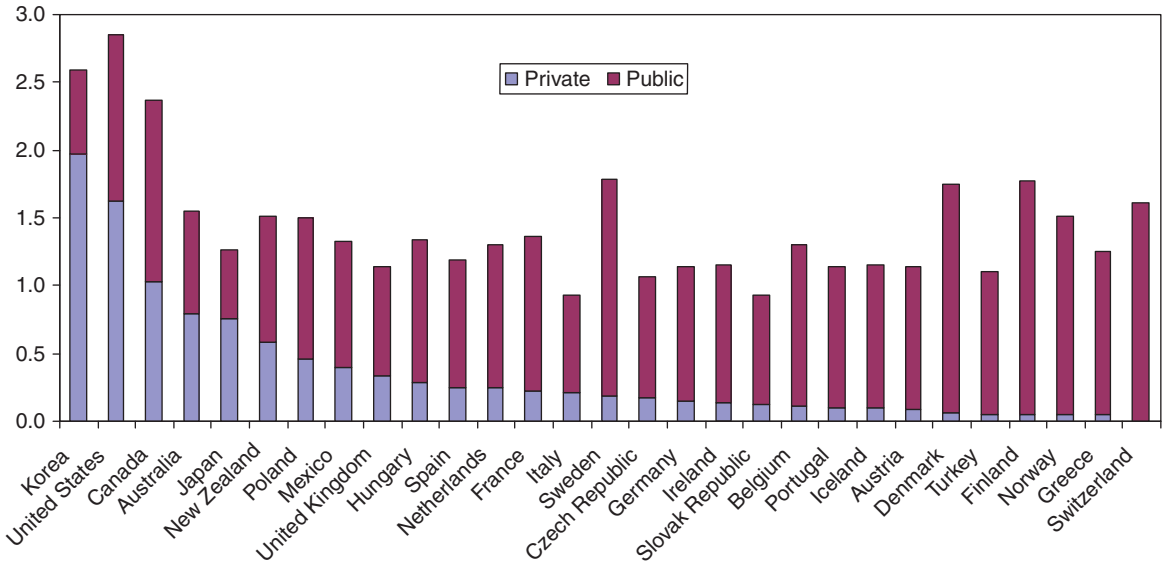

Figure 1 Expenditure on tertiary education institutions: OECD countries percentage of GDP, 2003. Countries are ranked by level of private spending. In Switzerland, private spending data are not available. For further notes and qualifications, see source. From table B2.1b OECD (2006). *Education at a Glance*. Paris: OECD.

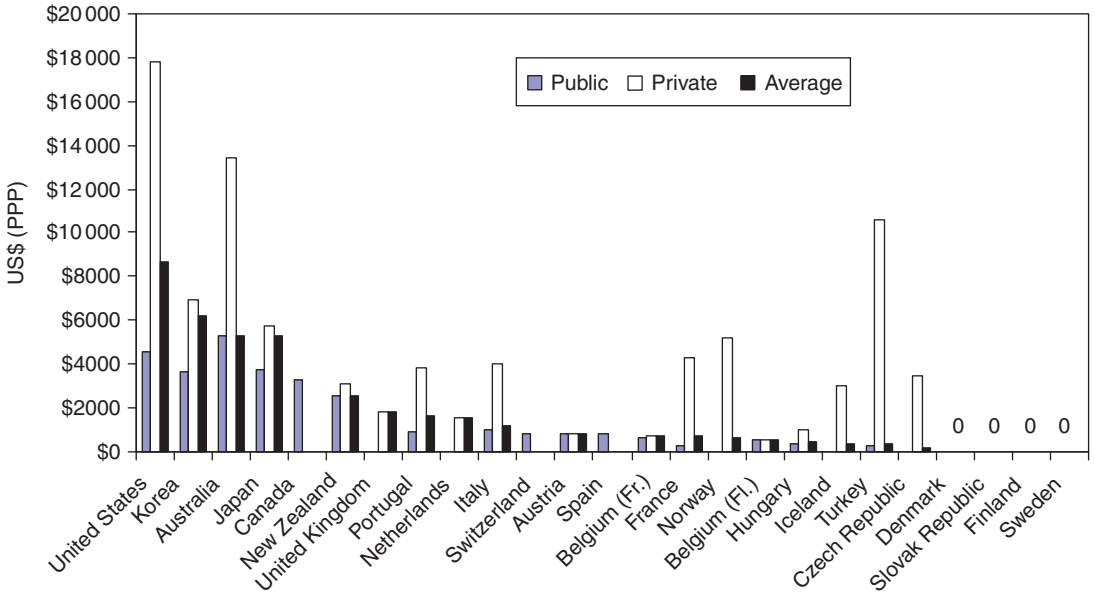

Figure 2 Average tuition fees: tertiary type-A institutions, 2003. Countries are ranked by average tuition fee, weighted by full-time enrolment. Tertiary type-A institutions mainly comprise bachelor's degree programs, and also include masters and professional degrees and some academically oriented associates degrees. Where data are provided as a range, the midpoint is used. For further notes and qualifications, see source. From table B5.1 OECD (2006). *Education at a Glance*. Paris: OECD.

illustrative estimate is the median earnings of a 20-year-old high-school graduate in the United States – around $22,000 a year. This exceeds the cost of tuition at almost all institutions, a difference that is even greater in other countries. Hence, although public discussion often emphasizes fees as a barrier to education, the bigger disincentive is foregone earnings and the need to finance living costs. Furthermore, although tertiary education is often described as free in many countries, the size of living costs and foregone earnings means that large contributions are nevertheless required on the part of the student.

Different Kinds of Public Support

The form of public support for higher education also differs widely. In all OECD countries, direct spending

on institutions accounts for the majority of public spending on tertiary education. Indeed, in many countries (e.g., Switzerland, Poland, and Portugal), it is almost the only form of support. Elsewhere, however, substantial support is provided through households in the form of grants and loans. Grants may be based on academic performance (when they are often called scholarships) and/or means testing, either of family or individual income. Loans may be provided directly from the government, or indirectly through a government guarantee of a commercial bank loan. However, increasingly financial assistance from governments is taking the form of an ICL, and this reform is considered in detail in the following sections.

From **Figure 3** it is apparent that New Zealand is the OECD country that relies most heavily on loans, while Denmark relies most on grants. The OECD loan estimates shown represent the gross amount directly lent by government, plus subsidies to private lenders. For some purposes, this overstates the budgetary cost of loans, as repayments are excluded. Meanwhile, it may understate the importance of guaranteed private loans. In principle, it would be desirable to also include tax concessions; however, comparable international estimates are not available.

The relative merits of grants, loans, direct institutional funding, and tax concessions are strongly debated. Researchers have endeavored to measure the costs and benefits of these alternative policies but effects are not always clear. One simple piece of evidence is presented in **Figure 4**, which shows that countries with large loan programs tend to have above-average enrolments. There are several possible explanations for this, including reverse causation. However, the most usual interpretation is that the ready availability of finance facilitates access to higher education.

The following sections consider the conceptual bases of different policy approaches to student loans.

Conceptual Issues Concerning Student Loans

The Need for Student Loans

A significant financing issue for higher education discussed above is that there is a case for both a contribution from students and a taxpayer subsidy. The next important question is: Is there a role for government beyond the provision of the subsidy?

An understanding of the issue is facilitated through consideration of what would happen if there were no higher education financing assistance involving the public sector. That is, a government, convinced that there should be a subsidy, could simply provide the appropriate level of taxpayer support to higher education institutions, and then leave market mechanisms to take their course. Presumably, this would result in the institutions charging students upfront on enrolment for the service.

However, there are major problems with this arrangement, traceable in most instances to the potent presence of risk and uncertainty. This critical point was first raised by Friedman. The argument can be best understood with reference to the nexus between labor markets and human capital investments. The essential point is that educational investments are risky, with the main areas of uncertainty being as follows as discussed by Barr (2001), Palacios (2004), and Chapman (2006a):

1. Enrolling students do not know fully their capacities for (and perhaps even true interest in) the higher

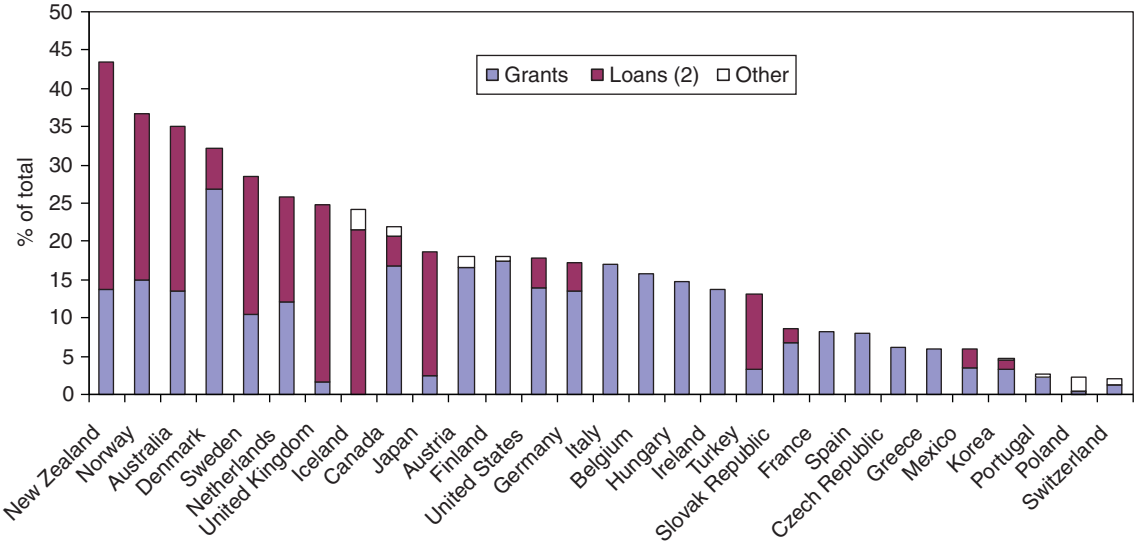

Figure 3 Public subsidies to households as a percentage of total public expenditure on tertiary education (2003). Countries are ranked by share of public spending flowing through households. Loans are measured as gross amount directly lent by government, plus subsidies to private lenders. For further notes and qualifications, see source. From table B5.2 OECD (2006). *Education at a Glance*. Paris: OECD.

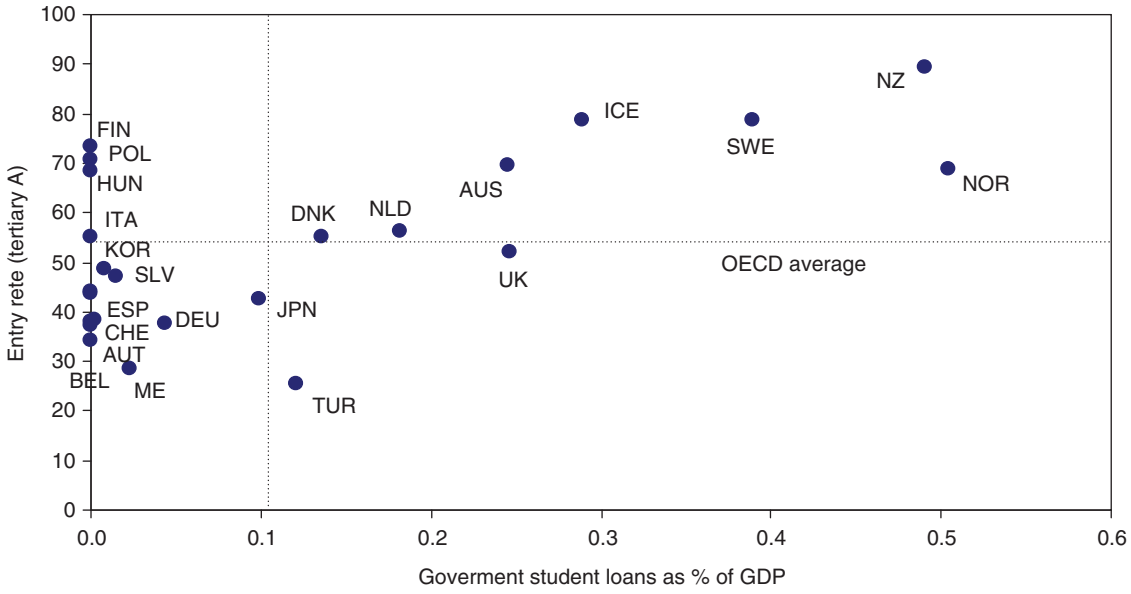

Figure 4 Student loans and entry rates to tertiary education, 2003. The entry rate is the proportion of people entering tertiary type-A programs for the first time. It differs from enrolment rates in that comparability between countries is not distorted by different course lengths. Loans are valued as the gross amount directly lent by government, plus subsidies to private lenders. From table B5.2 OECD (2006). *Education at a Glance*. Paris: OECD.

education discipline of their choice. This means in an extreme they cannot be sure that they will graduate with, in Australia for example, around 25% of students ending up without a qualification.

2. Even given that university completion is expected, 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.
3. There is uncertainty concerning the future value of the investment. For example, the labor market – including the labor market for graduates in specific skill areas – is undergoing constant change. What looked like a good investment at the time it began might turn out to be a poor choice when the process is finished.
4. 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 for both borrowers and lenders. The important point is that, for example, if the future incomes of students turn out to be lower than expected, the individual is unable to sell part of the investment to refinance a different educational path. For a prospective lender, a bank, the risk is compounded by the reality that in the event of a student borrower defaulting on the loan obligation, there is no available collateral to be sold, a fact traceable in part to the illegality of slavery. Moreover, even if it was possible for a third party to own and sell human capital, its future value might turn out to be quite low taking into account the above-noted uncertainties associated with higher education investments.

It follows that, left to itself – and even with subsidies from the government to cover the value of externalities – the market will not deliver propitious higher education outcomes. Prospective students judged to be relatively risky, and/or those without loan repayment guarantors, will not be able to access the financial resources required for both the payment of tuition and to cover income support. There would be efficiency losses (talented but poor prospective students would be excluded), and distributional inequities (the nonattainment of equality of educational opportunity). Government intervention of some form is thus required.

The capital market failure with respect to higher education financing is apparently understood by the governments of most countries, given that public sector loan interventions are commonplace internationally. Until recently, government intervention often took the form of public sector guarantees for commercial bank provision of education loans, but over the last decade or so has increasingly involved ICL. While quite different in practice, both approaches are motivated in part by the recognition that, left alone, higher education markets will function poorly.

The Costs and Benefits of Conventional Student Loans

A possible solution to the capital market problem described above, used in many countries, is the provision of student loans – either directly by the government or indirectly through guarantees to banks. Typically, and most simply, these loans involve fixed repayments, as, for example, with a house mortgage. While this seems to address the capital market failure, it raises problems of default.

Students face an important default issue; that is, some may be reluctant to borrow for fear of not being able to meet future repayment obligations. Not being able to meet repayment obligations has the potential to inflict significant damage to a person's credit reputation (and thus access to future borrowing, e.g., for the purchase of a house). These concerns imply that there will be less borrowing than there would be in the absence of this default concern.

A reluctance to borrow due to the uncertainty of repayment constitutes what might be labeled an *ex ante* default problem for prospective students. There is also an *ex post* problem, which is that a proportion of those students who took the credit risk of borrowing for a human capital investment will end up not being able to repay because of low incomes. In these circumstances, default imposes a potentially large cost on those unlucky borrowers who do poorly in the labor market. Significantly, research suggests that members of the default group are predominantly those who ultimately experienced relatively high unemployment rates and relatively low earnings.

The prospect and consequences of a student defaulting on a loan obligation is a potentially critical issue for borrowing to finance human capital investments, due to the uncertainties noted above. A consequence is that some eligible prospective students will not be prepared to take bank loans. This problem can be traced, in part, to the fact that bank loan repayments are insensitive to the borrower's financial circumstances.

The bottom line is that, even though government-assisted conventional loans are a common form internationally of public sector involvement in higher education financing, such an approach has several apparently very significant weaknesses.

The Costs and Benefits of ICL

A final approach to student financing involves income contingent loans, such as Australia's Higher Education Contribution Scheme (HECS), introduced in 1989. The attraction of these schemes is that they can be designed to avoid the problems associated with alternative financing policies.

First, there is no concern with intrafamily sharing so long as the scheme is universal. That is, no student would be denied access through the imposition of means-testing arrangements that could exclude some whose parents or partners are unwilling to help.

Second, given an efficient collection mechanism, there is no default issue for the government. That is, if the tax system is used to collect the debt (at least for Australia, this is essential because the Australian Taxation Office is the only institution with reasonably good information on a former student's income), it is extremely difficult for the vast majority of graduates to avoid repayment. There is a small default issue in that some students will not pay back in full, because income contingent systems are designed to excuse some former students' payments because their lifetime incomes are too low. Harding (1995) calculates that the total repayments remaining uncollected because of the nature of HECS would be of the order of 20% for the original scheme (when the repayment conditions were much more generous for the student (before the 1996/1997 changes)). Other reasons loans may not be repaid include death and emigration.

Third, because repayments depend on income, there should be no concerns by students with respect to an incapacity to repay the debt. That is, once an individual's income determines repayment, and so long as the repayment parameters are sufficiently generous, it is not possible to default because of a lack of capacity to pay. This is the critical practical advantage of income contingent collection schemes – unlike any other form of assistance, there is insurance against default.

Income contingent schemes have significant advantages over alternative financing arrangements, in that they can be designed to avoid the major problems of their alternatives. This, however, does not make such approaches a panacea generally: for an income contingent scheme to be made operational, it is essential that there is an efficient administrative collection mechanism.

The matter of collection is of great importance for the introduction of ICL in countries without the necessary institutional apparatus. Chapman argues that the minimum conditions for a successful income contingent loan seem to be:

1. accurate record keeping of the accruing liabilities of students;
2. a collection mechanism with a sound, and if possible, a computerized record-keeping system; and
3. an efficient way of determining with accuracy, over time, the actual incomes of former students.

While most OECD countries will have income tax systems that enable efficient collection of income contingent debts, it is very unlikely that developing countries have the capacity to meet the third requirement mentioned above.

International Reforms in Student Loan Systems

Background

Friedman's suggested policy response to the capital market problem involved a type of graduate tax in which former students would repay their debts as a percentage of their incomes for a given period of time. It was not until the 1970s that a more conventional ICL arrangement was first introduced, unsuccessfully, by Yale University. The policy approach received a major boost involving the use of the national income tax system for collection with the introduction of the HECS in Australia in 1989, followed by quite similar policy reforms in other countries. These experiences are now reviewed briefly.

The Yale Plan

Yale University introduced an ICL in 1972, which was extended in 1976 but discontinued several years later. Apart from loans being repaid depending on income, the scheme had the feature of the borrowing being of the form of a group loan, in which there was mutual responsibility between members with respect to the repayment of the total debt. Chapman (2006a, b) categorizes the Yale scheme as a risk-pooling ICL.

Individual repayments were not unlimited, however, with a cap being defined at 150% of the borrower's loan. This then became a buyout option for former students wishing to discontinue in the program (Palacios, 2003). 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. High initial default rates eventuated, predicted by Nerlove in 1975, because of moral hazard, and the scheme was discontinued. One of the major problems with the Yale scheme was that the university was ill-equipped to act as the collection agency.

Sweden

Prior to 1988, Sweden had a student loan system with fixed repayments and heavily subsidized interest rates. In 1988, repayments were made a flat 4% of income, with less-subsidized interest rates. In 2001, following concern about interaction between these income contingent repayments and the country's already high marginal income tax rates, this scheme was replaced by one in which repayments are initially low, then increase based on a formula that takes into account the students' outstanding debt, the prevailing interest rate, and an annual escalator (Usher, 2005). There is little available evidence of the effect of the scheme.

Australia

As noted, in 1989 Australia instituted a broadly based risk-sharing ICL charging system for higher education, known as the HECS, which seeks to recover a part of tuition costs, and the system does not involve student income support. In Australia, student income support takes the form of means-tested grants. Students incur a debt which is repaid according to future incomes, there being at the time a first threshold of repayment of around average Australian earnings. The Australian Tax Office is the collection agency.

Payments are progressive and, after the debt is incurred, there is a real rate of interest of zero. However, the interest rate regime is more complicated than this, because if a student chooses to pay upfront they (currently) receive a 20% 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 parental contributions.

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 socioeconomic mix and access are as follows:

1. the introduction of HECS was associated with aggregate increases in higher education participation; and
2. 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 does not 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. Indeed, an important finding from many disparate case studies is that the socioeconomic mix of higher education students seems fairly insensitive to funding regimes. That is, marked changes in the levels, incidence, and nature of grant, as well as 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 other important finding from HECS is that the collection of the debt is apparently quite efficient in administrative terms. That is, the Australian Tax Office estimates put the collection costs at around $25 million

annually, or less than 3% of yearly receipts. Administratively, the system seems to have worked well.

New Zealand

Third, after Sweden and Australia, New Zealand adopted an ICL scheme in 1991 that 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, but now the nominal rate is zero so there is a negative real rate of interest; and
- until recently, universities were free to set their own fees.

A potential advantage of the New Zealand scheme is that universities have discretion over the prices charged, and receive the tuition revenues directly. This implies that in New Zealand there is the prospect of resource allocation effects within the higher education system as a result of the direct nexus between the prices charged and the revenue received. In 2005, the Australian government suggested reforms that were more along these lines. There is little direct evidence of the effects of the New Zealand ICL on the access of disadvantaged prospective students.

The Republic of South Africa

The Republic of South Africa introduced an ICL 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. While bursaries could have been used instead of ICL, 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% of South Africa's higher education students.

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

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 $US5000 is very much lower than the thresholds used in other countries' ICLs. 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 apparently not maintaining expected debt repayments. It is unclear how much this adds to administrative costs, but it would seem to suggest that collection would necessarily be relatively expensive. Jackson argues that the annual administrative costs are less than 2% of the total value of loans distributed. The more important figure, however, would be costs as a proportion of revenues collected – data not reported.

The UK

Higher education financing policy over the last 15 years or so in the UK has been characterized by considerable change. In 1990, a loan scheme was introduced, but collection was not based on a former student's income. In 1997, an ICL was initiated which took the following form: students from poor backgrounds were excused from paying any tuition, while students from rich families incur the entire debt. In between, the debt obligation is determined by means of a sliding scale. This decision seemed to reflect a concern by the government that relatively disadvantaged students would be more likely than others to find an ICL a deterrent to higher education participation, a view at variance with the evidence from the HECS experience reported above. In 2006, the UK government announced further reforms to higher education financing. The major changes are:

- the introduction of price discretion for universities, but with a cap of 3000 pounds per full-time student year; and
- the introduction of tuition for all students, but with the poorest being provided with subsidies.

As with the Australian and New Zealand schemes, the UK ICL policy is likely to be relatively inexpensive to administer. This is because income tax arrangements in these countries greatly facilitate the operation of ICL. As pointed out by Chapman, this is far from the case with respect to developing countries, where public administrative challenges related to the collection of ICL loom large.

The US

In 1993, the Clinton administration introduced broadly based reforms to student loan programs. One noteworthy aspect of the reforms included an option for students to adopt income contingent repayments for some part of their loan obligations, with the ICL obligation being 20% of disposable income.

The ICL reforms introduced in the US have not worked well. With respect to takeup, for example, in 1999 only 7% of the eligible student population initially chose to repay their loan obligations through the ICL option, although 26% of borrowers consolidating (bundling) their loans choose ICL repayments. The basis for low takeup of ICL in the US seems to have two, arguably closely related, explanations. In broad terms, these are: the poor design characteristics of the scheme; and the government's ineffectiveness in accurately explaining and publicizing the scheme's implications for student debt and repayment obligations. It is possible that both weaknesses reflect a lack of ICL policy commitment on the part of those with US policy influence. As of mid-2007, the US Congress was considering legislation that would substantially expand the income contingent component of its existing loan programs.

Other Countries

Other countries have introduced ICL systems, but in general it is not obvious that these have been successful. Chile's 1994 scheme ran into significant collection problems (the tax system was not used), and the Thailand ICL reforms of 2006 have now been suspended arguably in part because of concerns with both the extent of taxpayer subsidies and matters of collection. Israel is close to implementing an ICL, and there are active debates concerning the costs and benefits of such arrangements underway in a large number of countries.

Conclusion

As variations between countries and over time may indicate, there are no definitive answers to how higher education should best be financed. Nevertheless, as indicated above, there is a trend toward both decreases in direct taxpayer support and increased reliance on student loans, particularly those with income contingent repayments. International organizations such as the OECD, International Monetary Fund (IMF), and World Bank routinely recommend their members move in this direction, and the OECD, for example, describes income contingent student loans as international best practice. This assessment, however, is based in large part on economic reasoning rather than solid evidence, although data consistent with the predictions of the conceptual arguments are accumulating. A critical issue concerns the collection of ICLs, and it is difficult to believe that for many developing countries that this approach can currently work.

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