Higher Education Financing and Inequality
The Critical Role of Student Loan Scheme Design: Illustrations from Indonesia, Vietnam and Thailand

By Bruce Chapman

Introduction

Many Asian countries in recent decades have experienced relatively rapid economic growth and significantly expanded enrolments in, and graduations from, higher education. This is no coincidence: higher education is both a contributor to, and is caused by, economic growth. As economies become richer and more sophisticated, employers' demand for highly skilled labor expands and, concomitantly, there is an associated increase in the supply of young prospective higher education participants. Formal education is a critical determinant of individuals' economic welfare generally, so expanded supplies of highly educated people inevitably affect income inequality.

Two important roles for government in these processes seem to be incontestable: one, to provide appropriate funding mechanisms and assistance to ensure that required levels of higher education expansion are able to be met; and two, to design public policies related to this goal in such a way as to increase rather than decrease the participation in higher education of the relatively disadvantaged.

This paper relates to both and examines the critical higher education policy issue of student loans. It is explained that government intervention in the form of student loans is a necessary aspect of higher education, on both efficiency and equity grounds. Given the well-recognized failure of capital markets to assist in the financing of these investments (Friedman, 1955), governments of nearly all countries provide various forms of intervention and subsidies to both help reduce inequalities in access to higher education and ensure that there are sufficient higher education graduates to underwrite economic growth.

Many countries use financial assistance instruments such as means-tested grants and student loans, with the latter type of intervention taking two broad forms, government guaranteed mortgage-type loans (often provided by commercial banks) and income contingent loans (ICL) (Chapman, 2006). There is a considerable literature[1] analyzing student loan policies, with a recent and key contribution focusing on the difficulties debtors might face in the repayment of their loans. So-called repayment burdens (loan repayments as a proportion of future lifetime and age-specific incomes) (RBs) are an extremely important design aspect of loans and expectations of their level have the strong potential to influence both the take-up of loans and the default risks for potential students.

In this chapter, and for the first time, estimates are presented of expected RBs for mortgage-type student loans schemes for both Indonesia and Vietnam, and this is done in a comparative context with RBs calculated for Thailand. Critically, and following the methods designed for

and developed in Chapman and Lounkaew (2010a, 2010b), Chapman, Lounkaew, Polsiri, Sarachitti, and Sitthipongpanich (2010), Chapman and Liu (2012, underway), Chapman and Suryadarma (2012, underway) and Chapman and Sinning (2011), the exercises have been undertaken with the use of unconditional quantile regression modelling with respect to income determination, which has the major advantage of illustrating the difficulties faced by student debtors who experience low graduate incomes in the future.

It is revealed that RBs are likely to be high for a significant minority of graduates in all three countries, but that for prospective students in Indonesia and Vietnam the repayment difficulties are revealed to be so problematic that the traditional mortgage-type student loan approaches to higher education financing in these countries are likely to prove to be unworkable. A different student financing method is needed, and how it might work and the associated administrative difficulties are explained briefly in the conclusion.

Understanding the role of government and student loan schemes in higher education financing policy

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 up-front 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 labour 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 (2003) and Chapman (2005):

(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 with, in Australia for example, around 25 per cent of students ending up without a qualification;

(ii) 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;

(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 at the time it began 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 for both borrowers and lenders. The important point is that if the future incomes of students 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. 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. And 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 non-attainment 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 income contingent loans. 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 is used in many countries is the provision of student loans — either directly by the government or indirectly through guarantees to banks. This is the case in, for example, Thailand, Canada, the US and some parts of China. 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 both repayment hardship and ultimately even of default.

Students face an important issue when committing to repay conventional student loans. This is that some may be reluctant to borrow for fear of not being able to meet future repayment obligations, or of undergoing considerable stress in making loan repayments

because of potentially low incomes. 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, for example, for the purchase of a house). These concerns imply that there will be less borrowing than there would be in the absence of these repayment burden and default concerns.

The prospect and consequences of a student expecting repayment hardships and/or 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 essentially 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. Moreover, it would seem to be obvious that the students with these sorts of concerns are much more likely to come from disadvantaged backgrounds, since it will be these prospective debtors who will be unable to access financial assistance in repaying loans if they end up in low income circumstances in the future. This is the critical connection between the design of student loans and the access of education to poor prospective students in developing countries in particular.*The costs and benefits of income contingent loans*

A second approach to student financing involves income contingent loans, such as Australia's Higher Education Contribution Scheme (HECS), introduced in 1989. HECS works as follows. Students are able to enrol in higher education by agreeing to pay tuition charges contingent on their future incomes. These debts, which are typically of the order of $(A)20-25,000 for a four year degree, are recorded against the student's unique tax file (essentially social security number) in the Australian taxation office (the internal revenue service). Payments are collected by employers in the same way that income tax is collected, with their being no repayment obligations until debtors earn around $50,000 per annum when four per cent of income is used to start repaying the debt. This is also how income contingent loans work in New Zealand and England[2].

The attraction of these schemes is that with the use of a straightforward insurance mechanism they can be designed to avoid the problems associated with alternative financing policies.

First, 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 students' income), it is extremely difficult for the vast majority of graduates to avoid repayment. Second, because repayments depend on income, there should be no concerns by students with respect to 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 experience repayment hardships

or default because of a lack of capacity to pay. These insurance benefits are the critical practical advantages of ICL.

While ICL schemes have significant advantages over the alternative financing arrangements of mortgage-type loans, this does not make such approaches a panacea generally, however. For an ICL 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 income contingent loans in countries without the necessary institutional apparatus. Chapman (2006) argues that the minimum conditions for a successful ICL seem to be:

(i) accurate record-keeping of the accruing liabilities of students;

(ii) a collection mechanism with a sound, and if possible, a computerised record-keeping system; and

(iii) an efficient way of determining with accuracy, over time, the actual incomes of former students.

Most OECD countries will have income tax systems that enable efficient collection of income contingent debts many developing countries, including Indonesia and Vietnam, do not apparently have the capacity to meet requirement (iii). While ICL are not examined further in this paper, it is useful to note their advantages compared to the effects of mortgage-type loan schemes examined below. This is particularly apposite given the illustration of the major problems associated with the RBs in all of the countries examined.**Motivating Analysis of Repayment Burden***s What Is a Loan Repayment Burden?*

Education economists and others have examined the concept and implications of student loan repayment burdens for more than a quarter of a century.[3] Defined simply in a comparative static context, a loan repayment burden is the proportion of a person's per period income that needs to be allocated to service a debt per period, or, formally:

$$\text{(1)} \qquad \textit{Repayment burden in period } t = \frac{\textit{Loan repayment in period } t}{\textit{Income in period } t}.$$

There are several policy design issues usually raised with respect to RBs. The first is that for any given income the higher is a debtor's RB the less consumption and/or savings are possible. This is of importance in comparisons of different student loan policies: specifically, mortgage-type loans (such as are used in Thailand, the US and Canada) are quite different to ICL. This is due to the fact that the latter are explicitly designed to avoid high repayment burdens and this is achieved through per period debt servicing obligations being capped by legislation.[4]

A second concern is that greater repayment burdens are associated with higher prospects that debtors will be forced to default on loan repayments because of low incomes. This issue is substantiated by the finding of Dynarski (1994) and Gross, Cekic, Hossler and Hillman (2009 that student loan defaulters in the US are much more likely to have low levels of income. "Normal" student loan schemes come with a government guarantee to cover the debts when a student defaults,[5] which means that taxpayers pay. An associated policy issue relates to the provision of interest rate subsidies on student loans,[6] which are presumably designed to diminish consumption hardship and default probabilities.

Woodhall (1987) integrates these concerns by stressing that governments face an balancing act in the design of mortgage-type loan schemes. Specifically, *ceteris paribus*, the lower are interest rate subsidies the higher will be repayment burdens. The design complexities don't end with this obvious trade-off because the lower are interest rate subsidies the greater is the prospect of default, with this adding to taxpayer contributions.

Important research is provided by Shen and Ziderman (2009) which offers calculations of taxpayer interest rate subsidies for a large number of student loan schemes from many countries, and Schwartz and Finnie (2002) which presents repayment burdens for hypothetical debtors in the Canada Student Loans scheme. As well, Chapman, Lounkaew, Polsiri, Sarachitti and Sitthipongpanich (2010) illustrates the very high taxpayer subsidies associated with the Thai Student Loan Fund. With this as policy background we now examine several empirical aspects of the debate.*Repayment Burdens: How Much Is Too Much?*

Do we know what proportion of a debtor's income repayment burdens should be limited to? A definition of what this means in practice is illusory, and different terms are used to imply similar debtor experiences.

For example, Woodhall (1987:15) uses the term "manageable debt" and suggests that this depends "…partly on the level and pattern of graduates' expected earnings, and partly on what students and society regard as a "reasonable" level of debt". Second, Ziderman (1999:82) suggests that loan conditions need to be set so as "…to avoid imposing unduly harsh repayment burdens on borrowers…". Third, Baum and Schwartz (2006:1) argue that the policy design issue is to avoid repayments which would "…impose too heavy a burden on young people leaving school."
Clearly there is not an agreed definition for assessing what constitutes an excessive repayment burden, but there are nevertheless several different pointers for understanding what this might be in practice. The following provide useful indications of a range of views:

(i) "A rough yardstick, used in several countries, is that loan repayments should not exceed 8 to 10% of a graduate's income, and that this should determine the maximum debt that students may incur" (Woodhall,1987, page 15); and

(ii) Salmi (2003) notes that in Venezuala the government loan agency "…has established 15 per cent as the ceiling for monthly repayments." (page 15), and goes on to suggest that "Experience shows that no repayment schedule can be sustainable when the monthly debt exceeds 18 per cent of income".

The most comprehensive analysis is in Baum and Schwartz (2006), which refers to the so-called "8 percent rule", a standard suggesting that "…students should not devote more than 8 per cent of their gross income to repayment of student loans." (page 2). Their paper quotes an extensive literature in support, albeit recognizing the range of suggested boundaries.

However, an obvious point is that if a person's income is very high even a relatively high percentage of this income being used for loan repayment may not constitute a concern. Thus an important point is that if there is a consensus world-wide that it is undesirable for repayment burdens to be higher than, say, 8-18 per cent of a debtor's income, because graduate earnings in the US are relatively high a range in which Stafford repayment burdens approach the excessive could be considered to be at the highest point of the range, and in what follows we use a cutoff of 18 per cent. We stress that there remains no objective rule.*Measuring Expected Incomes in Calculations of Repayment Burdens*

The denominator of equation (1), the per-period income received by student loan debtors, is critical to the exercise. An important point is that significant research so far has used very aggregate proxies of incomes, such as that received by graduates on average. Ziderman (2003), for example, in an analysis of the repayment burdens associated with the Thai Student Loan Fund, compared debt servicing obligations to the earnings of graduates using predictions from Thai earnings functions.

From this Ziderman concludes that "The annual repayment burden in terms of annual income is very light, in the region of only 2-4 per cent annually" (page 83), and adds that "…the Thai student loan scheme is overly generous…which may be effortlessly repaid out of higher income received on courses of schooling." (page 83). However, beyond average graduate earnings there are wide dispersions of income received by graduates, a fact highlighted by the relatively low explanatory power for these models.[7] Like many issues in economics, many of the most interesting empirical aspects concern the tails of the distributions. This point is a major motivation for the analysis that now follows.**Empirical analyses of RBs: loan repayment obligations**

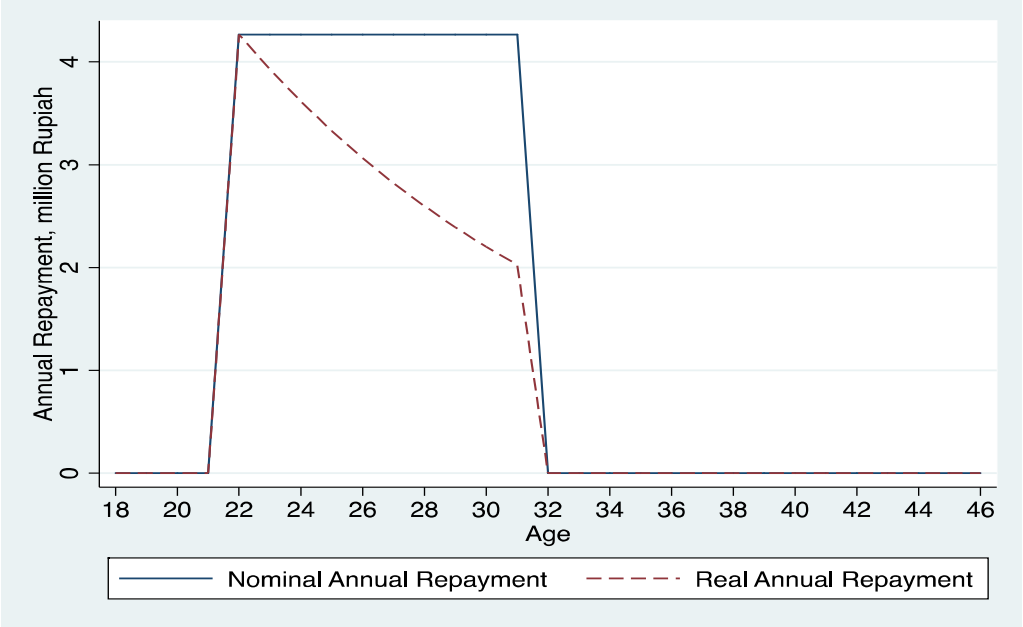
To derive RBs estimates are required for both the nominator and denominator of equation (1) and these will differ for each country. The numerator can be calculated from the characteristics of the student loan under consideration, with the factors pertinent to the expected annual repayments of a student loan being: the amount of money provided in the study period; the rate of interest on the debt; and the time allowed for full repayment of the loan. What now follows describes the student loans for each of the countries under consideration.

The Characteristics of the Loan Scheme: Indonesia

Currently Indonesia does not have a broadly based higher education student loans system, so the system now described is hypothetical but plausible. As a guide to the characteristics of a "standard" student loans system for Indonesia, the following features have been assumed: a total debt per student of 30.4 million Rupiah, which roughly reflects average tuition charges currently charged in Indonesian universities and an estimate for minimal living expenses; a real rate of interest of 3 per cent per annum, and a repayment period of 10 years. These decisions have been informed in part by the levels and structures used in the student loan systems of other countries, such as the US, Canada and Thailand.

Given these assumed debts and parameters Figure 1 illustrates the annual repayment obligations for students borrowing in the hypothetical Indonesian student loan system.

Figure 1
Indonesia Hypothetical Loan Repayments

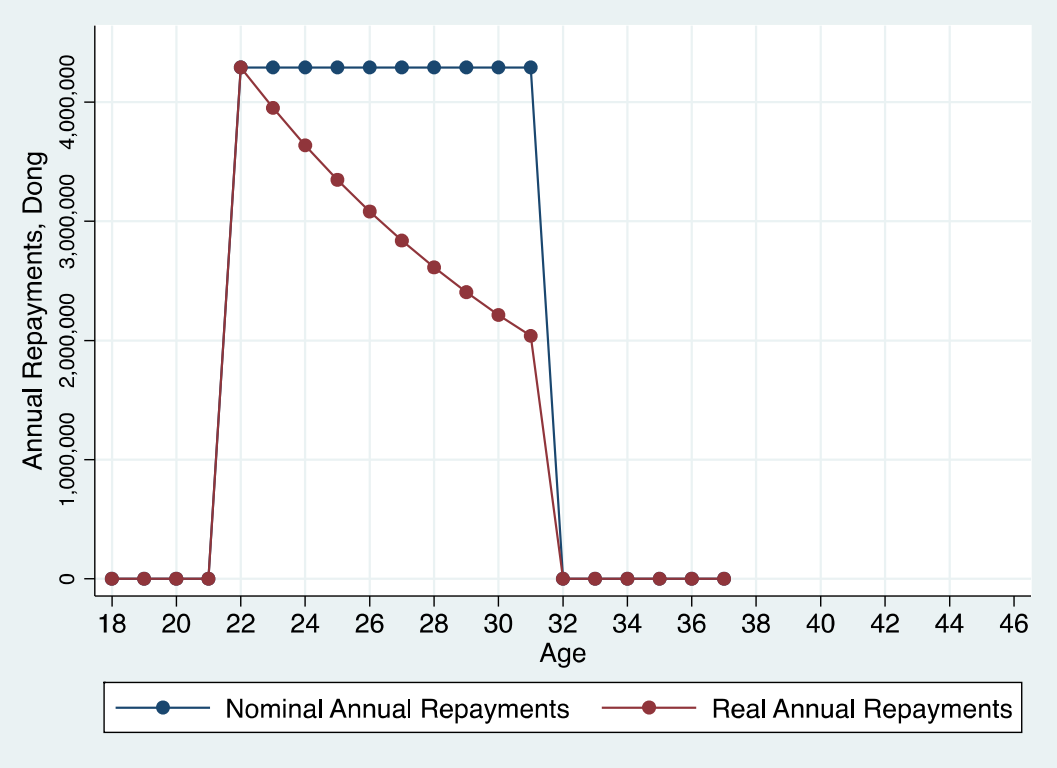


The Characteristics of the Loan Scheme: Vietnam

As is the case for Indonesia, currently Vietnam does not have a broadly based higher education student loans system, and the system now described is again hypothetical but plausible. As a guide to the characteristics of a "standard" student loans system for Indonesia, the following features have been assumed: a total debt per student of 32 million dong, which roughly reflects average tuition charges currently charged in Vietnamese universities and an estimate for minimal living expenses; a real rate of interest of 3 per cent per annum, and a repayment period of 10 years. As with the design of the Indonesian student loan systems these assumptions have been informed by the levels and structures used in the student loan systems of other countries, such as the US, Canada and Thailand.

Given these assumed debts and parameters Figure 2 illustrates the annual repayment obligations for students borrowing in the hypothetical Vietnamese student loan system.

Figure 2
Vietnamese Hypothetical Loan Repayments

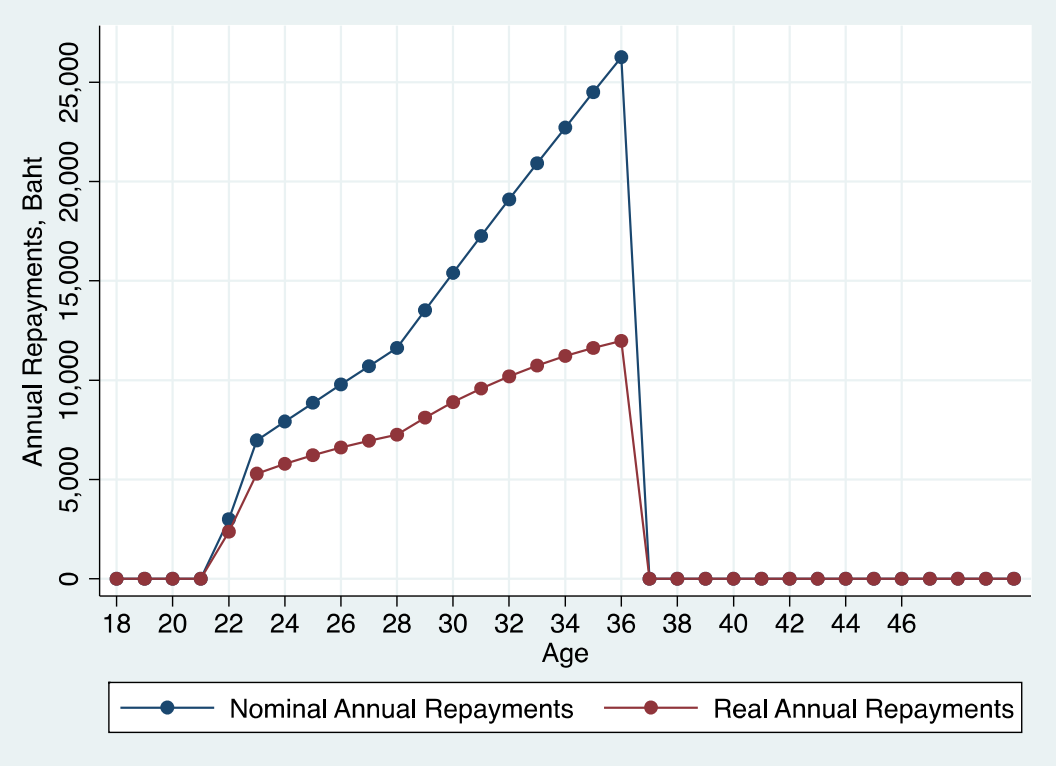


The Characteristics of the Loan Scheme: Thailand

Thailand has had a student loans system, known as the Student Loan Fund (the SLF), in operation since 1997, and its essential characteristics are used in the loan system designed for our exercises. These include a 15 year repayment period, with repayments increasing in both absolute and proportionate terms when the repayment period begins. As well, the typical SLF loan amount of 300,000 baht has been used. However, as demonstrated in both Ziderman (2005) and Chapman *et al.* (2010), the SLF is associated with extremely high interest rate subsidies, and the hypothetical system now under consideration adjusts for this subsidy through the use of a real rate of interest of 3 per cent per annum.

Given these assumed debts and parameters Figure 3 illustrates the annual repayment obligations for students borrowing in the hypothetical Thailand student loan system.

Figure 3
Thailand Hypothetical Loan Repayments



Hypothetical Student Loan Schemes in Summary

This section has explained the methods and data used to construct the numerator of equation (1), RBs, for Indonesia, Vietnam and Thailand. The loan schemes are both hypothetical and illustrative, albeit based closely on the essential characteristics of mortgage-type student loan systems in other countries, and with respect to current tuition levels and living standards in each of the three countries. We now turn to the calculations of the denominator of equation (1), expected future graduate incomes in each of the three countries.**Empirical analyses of RBs: Expected future graduate incomes***Conceptual issues*

A second input for the derivation of RBs estimates involves the denominator of equation (1), the expected future incomes of graduates. Because we are particularly interested in the RBs for relatively disadvantaged the empirical estimates focus on graduate incomes for the bottom 25 and 50 per cent quartiles. Before presenting the data it is useful to examine briefly the technical basis for the use of the unconditional quantile method underpinning the approach.

For the unconditional quantile approach variants of the standard earnings function of the following form can be used:

$$(2) \qquad \ln I_{ij} = \beta_{0j} + \beta_{1j}\text{experience}_{ij} + \beta_{2j}\text{experience}_{ij}^2 + \varepsilon_{ij},$$

where $i = 1, 2, 3, ..., n$ represent individuals; j = graduates differing by income,; I_i is the sum of annual earnings, social security payments and unemployment insurance payouts of individual I,

differentiated by sex. To capture differences in increases of income with age these are also interacted with potential experience and its square, defined as:

Experience = age - time to complete a degree – age at which schooling begins

The unconditional quantile regression (UQR) technique is employed to estimate earnings functions, with this technique being chosen to address the shortcomings associated with the use of OLS, in two senses. The first is that OLS estimates the mean value conditional on the distribution of the dependent variable, with a concern arising if the conditional distribution of dependent variable is skewed, asymmetric, and/or does not have a unique mode. Using OLS estimates may not give robust results, this problem being common in the context of wage determination given the asymmetry in wage distributions.[8]

A second attractive feature of (and the most important reason for us to use) unconditional quantile regression is that it provides a disaggregated picture of income distributions. This advantage is crucial to our analysis of student loans since repayment burdens must be highest for those in the lowest parts of the income distribution (Chapman and Lounkaew, 2010; Chapman *et al.*, 2010), a feature which cannot be captured by the use of standard OLS. Thus we estimate age-income profiles for the 25th and 50th (median) quantiles of income distributions by age, with separate estimations being carried out for males and females.[9]

The unconditional quantile regression method follows Firpo, Fortin, and Lemieux (2009), a technique which relies on a transformation known as re-centered influence function (RIF). The RIF for the quantile of interest, q_τ is

$$RIF(I;q_\tau) = q_\tau + \frac{\tau - D(I \le q_\tau)}{f_I(q_\tau)}, \tag{3}$$

where $f_I(.)$ is the marginal density function of I where D is an indicator function. In practice $RIF(I;q_\tau)$ is not observed, hence its sample counterpart is used instead:

$$RIF(I;\hat{q}_\tau) = \hat{q}_\tau + \frac{\tau - D(I \le \hat{q}_\tau)}{\hat{f}_I(q_\tau)}, \tag{4}$$

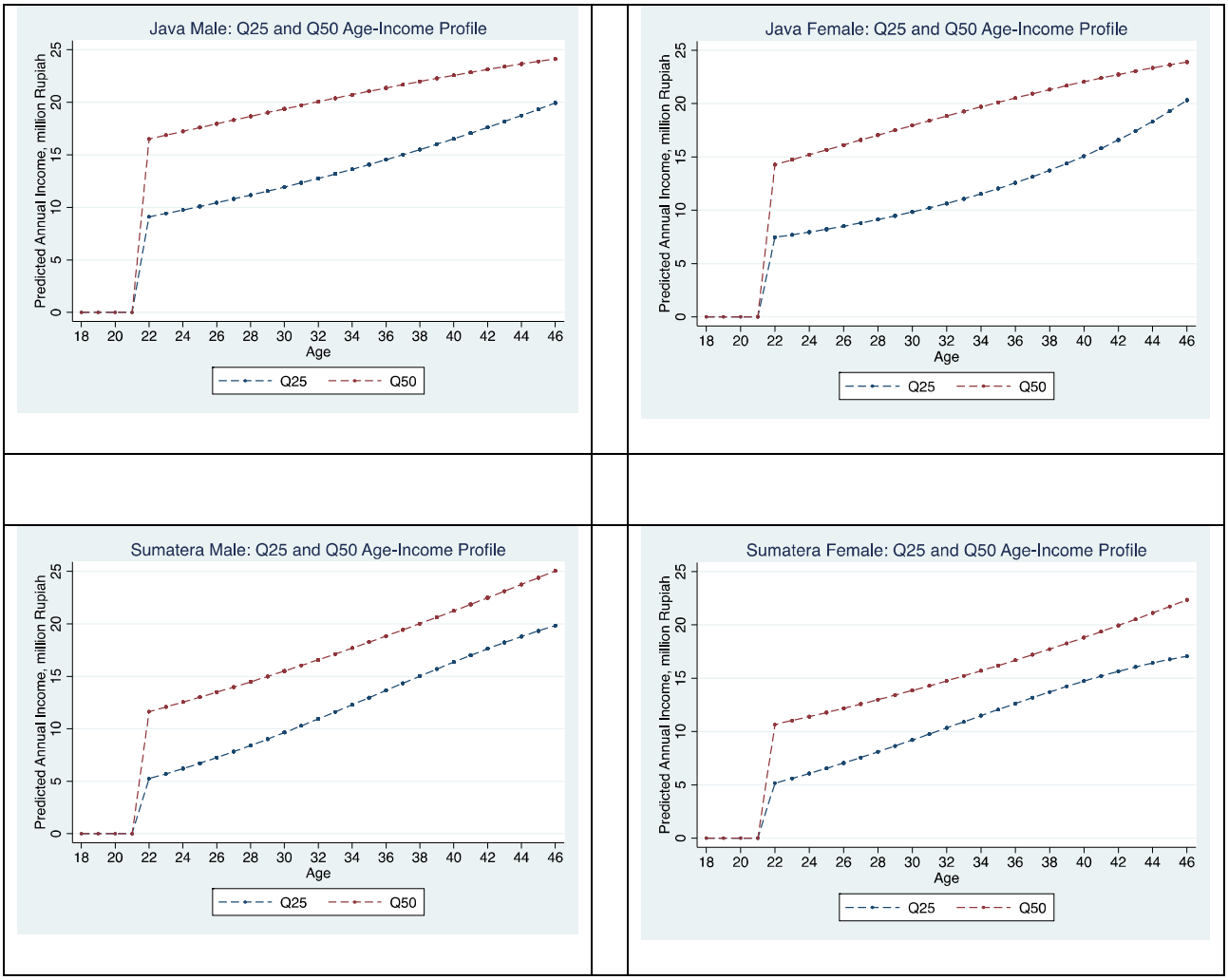
where $\hat{q}_\tau$ is the sample quantile and $\hat{f}_I(q_\tau)$ is the kernel density estimator, with this transformed variable being used in place of the original dependent variable. One crucial distinguishing feature of the UQR is that it provides us with a way to recover the marginal impact of the regressors on the unconditional quantile of I; in the context of this study it is the marginal impact of additional years of potential experience on income of each income quantile. Usual inference procedures of the OLS are also applicable to the UQR estimates.

In what now follows large household surveys of individuals have been used in each of the four countries to illustrate graduate annual incomes by age, separately for males and females with results presented for the bottom 25 and 50 per cent of the graduate income quantils (called Q25 and Q50). Details of the data and econometric results are available in Chapman and Luonkaew (2010), Chapman *et al.* (2010), Chapman and Liu (2012) and Chapman and Suryadarma (2012).

Q25 and Q50 graduate age-income profiles: Indonesia

With the use of data and methods explained in Chapman and Suryadarma (2012), age-earnings profiles have been constructed for Indonesian graduates surveyed in 2009. These exercises allow the calculation of age-income profiles for both male and female graduates in the bottom 25 and 50 per cent quartiles. These have been estimated for two main Indonesian islands, Java and Sumatra, chosen because they represent relatively rich and poor Indonesians respectively. The results are presented in Figure 4.

Figure 4
Male and Female Java and Sumatra Indonesian Graduate Age-Income Profiles: Q25 and Q50



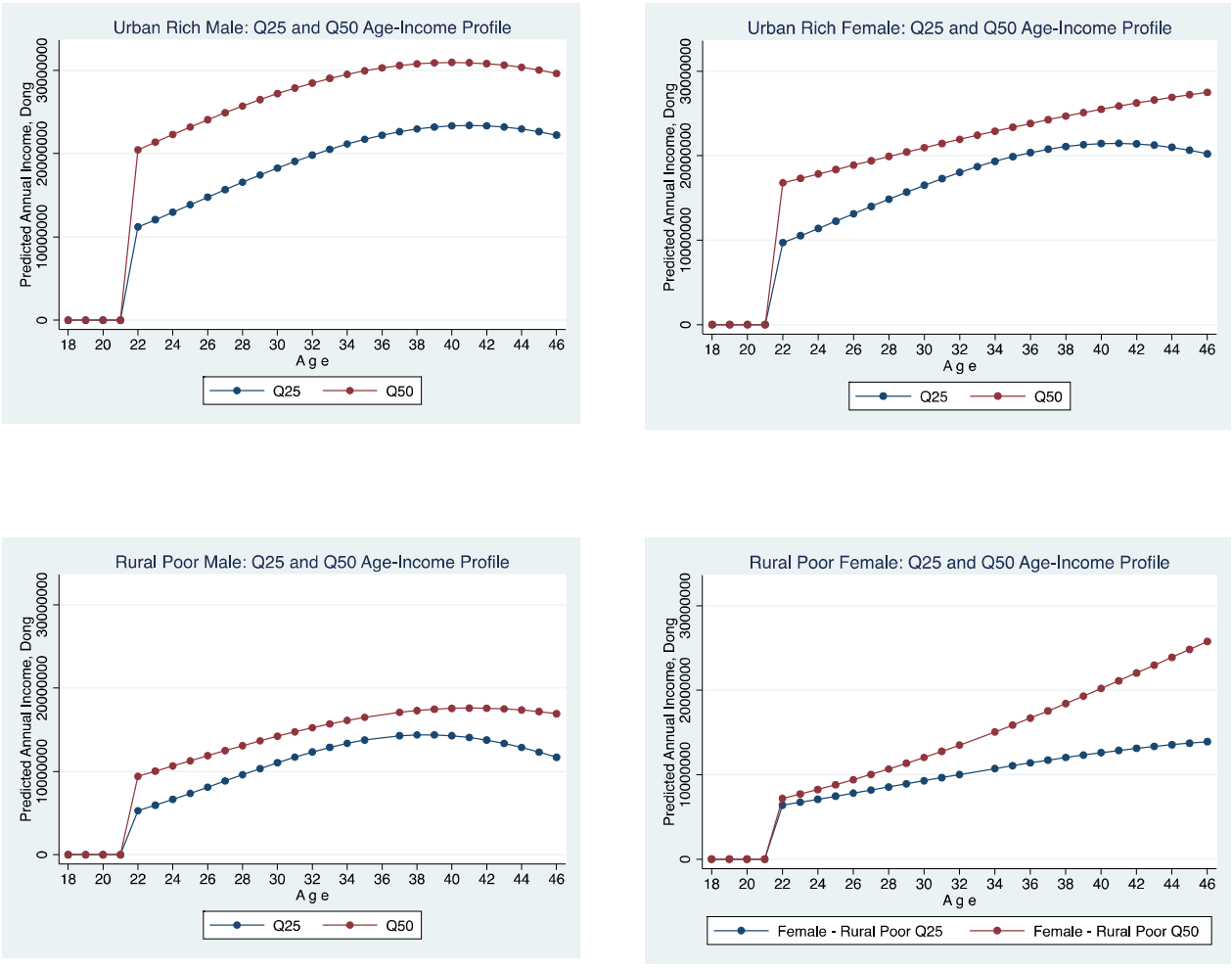
Discussion of the main characteristics and these profiles are provided in Chapman and Suryadarma (2012).

Q25 and Q50 graduate age-income profiles: Vietnam

With the use of data and methods explained in Chapman and Liu (2012), age-earnings profiles have been constructed for Vietnamese graduates surveyed in 2008. These exercises allow the calculation of age-income profiles for both male and female graduates in the bottom 25 and 50 per cent quartiles. These have been estimated for both relatively rich urban and relatively poor rural areas in Vietnam, chosen because these areas allow insights into the ranges of the income data by region. The results are presented in Figure 5.

Figure 5

Male and Female Rich Urban and Poor Rural Vietnamese Graduate Age-Income Profiles: Q25 and Q50



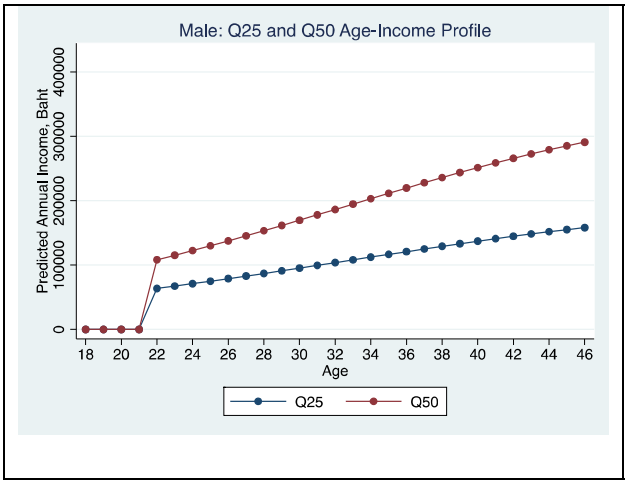
Discussion of the main characteristics and these profiles are provided in Chapman and Liu (2012).

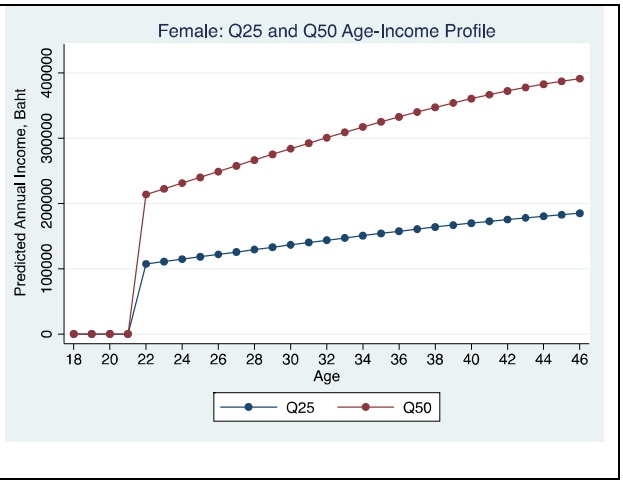
Q25 and Q50 graduate age-income profiles: Thailand

With the use of data and methods explained in Chapman and Lounkaew (2010), age-earnings profiles have been constructed for Thai graduates surveyed in 2008. These exercises allow the calculation of age-income profiles for both male and female graduates in the bottom 25 and 50 per cent quartiles. The results are presented in Figure 6.

Figure 6

Male and Female Thai Graduate Age-Income Profiles: Q25 and Q50





Discussion of the main characteristics and these profiles are provided in Chapman and Lounkaew (2010) and Chapman *et al.* (2010).

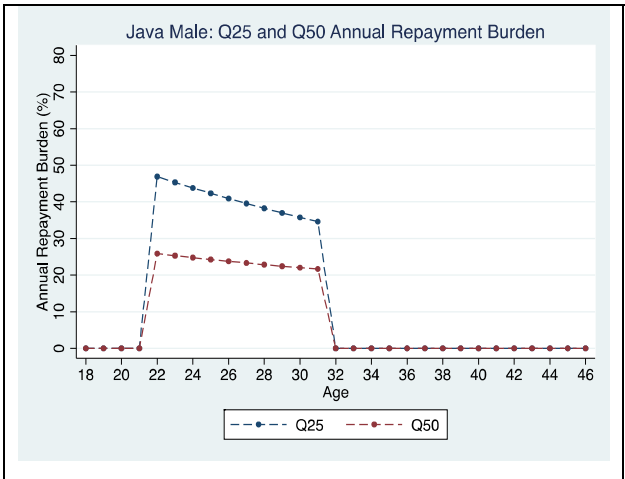
Repayment Burdens for Indonesia, Vietnam and Thailand

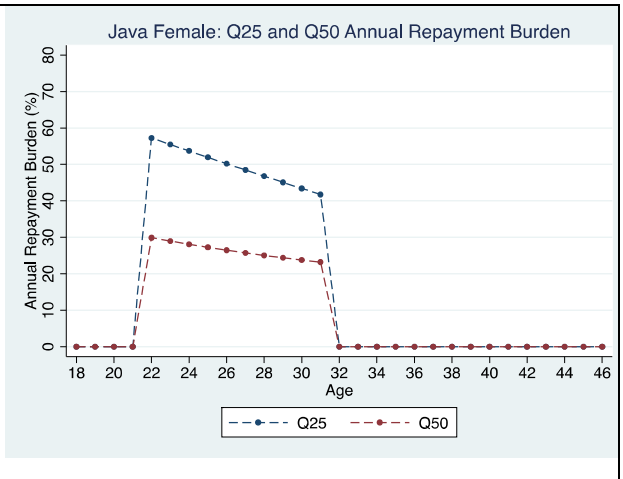
The exercises and results presented in Sections 3 and 4 now allow estimations of RBs for the poorest graduates in Indonesia, Vietnam and Thailand, for the hypothetical (yet plausible) loan schemes constructed for each of these countries. These are now examined.

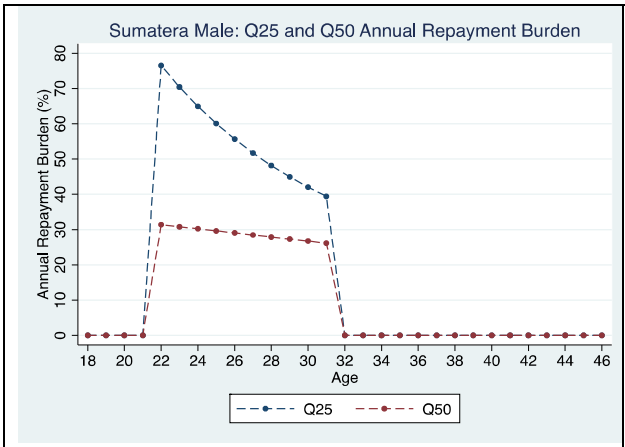
RBs for Indonesia

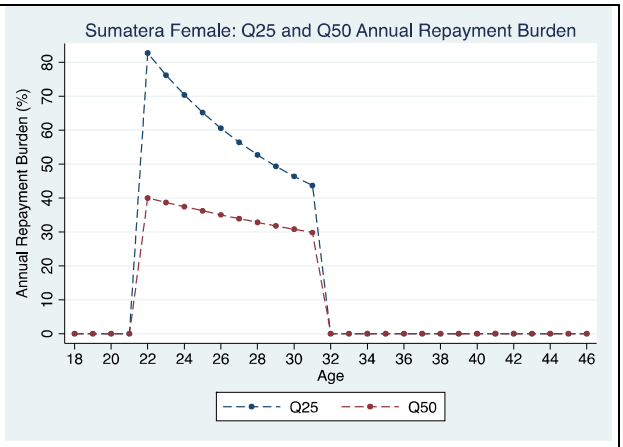
Figure 9 presents calculations of the annual RBs for Q25 and Q50 Indonesian graduates.

Figure 9
Java and Sumatra Male and Female Annual Repayment Burdens









The critical points from Figure 9 are:

(i) For relatively advantaged graduates (Q50, living in Java) the RBs are of the order of 20-30 per cent per year;

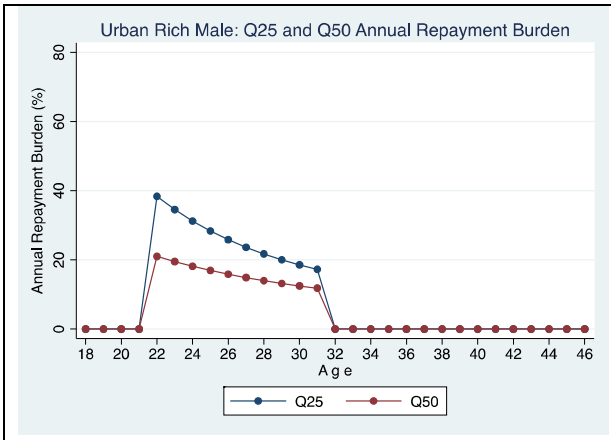
(ii) In the highest income island of Java, graduates in the lowest quartile of incomes have RBs of the order of 35-60 per cent per year;

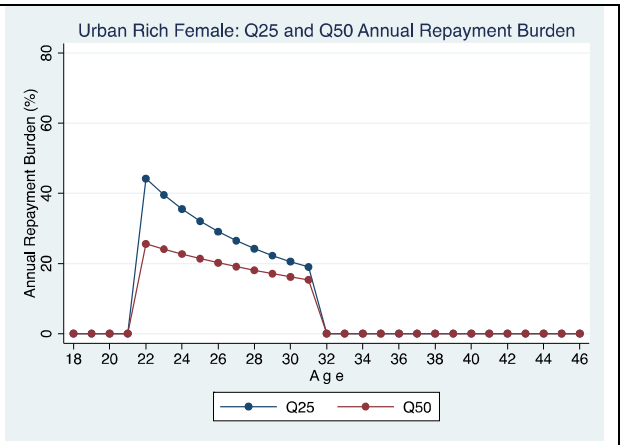
(iii) In the low income island of Sumatra, median income graduates face RBs of the order of 25-40 per cent per year; and

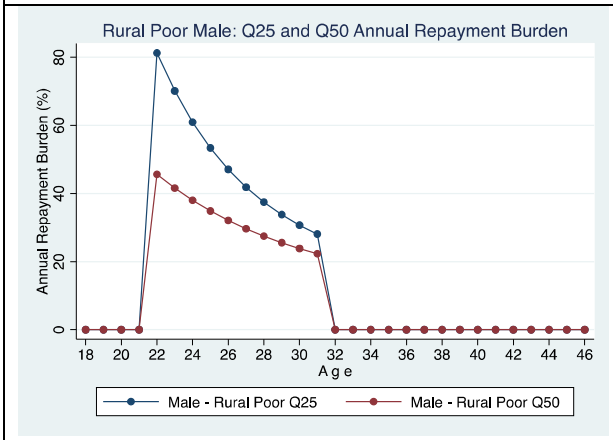
The lowest income graduates examined, graduates in the lowest quartile of income living in Sumatra, RBs are of the order of 40-85 per cent per year.*RBs for Vietnam*

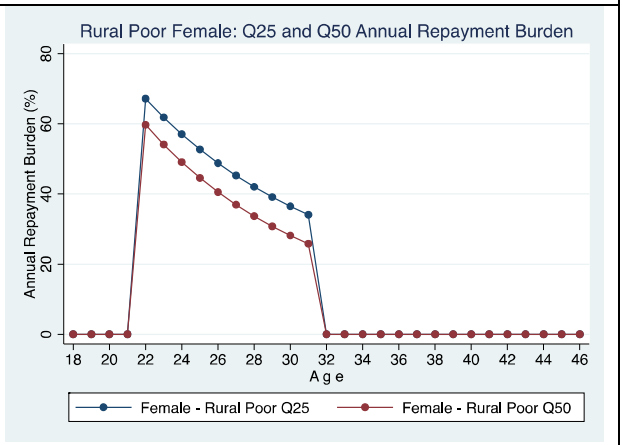
Figure 10 presents calculations of the annual RBs for Q25 and Q50 Vietnamese graduates.

Figure 10
Rich Urban and Poor Rural Male and Female Vietnamese Graduate Annual Repayment Burdens









The critical points from Figure 10 are:

(i) For relatively advantaged graduates (Q50, living in urban relatively rich areas) the RBs are of the order of 15-25 per cent per year;

(ii) In the highest income areas of Vietnam, graduates in the lowest quartile of incomes have RBs of the order of 20-45 per cent per year;

(iii) In the poorest areas of Vietnam, median income graduates face RBs of the order of 20-60 per cent per year; and

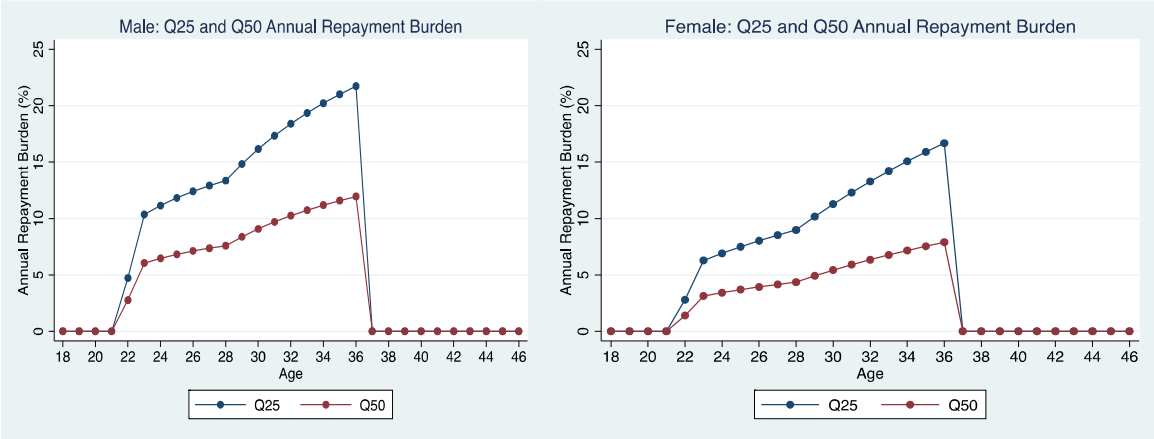
(iv) The lowest income graduates examined, graduates in the lowest quartile of income living in the poorest parts of Vietnam, RBs are of the order of 30-80 per cent per year.

RBs for Thailand

Figure 11 presents calculations of the annual RBs for Q25 and Q50 Vietnamese graduates.

Figure 11

Male and Female Thai Graduate Annual Repayment Burdens



The critical points from Figure 11 are:

(i) For relatively advantaged Thai graduates (Q50) the RBs are of the order of 4-12 per cent per year; and

(ii) For relatively poor graduates (Q25) Thai RBs are of the order of 8-22 per cent per year.

Conclusions

In this chapter we have explored in both conceptual and empirical contexts the issue of repayment burdens for conventional student loans in three countries, Indonesia, Vietnam and Thailand. The context is that many emerging economies are facing, or will soon face, significant issues of expansions in higher education financing, and these will inevitably involve the institution and/or the redesign of student loan programs. These are very important issues for both economic growth and income distribution.

There is a major issue associated with the typical form of student loans, involving mortgage-type repayments with given periods of expected repayments, and this is known as the "repayment burden". RBs are given by the proportion of a graduates' income that will be required to repay a student loan. Critically, if RBs are very high, this will potentially involve significant hardships for graduate debtors and associated high risks of loan default.

To illustrate how important this issue might be, student loans systems have been designed for both Indonesia and Vietnam, and RBs have been calculated for the lowest earning graduates in poor and less poor areas of both countries. This allows comparisons to be made with previous research involving Thailand. In all cases the finding is clear: RBs for the lowest income graduates in both Indonesia and Vietnam can be extremely high, around 40-80 per cent in many cases; they are smaller (10-25 per cent) yet empirically important in Thailand as well. These results promote for debate the critical importance of student loan design.

There are two possible solutions to the problem of RBs examined above. One is labor productivity growth which over time will increase graduate incomes and diminish the

empirical and policy issue of high RBs; the relatively high per capita incomes in Thailand illustrate that RBs are very sensitive to national productivity levels. However, given the extent of the current and expected near-future problem, this will only be a medium term solution to the issue for many countries including Indonesia and Vietnam.

Second, there is a loan scheme which avoids the RB problem, known as income contingent loans, explained briefly in the Australian context earlier. With ICL the maximum proportion of a graduate's income to be used in the repayment of a student loan is set by law (and is, for example, 8, 9 and 10 per cent of income in Australia, New Zealand and England). But ICL require a sophisticated loan collection agency, such as a comprehensive internal revenue service (tax office) and without this type of institution loan repayment leakages are likely to be high[10]. The case for both economic growth and governmental institutional reform to help resolve higher education financing difficulties are incontestable for many emerging economies.

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Endnotes

Acknowledgements: Conference participants provided useful feedback, Wendy Dobson in particular.

[1] Previous studies have investigated student loan schemes in many countries, for example, Australia (Chapman & Ryan, 2002; Chapman, 2006), Europe and the US (Johnstone, 1986), Africa (Johnstone & Amero, 2001; Johnstone, 2004), South East Asia (Ziderman, 2004) and developing countries more generally (Woodhall, 1987).

[2] For analysis of the Australian system, see Chapman (2006).

[3] See Woodhall (1987), Ziderman (1999), Schwartz and Finnie (2002), Salmi (2003) and Baum and Schwartz (2006).

[4] In the Australian income contingent college loan scheme, for example, the maximum percentage of taxable income of the debt that is repaid is 8 per cent per annum.

[5] It is commonly understood that the commercial financing sector will not provide loans to students because of their lack of collateral in the event of default (Friedman, 1955; Barr, 2003; Chapman, 2006).

[6] For recent analyses see Ziderman (2003) and Chapman and Lounkaew (2010).

[7] For example, Chapman and Lounkaew (2010) found R^2 of around 0.4 for Thai earning functions; a plethora of other earnings function studies typically explain no more than 20-30 per cent of the variance.

[8]Many recent studies have used disaggregated approach to analyse wage distribution and wage determination (Buchinsky, 1994; Machado and Mata, 2001).

[9] These profiles have been adjusted using OLS standard errors (see Wooldridge, 2006).

[10] Some of the costs of ICL are administrative and discussion is provided in Chapman (2006). Issues of moral hazard, and the issues of emigration matter too (see Chapman and Higgins, 2012).