

Government Managing Risk

**Income contingent loans for
social and economic progress**

Bruce Chapman



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In recent years there has been a world-wide movement towards the use of income contingent loans (ICLs) for higher education. ICLs are now used in six countries following the Australian innovation of 1989, with the governments of many more countries looking very seriously at the model.

Government Managing Risk presents an extensive conceptual and empirical analysis of the world's first national ICL for higher education as well as exploring the experiences of a number of other countries adopting ICLs.

Bruce Chapman prescribes an important, new role for income contingent loans, demonstrating the extraordinary potential ICLs have to change radically the nature of social and economic policy interventions. ICLs can be seen as a remarkably flexible government risk instrument. He presents analysis of a number of disparate case studies to illustrate how ICLs can aid risk management policy reform in both progressive and administratively feasible ways.

These case studies are: the provision of drought relief, the collection of low-level criminal fines, the imposition of penalties for white-collar crime, the financing of social investment community projects and the provision of housing credits for low-income earners. In all these examples solutions to the important problems of moral hazard and adverse selection are examined, and the nature and form of the associated administrative arrangements for collection are explored. Further ICL policy possibilities are suggested.

Bruce Chapman is a Professor of Economics at the Australian National University. In 1988 he was instrumental in motivating and designing the world's first national income contingent loans scheme for higher education: Australia's Higher Education Contribution Scheme. Over the past decade he has provided advice and analysis of ICLs for the governments of a large number of countries.

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For my parents, Hazel Chapman (deceased) and Jim Chapman. They had few opportunities but valued education for my brother Alan and myself, and they always promoted equity and justice. The choice I made concerning who my parents should be remains the best decision of my life.

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Preface

This book began as an idea around October 1987. At the time I was offered a job as a consultant to the then Australian Federal Minister for Employment, Education and Training, the Honourable John Sydney Dawkins. Mr Dawkins intended at that time to reintroduce charges for Australian higher education students, which had been abolished in 1973. My job, he said, was to write an options paper on university fees to be included as a chapter for a government Green Paper on university reform.

I produced the paper towards the end of the year. Several financing options were analysed, but it was clear that the paper favoured the introduction of an income contingent charge instead of either fees and scholarships, or fees and means-tested bank loans. He asked me which countries currently used such a system, and I told him 'None'. He asked me if I thought it could be done administratively, and I said 'I don't know'. He asked me when the government could expect to get a lot of revenue and I said 'Not for maybe four or five years'. Broadly speaking things didn't look overwhelmingly positive at the time for what later turned out to be the Higher Education Contribution Scheme (HECS).

HECS can be put into a category of public sector financing policy: it is a risk-sharing income contingent loan. Students incur a debt which is repaid only when and if their income exceeds a certain amount, and repayments are progressive (the repayment rates increase with income). Repayments cease when the debt obligation is met. HECS was the main game in the discussions undertaken by a committee set up by John Dawkins to consider the options paper. It was chaired by a former State Premier and an Australian Labor Party icon, Mr Neville Wran, and the members were Dr Meredith Edwards of the Commonwealth Department of Social Security, Mr Mike Gallagher from the Department of Immigration, Local Government and Ethnic Affairs, and Professor Bob Gregory of the Australian National University. It was assisted by a superb Secretariat, led by Ms Alison Weeks. The policy was introduced in 1989.

Through the course of the discussions surrounding and following the implementation of HECS it became clearer what the broader implications of the scheme were. Instead of facing the prospect of reneging on a bank

loan payment, students were protected from default because they only had to pay when they were able to. And having repayments based on capacity to pay also meant that HECS had a feature which was later understood to be consumption smoothing.

In the years following the introduction of HECS I became very interested in pursuing the potential of income contingent loans in a host of other areas. The first example involved me being employed to review the Australian higher education student income support scheme, AUSTUDY, in 1993. AUSTUDY at the time was a means-tested grants based scheme, and my report, written with the help of Mr Damian Smith, recommended that the grants be supplemented through offering students the option of trading-in some proportion of their assistance for an income contingent loan, repaid according to the HECS parameters. This was adopted in Australia in 1993/94 (discontinued in 2004), and was known as the AUSTUDY Loans Supplement.

Other income contingent loan applications seemed to have potential. I can remember in 1994 (unsuccessfully) promoting the notion that the grants being offered to farmers for drought relief would be a lot fairer if they took the form of an income contingent loan. This was the beginning for me of Chapter 7, written much later with Linda Botterill. Linda's rich understanding of drought policy ensured that this could be done sensibly.

In 1997 my friend and colleague John Quiggin suggested that the basis of HECS could be used for the collection of low-level criminal fines. With the assistance of two criminologists, Arie Freiberg and David Tait, this turned into a conference paper, then a published article. A version of this work became Chapter 8.

In the late 1990s Richard Denniss and I discussed the potential for income contingent loans to be used in other areas of criminal activity. Specifically, there seemed to be a useful prospect for using an income contingent loan for the collection of penalties for offenders engaged in insider trading, and on profits for companies found guilty of collusion. What makes these possibilities very interesting is Richard's suggestion for the use of financial rewards for whistle-blowers with respect to both of these activities. Our discussions lead to a published paper with a version resulting in Chapter 9.

In 2001 a senior Australian Labor Party person suggested to me that ICLs could be used to encourage social community investment projects, and asked if I would develop such an idea. I knew I couldn't do this properly without the assistance of an economist who understood the real world. This person took the form of Ric Simes, an old friend and colleague from the days when we both worked as advisers to then Prime Minister Paul Keating. Ric developed all the administrative and modelling issues for Chapter 10, and without his acute understanding of financial institutions and government policy this chapter would not exist, or would exist only poorly.

Meanwhile, at the University of Melbourne, Joshua Gans and Stephen King were developing creatively their own application of the principles of income contingent loans, as a housing credit line for low-income earners. This is now Chapter 11. What stunned me when I first read a version of their paper was how clearly they understood the essential benefits of income contingent financial instruments, benefits in concept that took me a long time to appreciate. I have always envied those to whom economic theory apparently comes so easily.

Through the years a very large number of people helped me with this work. In the beginning Pam Lyndon and Chris Ronalds understood the benefits of income contingency well before HECS was born, and influenced importantly its direction. On the Wran Committee, Meredith Edwards' role turned out to be critical and, as well, I had many fruitful discussions on income contingency with members of the Committee's secretariat, Chris Robinson and Peter Reeves (now deceased) in particular. John Dawkins showed what a consummate politician he was by getting HECS through the Australian Labor Party and into legislation. Alan Mawer and David Phillips were also very important to these processes.

Through the 1990s I met and kept in contact with other supporters of income contingent loans, the most important of these being Nick Barr from the London School of Economics. With his friend Iain Crawford, Nick had been developing an income contingent student loan agenda for the UK from 1988, which was finally introduced in 2006. He taught, and still teaches, me a huge amount.

After about 1995 I began working on higher education financing reforms for the World Bank and other international aid agencies in different developing countries, including Papua New Guinea, Malaysia, Ethiopia, Rwanda, Nepal, Colombia, Mexico, China and Thailand. In all cases I was welcomed warmly and treated wonderfully and I wish to thank the officials and academics of all these countries for their support. In this context I acknowledge in particular the help and friendship of Bill Fraser, Jamil Salmi, Nicholas Bennett and Medhi Krongkaew. With respect to the introduction of ICLs in developing countries I owe a huge vote of thanks to Jane Nicholls, a friend and adviser.

The policy ideas behind the many applications of ICLs go back a time, but it was not really until about 2001 that I started to work on the book as a whole. Throughout these last five years several friends and colleagues provided very significant input and support. As my Head of Program at the ANU, Bob Gregory encouraged the process substantially, and sometimes even left me with the distinct feeling that he thought it might just be done one day.

On the friendship side, there have been many supporters. Very importantly Chris Ronalds essentially locked me in a room at her Bawley Point house on the New South Wales south coast in January 2005, and wouldn't let me out until I had done the required eight hours per day of writing and

suffering, for over a week. I know that the book would not be finished without her gentle and encouraging fascism. As well, Mary Ann O'Loughlin never missed an opportunity to inquire, increasingly more sceptically, about the status of the unfinished manuscript, and I knew that I couldn't face her for much longer without it being done.

I am grateful to the Academy of Social Sciences of Australia for convening a symposium on income contingent loans in November 2004. The symposium brought together an important collage of different social scientists – from anthropology, criminology, economics and political science – in a highly unusual consensus defined by the view that income contingent loans have broad policy potential.

For many other different contributions I thank Lindsay Cane, Alan Chapman, Deborah Cobb-Clark, Clive Hamilton, Meredith Edwards, Pru Goward, Stephanie Hancock, Eric Hanushek, Bruce Johnstone, Mark Latham, Pam Lyndon, Miguel Palacios, Chris Ryan, Tony Salvage and Julie Whitehead. None of them, or anyone else, is accountable for the contents of this book. It is my responsibility alone.

I thank James Chapman and Jack Lyndon, my sons, for companionship and for showing me what really matters.

Bruce Chapman
May 2006

Abbreviations

| | |
|-------|---|
| ADB | Asian Development Bank |
| BNI | Bank Negara Indonesia |
| CSS | child support scheme |
| GT | graduate tax |
| HCC | human capital contract |
| HEAC | Higher Education Administration Charge |
| HECS | Higher Education Contribution Scheme |
| HILDA | Household, Income and Labour Dynamics of Australia survey |
| ICL | income contingent loan |
| LRAP | loan repayment assistance programmes |
| NSFAS | National Student Financial Aid Scheme |
| PELS | postgraduate education loans scheme |
| SES | socio-economic status |
| TICAL | Thailand's Income Contingent and Allowance Loan Scheme |

Introduction

A major role recognised for government¹ involves the minimisation, management and distribution of risks. There have been several recent notable applications of this basic principle, including Barr (2001), Moss (2002) and Shiller (2003). This book takes up the theme through a detailed analysis of a particularly interesting government risk minimising instrument, income contingent loans.

‘Government as Risk Manager’ is the topic of *When All Else Fails*, by David Moss. Through analysis of US government legislative reforms over the last 200 years, Moss promotes an understanding of the risk management role of the public sector, which can take many diverse forms. For example, including laws associated with limited liability, the application of speed limits for automobiles, national health insurance, occupational health and safety legislation, disaster relief and social security.

Barr considers the potential role of government in the context of insurance failure, which is conventionally seen in the economics literature to be a consequence of asymmetric information.² In the absence of markets not providing accessible and affordable insurance he argues that the government has a unique role to play as a ‘piggy bank’, an efficient institution to manage and decrease the costs to citizens of the unavoidable uncertainties associated with human events. Shiller also analyses the distinctive potential of the public sector to diminish risks in a range of diverse activities, such as foreign aid.

All these contributions examine the special issue of the financing of activities and the capacity of governments to address the associated uncertainties. Barr stresses that in this context that there are two essential benefits of government intervention that will not be forthcoming from the private market: insurance and consumption smoothing. All three authors highlight the possibility of the use of so-called ‘income contingent loans’ (ICLs) as a prospective risk instrument for the public sector. ICLs are the topic of all that now follows.

An ICL takes the form of an individual or business being provided with finance – which could come from either the private or public sectors – for agreed activities. The financial resources are treated as a distinctive kind

2 *Introduction*

of loan, an income contingent loan, in which repayment streams depend only on the future prosperity of the assisted agents. A critical point is that those assisted who experience adverse economic circumstances have no repayment obligations during that period, which means that the collection of the debt is based on capacity to pay. It is this feature of ICLs that delivers the benefits to borrowers of both default insurance and consumption smoothing.

What now follows in this Introduction examines briefly the conceptual basis of ICLs, to help position the later discussion of disparate applications of these forms of policy in a broader analytic framework. The major point is that, in general, ICLs can be thought of as a public sector financial instrument designed to address aspects of so-called 'market failure'. Some of the shortcomings of the operation of the private sector with respect to risk might result in an absence of private sector institutions developing in response to social and/or economic need (such as concerning the commercial provision of loans for human capital investments), and in this case public sector intervention has the capacity to fill a significant void.

In other cases there might well be evolved market responses to particular private sector needs, but these might be handled more equitably or in administratively more efficient ways through the use of an ICL mechanism. In many possible applications the issue of equity looms large, since some current government schemes are arguably regressive (for example, taxpayer grants to farmers for drought relief). For each possible application it is important to be precise about the nature of a market failure, and/or the alleged advantages of an ICL compared to current or alternative approaches, in order that the nature of the problem and its potential solution are easy to understand.

One of the important motivations for ICLs organised through the public sector is that such interventions, compared to commercial bank loans, have the capacity to significantly reduce risks for borrowers in ways that might be both equitable and beneficial to society generally. In some cases these arrangements mean that finance can be made available for projects that would otherwise not occur because of a lack of access to a bank loan. As implied above, there are other reasons for such interventions, such as to reduce public sector outlays and to make fairer government intervention by reducing the extent of taxpayer subsidies.

In the book it is continually explained and emphasised that an ICL minimises borrowing difficulties by agents because the repayment obligations are sensitive to the capacity to pay. The major theme is that the provision of loans with such a feature has the two fundamental benefits of protecting borrowers from both default and repayment hardship.

Perhaps the best-known ICL is the Higher Education Contribution Scheme, instituted in Australia in 1989. For the first time with respect to a national intervention, a government imposed a charge on university students to be paid in the future through the tax system, but when and only if

their personal incomes exceeded a certain level (and beyond that as a proportion of income). Forms of this type of approach to higher education financing have since been adopted in New Zealand (1991), South Africa (1994) and Chile (1996), and a complicated variant of the scheme was introduced in the US in 1994. ICL policies for higher education are to be implemented at the end of 2006 in the UK and Thailand.

Since in practical policy terms ICLs began with reforms to higher education financing, Part I of the book is concerned with the conceptual basis, history and policy experience in this area. Part II significantly broadens the discussion through consideration of a number of ICL policy applications in a range of disparate areas, including drought relief, the collection of fines associated with criminal activity, social community investment projects and ICLs for housing credits for low-income earners. Part III examines the similarities and dissimilarities of these suggested ICL reforms and canvasses briefly several other possible areas of policy that might be improved through reforms of this type.

Notes

1 See David Moss (2002).

2 For seminal work in the area, see Arrow (1963).

Part I

Income contingent loans for higher education

1 Summary of Part I

Part I examines the basis for, and experience with, income contingent loans (ICLs) for the financing of higher education, recognising that over the last 15 years or so there has been a quiet revolution in approaches internationally to this issue. The most important change has occurred in those countries in which higher education systems had previously been funded almost entirely through taxpayer transfers, that is, without contributions from the direct beneficiaries, graduates. It is now the case that many countries, for the first time for many years, have introduced, or are about to introduce, tuition charges. Examples include New Zealand, Australia and the United Kingdom.

A second and perhaps more significant change concerns the approach adopted with respect to how tuition is to be paid. Specifically, charging reforms in several countries have involved the use of ICLs. The policy allows charges to be paid by graduates conditional on their capacity to pay, and is a profoundly different approach from the traditional fee arrangement involving government guaranteed bank loans.

Chapter 2 considers in detail the conceptual bases important to an understanding of these charging reforms, and begins with an examination of the economic case for student contributions to the costs of higher education. It is argued that students should pay some proportion of the costs, and in essence this case rests importantly on issues of equity and the distributional consequences of alternative financing approaches. It is suggested that there are compelling arguments for taxpayer subsidies, but it is recognised that there is no consensus as to how high these should be.

In this part of the book it is also explained that, left to itself, the higher education system will not be able to deliver either fair or efficient outcomes. Higher education is a market characterised by significant uncertainties for students, and high risks for prospective lenders. For good reasons banks will not be interested in providing loans to help disadvantaged students to cover tuition and with respect to income support needs. Government intervention is therefore necessary.

Chapter 3 examines the costs and benefits of the two major

options available to government to solve the so-called capital market failure noted above. The first is the provision of bank loans with a government guarantee, usually to a subset of students, the approach adopted in the US and Canada, as well as other countries. The second policy approach is ICLs.

Government guaranteed bank loans have the significant benefit of removing the risks to the lender of default. They also allow private sector financing of important aspects of the higher education system.

However, it is argued in this chapter that a government guarantee for bank loans does not address other important aspects of the higher education financing process. They are:

- i While the lender is protected from the costs of default by the government guarantee, the borrowers – the students – are not. This means that students taking out bank loans might not be able to meet their repayment obligations and, in an extreme situation, could be declared bankrupt. Such an outcome has a very serious consequence: it necessarily adversely affects the credit reputation of defaulting students, and thus their access to, or the cost of, other loans, such as to finance the purchase of a house.
- ii The availability of bank loan assistance is restricted by governments to a subset of prospective students, with the qualification and/or the level of support typically defined by means testing on the basis of family income.¹ A problem with this restriction is that some parents or partners with apparently high incomes might not be prepared to help a prospective student pay tuition or offer income support. In these circumstances the means-testing rule implies that some prospective students face up-front charges and income support problems.
- iii Bank loans are characterised by repayments of set amounts over a given time period. This means that a borrower's ability to meet the repayment obligation in periods of future economic difficulty is not taken into account, and they could experience economic hardships in order to meet these commitments.

This chapter examines in detail the costs and benefits of government guaranteed bank loans compared to ICLs. The defining characteristic of the latter approach is that repayments are required when and only if a student's future income reaches a given level. That is, if the borrower's circumstances turn out to be adverse in a particular period, no loan payments are required.

A critical theme of this book explored in Chapter 3 is that ICLs have two important benefits compared to government guaranteed bank loans, and they are both related to the risk reduction for borrowers inherent in having debt obligations being met on the basis of capacity to pay. This results in insurance, providing both default protection and consumption smoothing.

Chapter 3 also points out that there are several different forms of ICL, and the conceptual bases and implications of these are examined. It is argued that an ICL in which risks are shared with taxpayers, the so-called 'risk-sharing ICL', has the highest potential to deliver social and economic benefits.

Chapter 4 considers in detail the 1989 to 2004 experience associated with the most researched risk-sharing ICL for higher education, Australia's Higher Education Contribution Scheme (HECS). HECS was introduced as a different way of collecting tuition, to substitute for in part the total taxpayer-financed system. At the time of its introduction it was highly controversial, considered by some to be unworkable, and by others to have a strong potential to harm the access of the relatively disadvantaged to the system. The evidence summarised in Chapter 4 suggests that the arrangement has worked as hoped.

Chapter 4 explains that HECS, or perhaps more generally the introduction of tuition charges, delivered considerable revenue to the Australian government, and this facilitated a considerable expansion in the number of public sector university places. The nature of, and changes to, HECS parameters are described and considerable effort is given to a review of its effects, particularly with respect to the potential for consumption smoothing and concerning both equity and access.

As well, from a range of different surveys and statistical tests, it is reported that HECS has had no adverse consequences for either equity or the access of the disadvantaged. This might be because international enrolment patterns in higher education are generally insensitive to the design of tuition charge and loan characteristics. There is some evidence, however, that in the period when the first income threshold of repayment was very low, 1997–2004, HECS might have had a adverse effect on tax compliance, but the extent of this problem in empirical terms is small. The chapter reports that HECS seems to be inexpensive to administer.

Chapter 5 explores in less detail the international debate and experience in a range of other risk-sharing ICL applications, or suggested policies, for higher education financing. It is apparent from this discussion that there is a very critical public policy issue related to the successful adoption of ICLs for higher education, which is that a particular set of institutional requirements is essential for their efficient implementation. While several administrative conditions are required for the collection of any type of loan for tuition or student income support, ICL schemes have an additional criterion: it is necessary to know, efficiently and with accuracy, the future incomes of former students. It is suggested that countries without administrative structures that cannot provide this are unlikely to be well suited to the adoption of ICLs.

Note

- 1 In the US, for example, the household income of young people defines the borrowing amounts available. In the Student Loan programme in Canada, students from relatively high income household backgrounds are ineligible for any assistance.

2 Paying for higher education

2.1 Introduction

This chapter examines the essential issues surrounding the responsibility and incidence of the financing of public sector higher education. The questions addressed are:

- i Is there a case for taxpayers to subsidise tuition?
- ii What contribution to costs should be borne by taxpayers?
- iii What is the case for a student charge?
- iv Should student charges differ between courses?
- v Is there a case for government to subsidise student income support?
- vi Should government intervene in the process?

Mainstream economic theory provides a framework that suggests that governments should contribute a proportion of the direct costs of higher education, but it remains clear that the precise level of the subsidy cannot be determined on the basis of existing empirical evidence. There is a case for students to be charged tuition (to reflect course costs), and this is both supported empirically and reinforced from an equity perspective. Further, given the nature of student higher education investment costs, it seems apparent that governments should subsidise, or at least be involved in the provision of, income support as well as tuition. Critically, it is argued in what follows that there is a strong case for government intervention in the higher education financing process, beyond the role of subsidies. This important point sets the scene for Chapter 3 which provides an analysis of the relative merits of an income contingent loan approach to higher education financing.

2.2 Economic issues related to taxpayer subsidies

Background

The conventional way of analysing efficiency issues with respect to public expenditure uses a proposition, well known in welfare economics, known

as ‘allocative efficiency’, and what now follows is an informal description of this approach. A more formal exposition is provided in the Appendix at the end of this chapter.

The mainstream economics framework starts with the presumption that resources are in limited supply, and that the major conceptual issues are concerned with allocating these scarce resources in a way that maximises their production potential. This perspective focuses on the extent to which governments should subsidise activities in order to influence resource allocations, and is informed by notions of both private and societal costs and benefits. The private costs and benefits are considered in Section 2.3, and what now follows examines the decision-making issues from the perspective of government.

Economic theory suggests that government subsidies should reflect the value to the society of an activity, above and beyond the advantages for the individual of that activity. These additional social benefits are known as ‘externalities’ or spillovers. In understanding the externalities from higher education it is useful to distinguish the various components of expenditure into research, community benefits and teaching. Given our focus on tuition charges, what follows considers the last of these.

The nature of higher education externalities

Critical issues for policy concern the nature of social benefits and their likely size, given that economic theory suggests that the latter should determine level of government subsidy. With respect to government subsidies the significant issues are what, and how valuable, are higher education externalities?

The externalities from higher education have been argued traditionally to include, among other things: reduced criminal activity, more informed public debate, better informed judgements with respect to health and more sophisticated voting behaviour. However, the value of these particular externalities is likely to be small and debatable relative to the externality effect of higher education on economic growth. Since the early 1960s it has been argued that in a world of rapidly changing information more highly educated workers have an advantage in adapting to different environments, in ‘dealing with disequilibria’ – the capacity to adjust to unanticipated shocks (Schultz 1975; Huffman 1974; Fane 1975; Wozniak 1987).¹

Related issues have emerged in so-called new growth theory, which stresses the role of endogenous technical change, and the interdependencies between knowledge, innovation and human capital investments. However, the role of higher education with respect to productivity growth is highly complex, with educational improvements seen to facilitate technological progress, which is the engine of growth.

There are several (highly related) ways education is seen to impact on technological change:

- high levels of formal education are necessary for the successful introduction of capital equipment (Bartel and Lichtenberg 1987),
- the above connection encourages physical capital investments (McMahon 1999),
- during periods in which a population is undergoing increases in education there will be an effective increase in the size of the labour force, so long as education raises productivity (Barro 1991) and
- education disseminates information and through this adds to growth because death does not result in knowledge loss (Lucas 1988).

These notions have received wide acceptance in the economics research community. However, the consensus with respect to the conceptual importance of these factors, and the likely role of higher education for them, has not been matched with agreement concerning their empirical significance.

The value of high education externalities

Measuring the impact of higher education on economic growth is not straightforward. An important reason is that the impact of education on the skills of the labour force will be determined by both its quantity (that is, higher graduation rates) and its quality (that is, the amount of knowledge imparted at any given schooling level). Given data availability most analyses focus on the former.

The role in economic growth of both the quality and quantity of education internationally are compared in Hanushek and Kimko (2000). They test the extent to which educational quality as measured by standardised scores for mathematical and scientific literacy has contributed to economic growth differences averaged over 30 years across 139 countries. The test results are compared with the effect of changes in schooling quantities (as measured by the number of years of schooling).

They found that increases in workforce quality have a profound influence on economic growth. For example, on average a one standard deviation increase in test scores adds about 1 per cent to a country's GDP per capita annual growth rate, which is arguably a very high impact. By contrast, increases in the quantity of schooling required to match this growth rate change seem to be very much higher: to achieve a 1 per cent increase in the annual growth rate of a country's GDP per capita requires, on average, that workers had nine additional years of education.

The Hanushek and Kimko analysis does not address the sources of labour force quality, that is, in their context, the determinants of test scores. It is very possible that these have been correlated over time with rising school participation rates. As well, there is little direct role played here with respect to higher education. To argue that the Hanushek and Kimko result supports the role of higher education as a direct growth

determinant requires a link between higher education and labour quality, an issue that was not tested.

Barro and Sala-I-Martin (1995), Gemmel (1996) and McMahon (1999) attempt to measure the direct role of education on economic growth. The former finds that a one standard deviation increase in the ratio of public education outlays to GDP of the order of 0.3 percentage points, with relatively high effects from the tertiary education sector. For the UK, Gemmel finds that a 15 percentage point increase in educational enrolments leads to just over half a percentage point higher rate of productivity growth. These broad results are supported in Englebrecht (2003), which emphasises in particular the positive role of human capital as a catalyst to technological diffusion.

A different way to think about this issue is presented in Chapman and Chia (1989). Their exercise suggests that under certain (and limiting) assumptions, it is possible to estimate what implicit value is given to the spillovers from higher education from particular levels of government subsidy. Assuming that a government provides marginal subsidies to higher education in such a way as to maximise the net social benefits of the activity, breaking down the costs and benefits of the process reveals this implicit valuation. With this approach they found that for the Australian system in 1988, the government expected an average graduate to deliver around \$A3,000–4,000 (in 2005 dollars) per year in spillovers. This seems to be a plausible figure, but such an assessment is necessarily subjective.

While it seems incontestable that there are spillovers associated with the provision of higher education, the literature offers little guidance as to their magnitude and it seems unlikely in the near future that the economics profession will provide a convincing consensus. This means that the evidence and exercises reported above do not provide an accurate guide for determining the precise level of government subsidy for higher education.

An essential problem with these types of studies is capturing the obvious complexities in the relationships between human capital investments, innovation, knowledge and technical change. Issues of measurement and of timing loom large, with most empirical exercises being constrained to use annual data. However, there are no statistical guides as to the length and nature of these dynamic processes.

Even so, there is a strong case that a subsidy should exist, which means that student charges for higher education should be less than the cost of the provision of the service, perhaps significantly so. Currently, in international terms, public sector subsidies are of the order of 60 per cent, with tuition charges being generally about 40 per cent of average costs.

Externalities and the structure of charges

The structure of charges will be determined in part by subsidies and in part by course costs, with the latter differing markedly. For example, disciplines such as medicine, veterinary science and dentistry are upwards of five times more expensive than low-cost courses such as law, arts and commerce. This suggests that with the presumption of equal subsidies across courses, there should be significantly different charges.

This implies that higher education systems with identical charges by discipline (including those with no charges at all) are characterised by large cross-subsidies. Relative to a charging regime more consistent with economic theory, approaches such as these are normally seen to distort student demand towards high cost courses. This is unlikely to be socially optimal except in a situation where course costs reflect exactly the marginal value of the externalities. There is no reason why this should be the case.

In a world in which a graduate's career path could be fully anticipated, and where the ensuing spillovers and their timing were known with certainty, higher education subsidies could be calculated for, and targeted on, each student. This is, of course, impossible, so a simpler approach might entail differential subsidies by course.

One way for a government to approach this would be to provide subsidies at, say, three different levels reflecting broadly course costs. This is the policy currently used in Australia, for example, the system considered in detail in Chapter 4.

Summary of the case for a taxpayer subsidy

Economic theory suggests that if there are benefits to society from higher education, in excess of the possible benefits for graduates, there is a case for taxpayer subsidies to the process. It is likely that the major externalities are related to the contribution to economic growth from having highly educated workers engaged in processes in which their skills lead to efficacious adoption and adaptation of technological change and thus economy-wide productivity increases. While these connections and causal relations seem to be clear, there is no consensus with respect to the empirical magnitudes involved.

Until the data and the empirical methods used in their analysis improve we are left with just a broad bottom line. There is a compelling argument for governments to continue to subsidise higher education; the extent of this contribution cannot be determined with confidence on the basis of available evidence.

2.3 Economic issues related to student contributions

The human capital framework for student higher education investments

Mainstream economic theory treats the higher education financing decision as a process in which prospective students are assumed to weigh the costs and the benefits, and to then make education decisions on this basis. This approach suggests that a method of measuring the private benefits of higher education is to treat the process as an investment and calculate the returns, a technique applied in a plethora of international studies over a long period of time.

In this context the major cost of full-time study is the income foregone by students, assuming that in the absence of study they would be working in the paid labour force. The benefit is seen to come later and takes the form of the receipt of relatively high lifetime incomes.

This can be illustrated through setting up two hypothetical choices for an 18-year-old high school student. The student is assumed to face the following alternatives: to leave education as a high school graduate and take a full-time job which pays average earnings by age for high school graduates; or the student could enter university, undertake a four year degree graduating at age 22, commencing a full-time job which pays average earnings by age for a university graduate. These hypothetical choices are illustrated in Figure 2.1, with annual dollar salaries approximately those applying to US high school and college graduates in the early 2000s.²

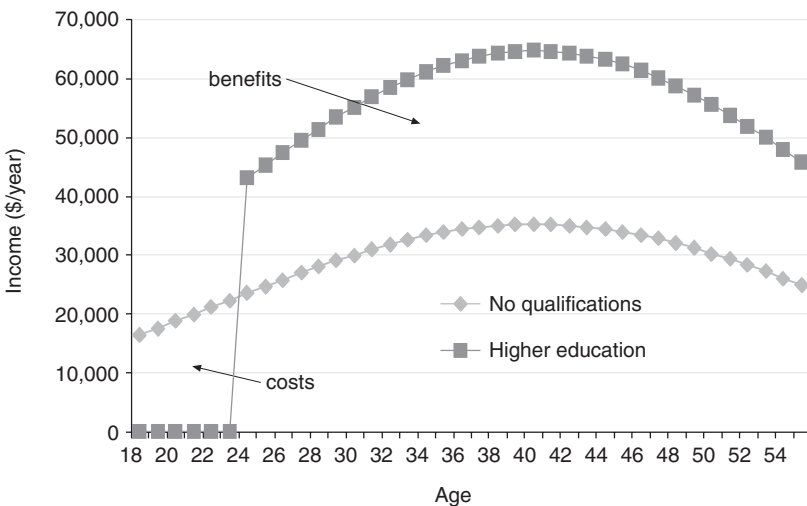


Figure 2.1 Costs and benefits of higher education.

Figure 2.1 illustrates that there are costs and benefits associated with each education/work decision path. Specifically, those choosing higher education incur foregone earnings from age 18 to age 22, since instead of enrolling in higher education they could have been earning the salary of a full-time worker who has no post-secondary qualifications. The economic benefit from higher education comes in the form of the higher salaries received after graduation.

The data from Figure 2.1 can be used to calculate what are known as ‘private internal rates of return’ to higher education. This is the annual additional income associated with investment in higher education, taking into account the value of the foregone earnings while studying, plus tuition costs, and the time stream of additional income as a result of the receipt of a university degree.

Internal rates of return calculations are estimated at the time the higher education decision is made, in the above case at age 18 for our hypothetical students, and for the data shown in Figure 2.1 the return is about 12 per cent a year. This suggests that investing in higher education is associated with high returns compared to other investments, such as in government bonds or in the stock market. As noted below, however, there are important caveats to such a conclusion.

It is important to note from the above that the most significant part of the investment costs for students takes the form of foregone earnings in the period of study. This suggests that the analysis of possible forms of government support and intervention, explored in detail below, should recognise that tuition is one aspect only of processes related to higher education access. The example is illustrative and it is instructive to now consider the overall evidence.

What is the private return to higher education investments?

Possibly one of the most studied empirical phenomena in economics over the last 40 years or so concerns private investment returns to education. These are traditionally estimated with earnings functions using cross-sectional surveys of individuals. The approach delivers computations of the effect of education and labour market experience with respect to earnings, usually differentiated by sex.

There are some important limitations of studies of this kind, but it is useful to report that there is an impressive consistency in the findings. In practically all analyses, across time and for a very large number of countries, it is apparently true that higher education is associated with significant private economic returns. To give some empirical perspective on average returns, the general results are of the order of 6–14 per cent per year. This figure is in excess of measured net benefits from a host of other financial outlays, such as in stock or bond markets.

Psacharopolous and Patrinos (2004) provides the most recent cross-country results. Their evidence supports many previous studies: investment returns for individuals undertaking higher education remain large, although it is apparent that differences between countries are also high.

This area of research is not uncontroversial. One reason is that those undertaking higher education might be relatively more able or motivated than others. In an attempt to allow for this possibility there is now a significant body of research comparing the returns to education between identical twins (Ashenfelter and Krueger 1994; Mulvey *et al.* 1995). The story from this research is still about the same – on average, higher education seems clearly to result in important individual economic benefits. What these results imply for student charges is considered further below.

2.4 Beyond economic efficiency: the case for a tuition charge

Tax equity and lifetime income distribution

Related to the question of private benefits from higher education are arguments for a student contribution that might loosely be referred to as ‘tax equity’, which are as follows. If the government does not charge for higher education, the minority who receive it are being subsidised considerably by the majority who do not attend. The argument is, that since all taxpayers have paid for the provision of higher education it is equitable that those so advantaged repay an additional amount for the individual benefits they receive.

This equity point is related to the fact that the measured after-tax rates of return to higher education investments are on average high, as noted above. Given this, the distributional justice case for a charge can be expressed simply, and is as follows.

Imagine two people on identical high incomes, with one being talented at sport (or good at business) and the other being a higher education graduate. If there is no charge for those receiving higher education qualification, and both people pay the same tax, it follows that the graduate contributes nothing additional to the cost of their higher education. This is clearly inequitable because the former has subsidised the education of the latter, which has in turn increased her/his income.

Some opponents of graduates contributing to part of the cost of their education argue that this is unreasonable because the extra lifetime tax that graduates pay more than covers the public subsidy involved. This position is incorrect, but worthy of examination because it is often expressed in public debate. The essential point is that in a world of no student contributions, higher education participants have received a taxpayer benefit and from large numbers of citizens much less advantaged than graduates.

As well, it should be noted that there is considerable evidence from many countries (Johnstone *et al.* forthcoming 2006) that those who gain access to higher education generally come from advantaged socio-economic backgrounds. Juxtaposed with the high rates of return to higher education investments, this suggests that, on average, government subsidies to higher education redistribute resources to individuals who as children are on average more likely to be from privileged backgrounds and who as adults receive high individual economic returns from the higher education investment process. Barr (2001), Chapman (1997a), Belfield and Levin (2003) and many others, argue this proposition generally. That is, a social implication of a large public sector financial support of the beneficiaries of higher education is that such approaches are regressive, delivering public sector advantages to the relatively privileged.

It should be clear that some part of the argument for a higher education charge based on the distribution of lifetime income reflects a value judgement about what constitutes a good society. This judgement implies that a role for government is to redistribute resources towards – and not away from – the lifetime poor. Large subsidies to higher education achieve the opposite.

Efficiency and equity: is this a false distinction?

The conclusions of Sections 2.3 and 2.4 are similar – that both students and taxpayers should contribute to the costs of higher education – but the analysis offered differs. In the first case issues of economic efficiency were considered, while the second focused on matters of equity and lifetime income distribution. It is worthwhile to ask if this distinction is important.

In general, analyses of public sector involvement in particular areas of economic activity treat efficiency (usually interpreted to mean the optimal use of scarce resources) and equity (which concerns fairness and income distribution) as if they are conceptually distinct. Further, it is commonplace in economic discourse to suggest that efficiency and equity are trade-offs, with a role for government being to find an acceptable position between these competing goals.

However, with respect to higher education funding the distinction between efficiency and equity is not clear-cut. This point is clarified through consideration of the notion of equality of opportunity, which is usually seen to be a major goal for higher education policy. What the expression means is not always clear, but in this context it can be interpreted to reflect the value of ensuring that there is an absence of barriers to the participation of disadvantaged prospective students in higher education. For economic policy, the notion of equality of opportunity underscores that the distinction between efficiency and equity is in many ways artificial, an issue now addressed.

There are both economic and social reasons for governments to act in ways that ensure that the higher education system does not exclude talented but poor students. The reasons are as follows.

First, poor prospective students can deliver important social benefits given access to higher education. A point is that if able and motivated people cannot participate in higher education for financial reasons the whole economy is worse off, because talent is being wasted; there will be a less than optimal delivery of spillovers, as well as foregone private opportunities for the excluded poor. Both Barr (2001) and Palacios (2004) explain and emphasise these issues.

Second, in terms of equity and distributive justice, it needs to be recognised that there is a strong nexus between the family circumstances of children and their lifetime income prospects. Thus if a society values equality of opportunity it should ensure that the strength of this nexus is not reinforced by education policy.

It follows that if governments are interested in the pursuit of equality of educational opportunity it is important to be clear about what the role of the public sector should be. This is particularly appropriate if there is a case, as has been argued above, for students to pay for some part of the direct costs of higher education participation. With this as background it is now useful to explore the characteristics of market economies that help define the importance and role of the public sector in the delivery of both efficient and equitable higher education financing processes.

2.5 The need for government intervention

Capital market failure

A significant financing issue for higher education explained above is that there is a case for both a charge 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.³ 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 (Barr 2001; 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 that 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.
- 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 refinance 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 almost exclusively 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.

An assumption implicit in the above discussion is that the capital market failure issue is important enough to mean that, in the absence of government intervention, there would be a significant number of prospective students who would be denied access to higher education because of so-called credit constraints, the inability to borrow commercially to finance the investment process. The evidence is now explored.

Are credit constraints really a problem?

The borrowing problem described above takes on a serious form only if 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 is 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. However, this turns out to be a difficult research assignment because of the complicated relationships between family income and its likely association with young people's educational choice. Among these are 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 particular issue (for example, Cameron and Heckman 2001). It suggests that while family factors are critical to higher education enrolment decisions, 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.

Similarly, Coelli (2004a) examined the effects of changes in tuition with respect to the attendance of Canadian students from different parts of the socio-economic distribution. He used panel information on youth from the Canadian Survey of Labour and Income Dynamics to test specifically the consequences of the marked increases in tuition in the second half of the 1990s. He found that tuition charge increases in different Canadian provinces had 'large negative effects on the university attendance of youth least able to pay – those from low income families'. A second study by Coelli (2004b) also found evidence for credit constraints by exploring with the same data the effect on university attendance for children whose parents experience negative income shocks.

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 seem to have acted to restrict higher education enrolments for a significant minority of prospective students.

Perhaps the most experienced international researcher on higher education student loans, Bruce Johnstone, argues that the existence of credit constraints in reality is fairly obvious. From private correspondence he states (emphasis in original):

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.*

2.6 Conclusion

There are compelling arguments for the proposition that society benefits from higher education to an extent which exceeds the private benefits of graduates and their employers. That is, there are spillovers from the process, and their existence justifies government subsidies to ensure that the right level of higher education is provided, from a societal perspective.

There is empirical confirmation of the existence of spillovers, particularly with respect to the link between formal education and economic growth. Even so, the precise magnitudes of the value of spillovers are unclear, and there is no consensus as to what the right subsidy level is, only that it should exist.

On the other hand, even taking into account foregone earnings, there is strong evidence that graduates receive a high return, on average, for educational investments. This is most obviously the case with respect to life-time incomes, and justifies students being charged, on tax equity and distributional grounds.

With respect to who should pay, it is clear that on the basis of both resource allocation and equity that there should be both a subsidy and a student charge for higher education. However, a precise judgement concerning the proportions to be contributed by the parties is not yet justified.

Given that some prospective students will require access to finance for both the payment of tuition and income support, access to loans from the market would be a necessary condition for a higher education system to operate effectively. However, it has been argued that the higher education financing market, left alone, will not deliver propitious outcomes. There are two related problems for commercial lenders: future income uncertainties on the part of the borrower, and the lack of collateral in the event of student defaults. Government intervention of some form is thus required.

The next chapter considers the costs and benefits of different types of public sector loan interventions designed to address this critical problem.

Appendix

An economic framework for analysing higher education financing

The following discussion provides an economic framework concerning the issue of economic efficiency in the allocation of higher education resources. A model is presented that clarifies formally the relationships between private and social returns to higher education in order to determine a pricing rule for tuition. The analysis is of use to economics students and is not necessarily easily accessible to individuals with no background in economic theory.

To clarify a pricing rule we begin by assuming that there are no market distortions. Basic theory then suggests that goods and service should be priced at:

$$P_x = M_x - E_x$$

where P_x is the price of good or service X , M_x is the marginal cost of producing x , and E_x is the marginal value of the externalities associated with the production of the consumption of x . In Figure 2.a.1, q^i is the level of enrolments when there is no tuition, q^i is the level of enrolments when there are no externalities and q^* is the optional level of enrolments when there are both private benefits and externalities.

This appendix helps explain the basis of this pricing rule for higher education (from Chia 1990).

The curves in Figure 2.a.1 are all given in present value terms, and an understanding of their bases is as follows. The marginal benefit curves slope downwards since the higher the number of tertiary students the greater will be the supply of graduates and thus the lower are graduate

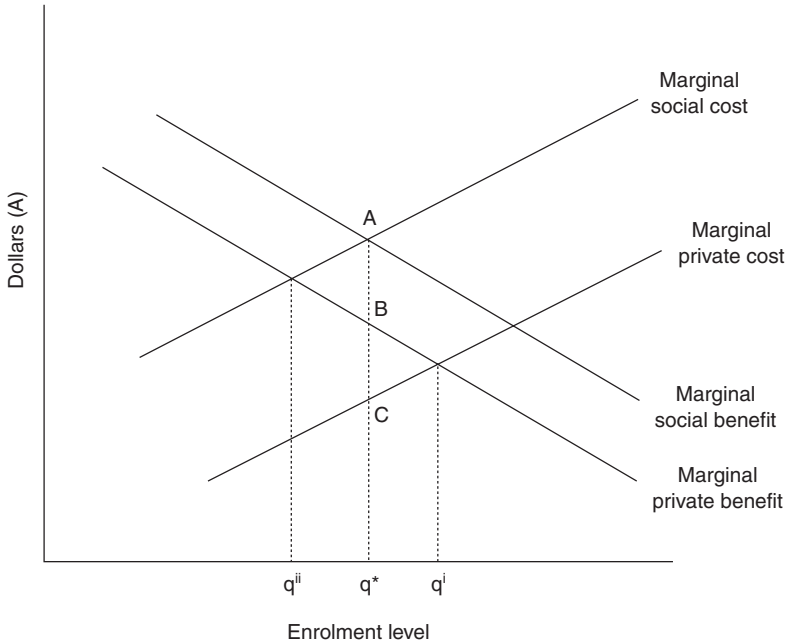


Figure 2.a.1 Private and social costs and benefits of higher education.

wages. The distance between the social and private benefit curves reflects the value of the externalities, a topic considered below. It is assumed in the diagram that the marginal value of the externalities is invariant to the number of students, meaning that the social benefit curve is drawn parallel to the marginal private benefit curve. However, it is arguable that as the number of graduates increases, so too will the value of the externalities fall, a point used in Barr and Crawford (1998) to justify fee increases as enrolments increase.

In the figure the marginal private cost curve is shown for a zero-fee regime, and slopes upwards since there will be increasing opportunity costs to enrolling the more enrolments there are, given that additional enrolments decrease the supply and thus the wages of non-graduates. The difference between the marginal private and marginal social curves reflects the extent of the subsidy implicit in a no-fee regime.

As drawn, Figure 2.a.1 shows a situation characterised by over-investment in higher education, ($q^i > q^*$), since it is assumed that there is no tuition fee. However, if all the direct costs are paid for by students (a full-fee regime), then at equilibrium the marginal social costs and marginal private benefits would be equal, but this then leads to an under-investment of higher education ($q^{ii} < q^*$). Thus the optimal fee is given by

the distance BC which is derived from AB, the value accorded the marginal value of the externalities and thus the level of government subsidy.

Of some interest for policy issues considered in detail in other chapters, the marginal cost pricing rule explained here suggests that financing arrangements that do not reflect the interaction of marginal benefits and marginal course costs will not deliver allocative efficiency. It is explained in following chapters that several variants of student charging are of this genre.

Notes

- 1 For education to result in social as well as private gains the rents from the process are not captured completely by the educated individuals or the firms employing them. However, this will be the case if technological change flows easily from one workplace to the next (Romer 1994).
- 2 The shapes and relative sizes of the relationships of Figure 2.1 are very familiar to all students of labour economics and are continually duplicated in cross-country studies. Later chapters of the book illustrate the point with respect to Australian and other data.
- 3 This critical point was first raised by Friedman (1955).

3 The case for income contingent loans for higher education financing*

3.1 Introduction

This chapter examines the case for income contingent loans for higher education charges and student income support. It begins with an analysis of more traditional approaches to the credit market failure explained above, such as scholarships and concessions, and government guaranteed bank loans. Notwithstanding the fact that these policies are commonplace internationally, the discussion makes it clear that they have important limitations.

An income contingent loan (ICL) entails the provision of finance or, more generally, economic assistance, that is required to be repaid when and only if borrowers experience propitious future circumstances. Thus, unlike normal bank loans, the instrument gives significant weight to borrowers' capacity to pay, and its major advantages can be traced to this feature. Capacity to pay as the main characteristic of an ICL gives rise to two critical advantages: protection against default and consumption smoothing. For government policy, trade-offs will be involved in the setting of the repayment terms.

Income contingent financing instruments take many different forms, and can, for example, lead to quite different behaviour on the part of borrowers, with implications for the potential of an ICL to achieve equitable and efficient outcomes. These differences are described below, with an important part of the analysis considering the relative costs and benefits of different ICL approaches. It is apparently the case that a particular form of an income contingent loan – the so-called 'risk-sharing' variety – has the highest potential to deliver equitable and efficient financing arrangements, so long as they can be administered effectively.

3.2 Are ICL necessary? The problems of up-front fees with means-tested scholarships/concessions

A government could react to the capital market problem described in Chapter 2 by allowing universities to charge up-front fees but with

exemptions or concessions for prospective students from relatively poor backgrounds. This approach is taken in Italy and Spain, and with respect to public sector institutions in some states in the US.¹ There are at least three difficulties with means-tested bursaries, and these are now addressed.

Eligibility and family sharing

The first concern with means-tested scholarships/concessions relates to eligibility rules, for example, by having entitlements determined by means testing on the basis of family income. This rule raises the potentially very important problem of the sharing of financial resources within the family as highlighted by Carneiro and Heckman (2002), and which can be explained as follows.

Consider prospective students not qualifying for a concession or an exemption because their household income is considered to be too high. Some of these prospective students will be in families in which there is a limited sharing of finances, or there might be disagreements between family members concerning the value of a prospective student undertaking higher education. Further, the means-testing rule might be too harsh, providing insufficient protection for prospective students whose families are adversely affected by unanticipated negative influences on expenditures, such as those associated with poor medical circumstances.

The critical point is that being from an apparently relatively advantaged family in terms of observed income does not necessarily mean that a prospective student has access to finances to pay fees. If prospective students are unable to secure a scholarship to pay for tuition or for income support, they are directly confronted with the capital market problem of the lack of access to commercial bank assistance. Thus talented prospective students can be excluded from higher education, even if they are apparently not disadvantaged with respect to family income.

Scholarships can be inequitable

The second set of issues concerning the possible weakness of a scholarship system relates to lifetime income distribution. That is, while many higher education students are poor, the majority of graduates will not be disadvantaged over their lifetimes, a point illustrated clearly in the average income relationships shown in Figure 2.1. Moreover, the private rate of return calculations summarised in Chapter 2 provide significant support for the notion that higher education graduates on average are economically advantaged.

Thus the offer of 'free education' for some through fee exemption, or income support subsidies, are likely to be regressive over the longer term, given that the exemption is paid for by all taxpayers, most of whom are

non-graduates and on average receiving lower incomes. The importance of this point can be traced to giving a relatively high weight to lifetime, as opposed to point-in-time, distributional considerations. In this view it is clear that scholarships provide important benefits to individuals who on average will be more advantaged than the majority of taxpayers providing the financial resources.

Concessions still mean up-front fees

The final point relates to concessions, that is, the requirement that some part of an up-front fee requirement is forgiven for eligible students. The problem is that a concession still involves part payment of an up-front fee, and this raises again the basic capital market problem explained in Chapter 2. That is, a student qualifying for a concession still has to find some financial resources up-front which has the potential to exclude talented prospective students. As well, the lifetime distributional issue raised above with respect to scholarships applies also to concessions.

3.3 Are ICLs necessary? The benefits and costs of government guaranteed bank loans

Government guaranteed bank loans described

A possible solution to the capital market problem described in Chapter 2 is used in many countries, such as the US, Canada,² Japan and the Netherlands.³ It involves higher education institutions charging up-front fees but with government assisted bank loans for both tuition and income support being made available to students on the basis of means testing of family incomes. Public sector support usually (for example, in Canada) takes two forms: the payment of interest on the debt before a student graduates and the guarantee of repayment of the debt to the bank in the event of default. Arrangements such as these are designed to facilitate the involvement of commercial lenders, and the fact that they are internationally a common form of government financial assistance would seem to validate their use.

Benefits for banks

This form of assistance seems to address the capital market failure problem for lenders, since with this approach banks do not need borrowers to have collateral because the public sector assumes the risks and costs of default. Government guaranteed bank loans address the higher education financing problem for lenders, essentially because the guarantee removes the bank's needs for collateral in the event of default. However, solving the problem of the provision of finance from the perspective of the banks is not the end of the story.

Government guaranteed bank loans raise 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 related to borrowers' repayment difficulties.

Costs for students: default risk

All forms of bank loans have repayment obligations which are fixed with respect to time and are thus not sensitive to an individual's future financial circumstances. This raises the prospect of default for some prospective borrowers, and this means damage to a student's credit reputation and thus eligibility for other loans, such as for a home mortgage (Barr 1989; Chapman 1997a). 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 (2006).

There is a distributional issue here, related to the evidence concerning which students actually do default. Dynarski (1994) used the National Post-secondary Student Aid Study and found strong evidence that experiencing low earnings after leaving formal education is a strong determinant of default. Importantly, 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 have the potential 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.

Costs for students: anticipating repayment hardships

A related problem for students with bank loans concerns possible consumption difficulties associated with fixed repayments. If the expected path of future incomes is variable, a fixed level of a debt payment increases the variance of disposable (after debt repayment) incomes. The point can be illustrated with the following simple example.

Imagine that a student incurs a debt with a constant monthly level of repayments of \$A1,000 after graduation, say, for ten years. If her monthly

income is expected to be a constant amount of \$A5,000 after-tax, then the debt is also a constant proportion of income, in this case 20 per cent. It is more likely to be the case that she expects her income to increase over time, as a result of promotions for example, implying that the bank repayment would be expected to fall as a proportion of disposable income. In these cases the bank loan should not be expected to diminish her welfare.

But in the event of misfortune, such as job loss, or sickness, the student's expected income stream might be far less stable than for the above circumstances. For example, imagine that the student gives a positive probability to a monthly after-tax income stream of \$A5,000 for the first year, but only \$A2,000 for the second year. In this case, her *ex post* loan obligations turn out to be 20 per cent of income initially, but then reach 50 per cent of income. The fixed loan repayment obligation is then associated with potentially very significant consumption hardships. Moreover, the possibility has a greater potential to discourage loan take-up from those expecting not to have access to alternative finances to help in the event of low future incomes, and these are more likely to be members of relatively disadvantaged groups.

Finnie and Usher (2006) offer useful empirical evidence on repayment hardships from bank loans, noting from cross-sectional survey data that between 20 and 35 per cent of former students report 'difficulties in repayment' of Canada Student Loans. Some proportion of these might be able to secure deferments of payments, but it is still highly likely that unanticipated economic misfortunes result in direct welfare losses for those affected. This problem with bank loan repayments is considered in much more detail in Section 3.4.

Costs for students: non-universality and family sharing

A final possible practical problem of government guaranteed bank loans relates to the fact that in many countries loans of this type are not universally available, or available loan levels are limited.⁴ This is because loan provision and/or amounts available are usually 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. Means testing with loans, as is the case with scholarships and concessions, means that some prospective students will have difficulties accessing the system.

3.4 The characteristics and broad advantages of ICL

What exactly is an ICL?

An ICL entails the provision of finance, or more generally, economic benefits, that are required to be repaid when and only if borrowers experience propitious future circumstances. Thus, unlike normal bank loans, this instrument gives significant weight to borrowers' capacity to pay, and its major advantages can be traced to this feature. ICLs for the payment of higher education charges involve students committing to pay, but only when and if their incomes exceed a specified amount; because repayment depends on income this generally happens after graduation. The essential benefit of ICLs explained below, is that, if properly designed, the arrangement avoids the problems outlined above for both means-tested scholarships/concessions and government guaranteed bank loans.

ICL should be universal and can be for both tuition and income support

The vast majority of all ICL tuition schemes currently in operation internationally are universal in coverage, meaning that the access issues associated with means testing and scholarship/concession arrangements are avoided. The important point is that so long as an ICL is made universally available, the financial circumstances of a prospective student's family are not relevant to the participation decision. This has led Chapman (1996b) to argue that ICL reforms proposed for the Canadian Student Loan programme should not be restricted to a subset of 1996 students with eligibility defined by family income.

Much of the following analysis considers ICLs for the payment of tuition charges. However, it should be clear from Figure 2.1 that for full-time students tuition is not the biggest cost facing higher education students; it is instead the financing of living expenses. In the diagram this is reflected by the difference between non-graduate and student earnings in the period of study, and is known as foregone earnings.

The basic capital market problem explained in Chapter 2 with respect to borrowing to pay tuition charges applies also to income support. That is, a student without financial resources to cover living expenses will generally be unable to secure a commercial loan because of the combination of uncertainty and the lack of collateral for the bank in the event of default. It should make no difference to a bank if a loan is to be used for living costs or for the payment of tuition.

In many countries scholarships and/or bank loans are offered to cover both tuition and income support, including Canada, the US, Italy and Japan. In other countries in which no tuition is charged there are never-

theless means-tested grants and/or loans, such as in Denmark, France, the Republic of Ireland, Germany and Sweden.

Similarly, there are ICL schemes which cover just tuition, such as in Australia, and ICL schemes which provide resources for both tuition and living expenses, such as in New Zealand. In the New Zealand example the living expenses components of assistance are means tested on the basis of family income, or eligibility is determined through reference to a number of criteria designed to reflect a student's financial independence.

Income contingent loans compared to bank loans: default protection for students

Mortgage-style loan arrangements (the usual form of bank loans) involve repayments being required over a specified period of time. No account is taken of changes in circumstances over that period, meaning that a borrower is afforded no protection against having low income in the future – repayments are still at set levels and within the given period of time regardless of ability to pay.

Thus an essential difference between the two types of loans is that the income contingent variety serves to protect former students who earn only low incomes; capacity to pay is an explicit feature of the approach. That is, unlike bank loans, ICL schemes offer a form of 'default insurance', since the former student does not have to pay any charge unless their income exceeds the predetermined level. As noted above, this is very different from a mortgage-style loan, in which the costs of defaulting on the loan may be very high – in terms of being denied access to other capital markets (most notably housing) through the damage to a borrower's credit reputation. Default protection via income contingent repayment thus resolves a fundamental problem for prospective borrowers inherent in mortgage-style loans.

Normal bank loans might well be associated with an aversion to borrowing for human capital investment and, as explained in Chapter 2, this is perfectly understandable. The point is that the returns to higher education investments are uncertain: many students don't graduate and differences in income within occupational categories, even for graduates, are very high, which is illustrated through a range of earnings function studies.⁵ But when there is no chance of default – as is the case under income contingent repayment – the issue disappears, a point illustrated in more detail below.

These relative advantages of ICLs 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 might have had traumatic experiences from having bank loans. The point is considered in detail in Callender (2006).

But with ICLs there is a different way of looking at 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. And if capacity to pay is given weight, resulting in default protection and consumption smoothing (see below), it would seem to follow that traditional arguments concerning debt aversion and its implications for the access to the system of those from relatively poor backgrounds are much less applicable. Thus an ICL has the potential to diminish significantly the prospect of debt aversion.

Income contingent loans compared to bank loans: consumption smoothing and minimising repayment hardships for students

As stressed above, the critical characteristic of income contingent loans is that collection obligations are defined by an individual's capacity to pay, and it is this characteristic that can be demonstrated to result in a relatively smooth future consumption path, compared to a bank loan. The fact that bank loan repayments have the obvious potential to increase the variance in individual future disposable (after loan repayment) incomes has been touched on briefly in Section 3.3, but can now be demonstrated more comprehensively vis-à-vis income contingent loan repayments.

What follows is an illustration that in circumstances of an individual experiencing high variance in taxable income the repayment of a bank loan results in potentially quite different debt payment obligations, when measured as a proportion of taxable income; this will not be the case with respect to the repayments of an income contingent loan. This all follows from the fact that the bank loan does not take into account capacity to pay.

Our example uses Australian data⁶ and requires several inputs, defining:

- i the amount of debt, the time path of receipt of the funds, the rate of interest, and, for the bank loan, the length of the debt repayment period agreed between the borrower and lender;
- ii the age of the hypothetical student on enrolment, the expected length of time of the course, and the expected age of graduation;
- iii the collection rules of the income contingent loan, including the first income threshold, rates of repayment and the rate of interest;
- iv the stream of incomes by age for the borrowers (assumed to differ by sex).

To these ends, the following scenarios are used. Two students, one male and one female, are assumed to enrol in an undergraduate course at age 18 and complete in four years, graduating at age 22. At this point the graduates begin full-time work and earn the average annual incomes by age for

full-time wage and salary workers of their sex. The age–earnings profiles come from earnings function estimates taken from the 2003 cross-section of the Household, Income and Labour Dynamics of Australia (HILDA)⁷ survey,⁸ and are shown in Figure 3.1 for \$A(2005).

The students are assumed to borrow from a bank \$A7,000 per year for each of the four years, and to accumulate interest on the debt at the nominal rate of 7 per cent per year,⁹ with repayments not being required until the student graduates at age 22, with an average of 12 years being required to repay the bank loan in full. The income contingent loan is assumed to take the general form of those in operation in Australia, New Zealand and the UK, known as ‘risk-sharing’ (for comparative analysis of different types of ICL, see Section 3.5). In this example, the debt level and the interest rates are the same as for the bank loan, but with no repayments being required until the graduate earns \$A40,000 per year, and at a constant repayment rate of 7 per cent of earnings per annum.

The calculations reveal that for men and women graduates assumed to work full-time there is little difference between the bank and the income contingent schemes in the annual obligations with respect to repayments as proportions of earnings. As well, the time taken to repay the loans is approximately the same, with debt obligations being completed by ages 31 and 33 respectively for both men and women. These results are shown graphically in the Appendix at the end of this chapter.

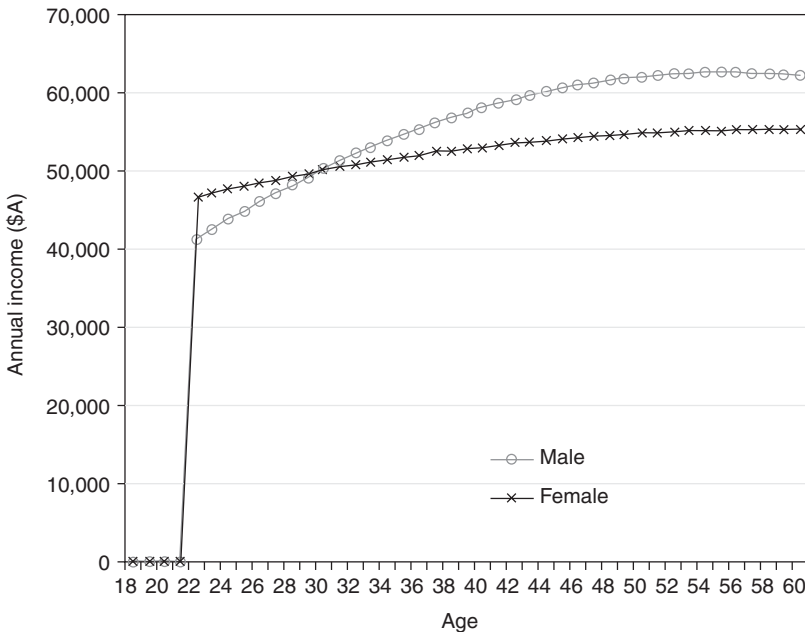


Figure 3.1 Average earnings for graduates working full-time (\$A(2005)).

But comparisons of the effects of the different loan arrangements becomes much more interesting when graduate incomes are assumed to change markedly over time. This can be illustrated through the construction of the following scenario. Imagine our graduates have a serious accident at age 25, which leads to job loss and a period of welfare dependency until they are aged 28. At age 29 it is assumed that they are sufficiently recovered to work part-time until age 32, where part-time work is assumed to be half the hours and thus half the earnings of a full-time worker. At age 32 they are fully recovered and resume full-time work, earning the same income as an average graduate with their level of full-time labour market experience.¹⁰ The assumed income streams are shown in Figure 3.2, again taken from wage estimations using the HILDA survey.

The above income streams will then be associated with substantially different loan repayments for bank loans compared to income contingent schemes. In absolute dollar terms Figure 3.3 shows the structure of repayments of both men and women graduates for each type of loan.

The data from Figure 3.3 show that, because repayments are fixed over time, the dollar level of bank loan repayments does not change year to year, and is just over \$A3,500 per annum for the conditions described. However, things are very different for the income contingent loan since in

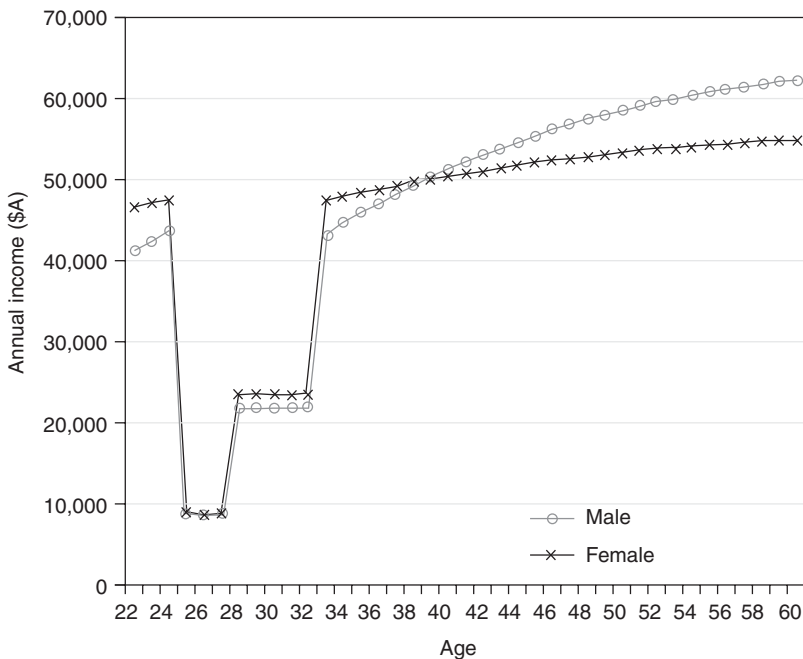


Figure 3.2 Average annual earnings for graduates with highly variable earnings streams (\$A(2005)).

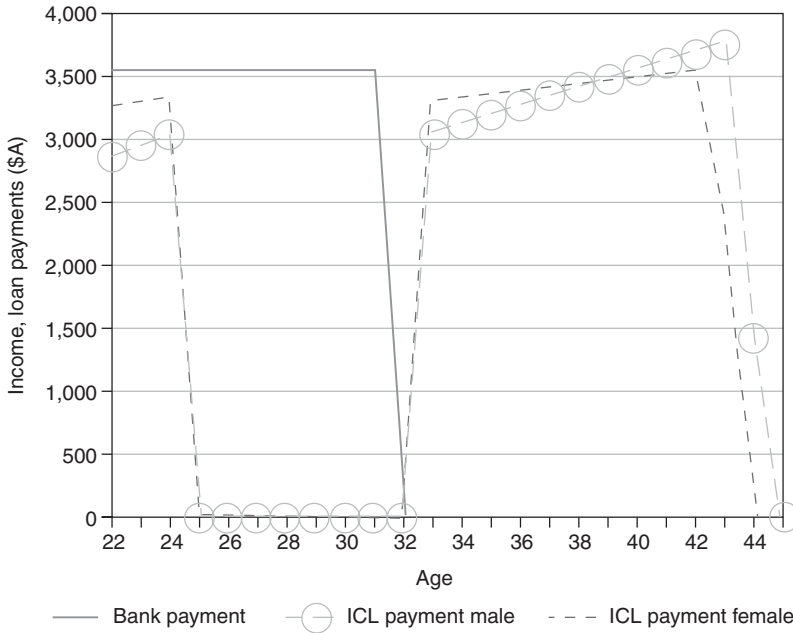


Figure 3.3 Bank and ICL annual dollar repayments with highly variable graduate earnings streams (\$A).

periods in which the graduate's income falls below \$A40,000 no repayments are required. Thus, in our example, the periods in which the graduate is either on welfare or working part-time are associated with no repayments, a consequence being that the borrower is required to repay the loan for additional years after resuming full-time work.

These repayment results can be presented as proportions of annual income, and this is now shown in Figure 3.4, for women only because the results are almost identical for males.

The important points from the data are as follows. One, for female (and male) graduates ICL repayments are either 7 per cent of incomes (when earnings exceed \$A40,000 per year), or are zero (when earnings are less than \$A40,000 per year). As a result the length of time to repay is relatively long, and graduates finish paying the loan in their early 40s. There will be about ten extra years of repayment of the ICL but, of course, repayments are required only in years of relative prosperity.

Second, the situation with respect to the repayment of the bank loan is completely different because obligations are time invariant. This feature means that in the period of unemployment the graduate would be required to repay to the bank as much as 40 per cent of annual income, while in the period of part-time work the proportion is still relatively high

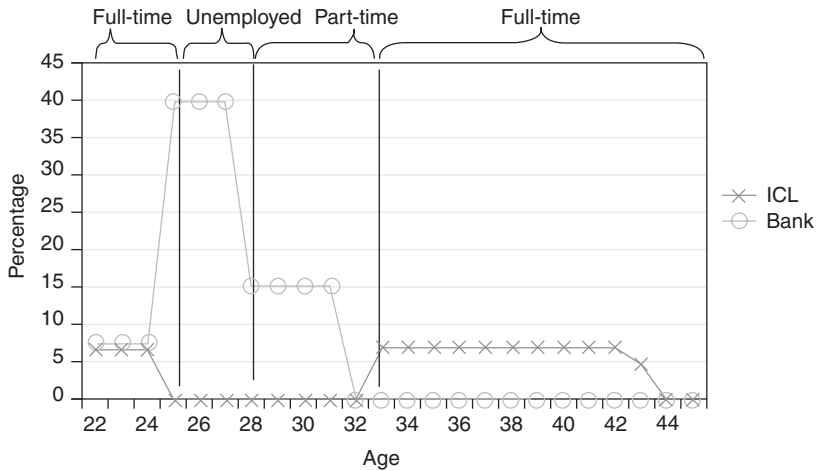


Figure 3.4 Female debt repayments as a proportion of earnings with highly variable graduate earnings streams.

but falls to about 15 per cent of earnings. As a result of these high early repayments the bank loan obligation is fulfilled by age 32 (for both females and males).

It might be suggested that the example chosen is very extreme. But even if it is unlikely for a graduate to experience eight years or so earning a low income because of bad luck, it is still obviously the case that in any period of unemployment or part-time work bank loan repayments as a proportion of income will be very high, and thus constitute a relatively difficult repayment experience. The point is reinforced in the situation in which the student does not graduate, since in this event earnings could very well be low for life, meaning that the bank repayments might be proportionately very high (and the ICL repayments lower per period than the above, or even zero). In Chapter 4 these impacts are shown for, and reinforced by using, the current Australian ICL repayment parameters.

The examples and discussion illustrate an essential difference between mortgage (bank) and income contingent loans. The former will almost always have higher variances with respect to disposable (after loan repayment) incomes than will an ICL. This feature of an ICL is known as consumption smoothing and implies clearly a diminution in the potential hardships associated with loan repayments.

A related and specific advantage of ICLs with respect to loan repayment hardship 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 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 with lower paid public interest employment encouraged the Clinton administration to introduce an ICL option in the US in 1993. It is considered in detail in Chapter 5.

The importance of administrative efficiency and collection

In general ICLs have some obvious advantages over both scholarships/concessions and government guaranteed bank loans. But these net benefits are uninteresting if a country's administrative and institutional context is not suited to the collection of debt contingent on a student's future income.

Barr (2001), Palacios (2004) and Chapman and Nicholls (2004), point out that there are several important conditions that have to be met in order for an ICL to be workable. While this is considered in detail in Chapter 5, the basic points are that the collection agency has to have the capacity to accurately assess the stream of a former student's lifetime income, and to be then able to deduct repayments in a low-cost way. This suggests that private institutions – such as Yale University, which instituted an ICL considered below – are likely to face major collection difficulties, and these may be significant enough to render non-government schemes unworkable.

The point is that, in principle, an ICL could be operated within or outside the public sector, but the public sector has the distinct advantage of administratively efficient collection of debt using the internal revenue service (or tax office), simply because putting an ICL debt collection on top of a comprehensive income tax (or social security) system has a low marginal cost. As well, the public sector has a clear legal jurisdiction with respect to knowing citizens' incomes and it is not obvious that this would be the case for a private debt collection institution. Collection of ICLs and, more generally, ICL design, is a fundamental issue for policy; detailed discussion is provided in Chapter 5.

Private sector versus public sector financing

In some policy discussion of student loans emphasis is given to the need for private sector financing. With a financing approach involving government guaranteed loans from the commercial banking sector, this is obviously sorted out, but this in general will not be the case with respect to the institution of an income contingent loan scheme.

In some cases, for example, the introduction of income contingent tuition charges in place of the fully taxpayer supported system of Australia, neither public nor private sector funds are required. However, in others, such as for the New Zealand scheme, funds are needed to provide resources for student income support.

There are several possibilities. Finance could come from taxes, a bond issue and/or aid revenue. While this would be the traditional approach to public sector financing, there might be an alternative to government financing. This could involve a commercial bank providing the initial resources to students, with the government writing a borrowing contract with the bank. With an effective income contingent loan mechanism the government would collect the loan repayments through the tax system from former students in the future, so there would be no implications for public sector revenues in the long run. To ensure this is the case the government could impose a small surcharge on top of the loan as compensation for the value of default collection to the student.

For the government this means that initial outlays would only be as high as the interest on the debt paid to the bank, so little early finance is required. Over time the repayments from the students would allow the government to repay a bank with no or low costs, so long as the income contingent loan is collected efficiently. The Australian government used this financing approach in a student income support scheme using income contingent repayments (known as the AUSTUDY Loan Supplement introduced in 1993 (Chapman 1992)).

It is apposite, however, that there be a fully informed discussion of the alleged benefits of private financing. The 'optics' for the budget might be favourable, but it is not obvious that such approaches deliver important societal benefits.

3.5 The different types of income contingent instruments: costs and benefits

Introduction

It is important to recognise that there are different forms of income contingent 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 consequences for both behaviour and outcomes are now examined.

This type of financing takes several broad forms known as risk-pooling, 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; the rate of interest; the existence or otherwise of forgiveness of the debt, and minimum income thresholds. However, even though these types of ICL are conceptually distinct, there are many hybrids that fit within the broad categories uneasily. The broad types of categories are now considered.

Income contingent loans with risk-pooling

An ICL with so-called 'risk-pooling' is one with a fixed total debt for members of cohorts involved in the scheme. With this approach students signing on to the debt repayment are also agreeing to take some financial responsibility for debt (up to a maximum) that is not paid by others involved in the contract.

Like all ICLs the risk-pooling variety offers in essence an insurance system, but one with premiums adjusted *ex post* to take into account the repayment experience of others in the borrowing cohort. Like most ICLs the arrangement means that borrowers with high future incomes, the 'winners', will repay more than is repaid by those with low future incomes, the 'losers'. However, the distinctive feature of a risk-pooling ICL is that the effective interest rate for successful investors in human capital will be set at (or adjusted to) a level sufficiently high to compensate for the extent of non-payment by others, because members of the latter group effectively default, either through avoidance or from experiencing low lifetime incomes.

The important issue is that risk-pooling ICLs transfer default risks and costs to non-defaulters and thus have the potential to increase significantly the repayment obligations of members of the latter group. This apparently is what happened with respect to the Yale Plan, now examined.

The Yale Plan, introduced at Yale University in the 1970s but since discontinued, is the best-known example of a full risk-pooling ICL. Nerlove (1975) analysed risk-pooling ICL with particular reference to the Yale Plan and raised 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 ICL encourage a form of adverse selection. Specifically, he emphasised that since such schemes are designed to be revenue-neutral (that is, 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 poor future prospects have an incentive to take such loans because if their expectations turn out to be correct, they will have their repayments subsidised by winners.

Nerlove argued that in combination these behavioural effects have the clear implication that the cohort of students willing to borrow from a risk-pooling ICL will on average be made up of individuals expecting their future earnings to be relatively low. 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 alternative financial assistance such as subsidised bank loans.

Risk-pooling ICLs are also analysed in Hanushek *et al.* (2003). They use a general equilibrium approach to consider the effects of different types of college aid on the efficiency of the economy, intergenerational mobility and income inequality. Specifically, they find that compared to both needs-based and merit-based aid a risk-pooling ICL potentially can result in more equal distributions of income, but that, as similarly found by Nerlove, the pooling aspect of such schemes will encourage adverse selection. This problem might be important enough to mean that: 'the smart poor end up subsidising the other participants, including the lower ability rich kids' (Hanushek *et al.*, 2003, p. 26), leading the authors to promote an ability cut-off for ICL eligibility.

The second problem for risk-pooling ICLs, also identified by Nerlove, involves moral hazard, and relates to the behavioural response of debtors. Since the scheme in effect redistributes loan obligations towards individuals who are successful on the basis of declared income, the incentive is for graduates in debt to arrange their incomes, or make job choices, in ways that minimise the extent of the repayment obligation. This could take the form of choosing jobs with relatively high proportions of remuneration being in the form of non-measurable income, such as with respect to flexibility of hours.

The implication of this form of moral hazard behaviour is that, if successful, it has the effect of requiring those debtors who have done relatively poorly in the labour market paying more than would have been expected on the level of incomes they earn. There is thus a built-in incentive for risk-pooling ICLs not to achieve the promised levels of protection for unsuccessful debtors.

In relation to these conceptual points Raymond and Sesnowitz (1976) explore the extent to which repayment obligations from those involved in risk-pooling ICLs might be considered burdensome. Through a series of simulation exercises they found that under most sensible parameters of potential repayment, ICLs 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' 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 ICLs, Feldman (1976) conducted a series of simulations of the effects of current versus ICL 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).

The issues of adverse selection and moral hazard raised by Nerlove and

others constitute serious challenges for those advocating risk-pooling ICLs as a solution to capital market failure and as an answer to the problems associated with government guaranteed bank loans. With respect to moral hazard this seems to be particularly likely with respect to the *ex post* implications of risk-pooling ICLs. 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. This point is also true, but less important, for ICLs with risk-sharing now considered.

Income contingent loans with risk-sharing

A different form of ICL, and one now in operation in several countries, is known as 'risk-sharing'. With risk-sharing ICLs, borrowers are obligated to repay a maximum amount, with the extent of the obligation being unrelated to the debt repayments of others. That is, the risks that an individual's debt is not repaid in full – the costs of income contingent payments – are shared with taxpayers and not other debtors as is the case for risk-pooling ICLs. It follows that total debts repaid will necessarily differ between loan cohorts, defined at different points in time, because of time dependent labour market exigencies.

There is thus a critical difference between risk-sharing and risk-pooling ICLs, with implications for both adverse selection and moral hazard. Because those expecting to do very well in the labour market will not have to pay for those who do poorly, a risk-sharing ICL avoids to some extent the prospect of adverse selection. Compared to a risk-pooling system, it is less likely for a risk-sharing ICL 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.

Unlike with respect to a risk-pooling ICL, with risk-sharing ICL there are no down side risks for borrowers. This means that if the government receives lower than expected repayments there are no associated penalties for borrowers,¹¹ nor are there any rewards to borrowers if the opposite turns out to be the case. Repayment risks are minimised and thus the advantage of this type of ICL is that some part of the adverse selection and moral hazard associated with risk-pooling ICLs can be avoided.¹²

However, even with risk-sharing ICLs there is an element of adverse selection, since some prospective borrowers (those who expect with confidence to be high earners) may prefer to undertake different financing strategies to avoid paying the additional impost. The importance of adverse selection can also be minimised through the mandatory ICL collection of tuition, such as now happens in Australia and New Zealand, and will be the case with both the UK and Thai schemes being instituted in 2006 (see Chapter 5.)

Apart from the issues of adverse selection and moral hazard there are important conceptual matters related to the effects and consequences of risk-sharing ICLs. Contributions from the literature focus on issues of risk and provide analyses of both insurance and consumption smoothing. A summary is as follows.

As 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); Paroush (1976)). Most researchers, however, continued to use rates of return calculations (e.g. Psacharopoulos 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 net present values. 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 ICLs, 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 given levels of uncertainty and with respect to a range of assumptions concerning 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 – assuming they are not credit constrained – 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. This implies that Chia's approach understates the insurance value of an ICL.

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'. Similar to Chia's result concerning ability, he showed that the benefit of risk-sharing ICLs

are greater the less certain individuals are of their future incomes and the greater is risk aversion. From Grout's simulation exercises ICLs seem to have the most propitious leverage in terms of the reduction of the costs of uncertainty. That is, the effect of ICLs on welfare, even given a significant range of risk aversion, is relatively small compared to their benefits in terms of minimising the effects of uncertainty.

Quiggin (2003) extends these results, showing that educational financing schemes with income contingent repayments 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 educational financing schemes with income contingent repayment 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 ICL 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 ICL, 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 of 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 ICLs 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.

He illustrates that this is possible with an ICL in which the interest rate on the debt is zero in periods of unemployment. In this model the costs of job search are shared and the essential financing problem is addressed. The question of whether or not this is a large or small issue for policy should be addressed by noting that graduates in fact spend very little time over their lifetimes in unemployment, even though they may be involved in extensive periods of search for preferred employment. It is arguable that the Moen result could be generalised to other periods of graduate job search characterised by the receipt of relatively low wages.

The overall conclusion from these somewhat different modelling approaches is the same: an ICL 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 ICL of this type to

contribute in equity terms. This suggests that the relatively high welfare properties of risk-sharing ICLs understate the overall social benefits of these types of approaches to higher education financing.

Graduate taxes

A very different form of an income contingent loan 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 ICLs, which is that 'loan' payments are made in such a way as to ensure both default protection and consumption smoothing. 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) with the use of some plausible simulations.

However, there are significant differences between GTs and ICLs. The most obvious is that the former are in no sense based on cost recovery. This can lead to the so-called 'Mick Jagger' problem, as explained in Barr (2001). 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, 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 also unrelated to the benefits accruing from higher education. A GT would seem then to have the adverse selection problems of a risk-pooling ICL. The problem of 'excessive' payments could be minimised by setting a maximum repayment level.

A second and related difference is that for very high earners the fact that the GT is an ongoing (at least to a maximum level) obligation on top of income tax, might imply that there are higher work disincentives from this form of payment than would be the case for a risk-sharing ICL (Barr 2001), and this could encourage repayment avoidance. This is a variant of the moral hazard problem associated with risk-pooling ICLs raised by Nerlove (1975) and given empirical content by Feldman (1976).

Third, the revenue from GTs will not reflect marginal cost pricing rules, and nor do the payments 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-sharing ICL in which the

charge can be related directly to higher education pricing policies and thus resource allocation.¹³ This is a general issue for courses of markedly different length or with different levels of student demand, but the point applies also to having identical repayment rates for students enrolling in one course only, or not graduating, compared to those completing a degree (or several degrees).

The major possible benefit of a GT is that the arrangement has the potential to deliver considerable resources to the public sector, arguably much more than is the case with respect to an ICL. As well, and associated with this, if collected efficiently and fairly, GTs will generally provide a high level of progressivity in a lifetime sense since graduates with the highest incomes would be likely to pay more than they would under alternative financing arrangements. But there remain significant problems of implementation.

Human capital contracts

There has been recent interest in whether private firms could be involved in loans in which payments are tied to the borrower's income. Proponents of these arrangements question the notion that it should only be the public sector sharing in the risk involved with ICL schemes. That is, some analysts argue that there are circumstances in which the risks associated with higher education investments could be placed in private hands. It is argued that private involvement could take place with or without a framework of national higher education financing assistance.

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. 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 paid in the 'borrowing' period). This way 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. In the spirit of recognising the nature of the lender's investment, arrangements of this type have been called human capital contracts (HCCs) by those interested in privately funded investments in education.

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 a market instrument for measuring the value of the insurance implicit in an ICL, thereby introducing a market measure of the extra returns that governments should ask students to pay to compensate aggregate expected losses on a risk-sharing ICL.

Recognising the possibility that using loans where 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 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 what economists call 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 her or his own income prospects and also the borrower's degree of risk aversion. Carver 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. The model can be adapted to arrive at the same conclusions for HCCs as Chia reaches with respect to risk-sharing ICLs.

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 from incomes, as operates in Australia, New Zealand and will in the UK in 2006, but the principles of default protection and consumption smoothing remain intact.

An as yet untested aspect of HCC relates to the potential for legal complications associated with the verification of debtors' incomes. Unlike ICLs remitted to the public sector, there is not necessarily a clear legal mandate for collection to be operated by private agencies.

3.6 Summary

It was concluded from the analysis of Chapter 2 that on the basis of at least equity, and arguably economic efficiency, there is a strong case for

students being charged tuition for higher education. As well, a proportion of students will require finances to cover the high costs associated with living expenses during a period of full-time study. But the nature of the capital market is such as to mean that in the absence of government loan intervention many prospective students will be unable to gain access to the system.

While there are many possible ways of organising financing for higher education students, all except one are problematic conceptually. First, not charging and offering income support grants is inequitable with respect to taxpayers who are financing the system. Or, second, having a charge but excusing the payment on the basis of low family income would be likely to exclude students without access to the family's finances, and also has the strong potential to be inequitable in a lifetime income context.

The most common form of government assistance is the provision of government guaranteed and subsidised bank loans, with eligibility being defined by means-testing family income. There are important shortcomings with this approach.

- i Loans are not often universally available, and/or support levels usually depend on family income, suggesting that some students with unwilling families will not be able to borrow, and will thus face the inequities and difficulties associated with the absence of income support and the payment of up-front tuition.
- ii The costs for the public sector can be high, due to student default.
- iii Some risk averse potential students will not be prepared to undertake loans with repayment burdens which are insensitive to a student's future capacity to pay; this is because loans repaid on the basis of time, rather than income, are associated with both default risks and potential repayment hardships.
- iv There might well be socially unproductive career choices made by graduates facing very high loan repayments that are not sensitive to capacity to pay.

These shortcomings imply strongly that some other approach to the capital market problem is required. Income contingent loans offer a potential solution.

ICLs require a student to repay a debt depending on the level of their future incomes. Their essential benefit is that they are defined by capacity to pay, and this delivers both default insurance and minimal repayment hardships. The advantages with respect to the latter, compared to the traditional repayments of bank loans, have been illustrated with several hypothetical scenarios.

The empirical work demonstrated that in circumstances in which graduate incomes fluctuate, and are low for some periods, ICLs offer significant protection against repayment hardships compared to bank loans. In the

scenarios considered, bank loan repayments reached up to 40 per cent of disposable incomes in periods of unemployment, and 15 per cent of disposable incomes when graduates were working but earning low incomes. In contrast, ICL repayments in any given period must fluctuate much less as a proportion of disposable incomes. This means for ICLs that repayment periods will be longer, and gentler.

It has been explained that there are several forms of income contingent financing instruments: risk-pooling, risk-sharing, graduate taxes and human capital contracts. The discussion has illustrated major differences between, and complexities within, all genres.

ICLs with risk-pooling are likely to lead to significant problems with respect to adverse selection in terms of who chooses to be involved in such schemes, and moral hazard concerning the labour/leisure and work effort choice once the repayment period begins. Economic theory and experience with the Yale University risk-pooling ICL suggest strongly that this form of loan assistance has undesirable properties.

ICLs with risk-sharing can avoid these problems and, so long as they can be collected efficiently, seem to offer the best prospects for an ICL policy intervention. But they are associated with trade-offs for government: the greater is the insurance provided, the higher necessarily is the degree of public sector subsidy. The experience with Australia's risk-sharing ICL is documented in Chapter 4.

Graduate taxes have little prospect of allocative efficiency because there are no economic benefits delivered to institutions from price competition. As well, a GT would usually mean that some higher education graduates would end up paying much more than the costs they have incurred, and this is more difficult to justify than a normal ICL designed to recover a given level of debt. Nevertheless, a single form of GT, perhaps for a limited time period, might be an effective way to implement cost recovery in some institutional contexts (see Chapter 5).

A recent innovative instrument involving only the private sector is known as human capital contracts. These arrangements are between a student and a financing company, in which the former is given a sum of money for tuition and living expenses in return for a contractual obligation to pay the lender a percentage of income for a predetermined period after graduation. Human capital contracts (HCCs) thus 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).

Appendix 3.1

A more formal treatment of the parameters of a risk-sharing ICL

What follows is a formal explanation of some issues related to the parameters of a risk-sharing ICL. All the discussion is in present value terms and follows from the modelling of the Appendix to Chapter 2.

To understand how a risk-sharing ICL might work, and in so doing clarify some of the behavioural implications of these approaches (particularly why adverse selection and moral hazard are likely to be less important problems), consider the following formal hypothetical example. All the discussion is in present value terms and follows from the modelling set up in the Appendix to Chapter 2.

The government puts a marginal value on the externalities of x , and for reasons of economic efficiency sets tuition for a public sector university at t , where $t = MC - x$ (with MC being the marginal cost of the course). Let us assume that the government knows that with respect to all students undertaking an ICL, some proportion, d , of total loan outlays, has not been repaid in the past. So, in order to cover this exigency, on average the government requires a student undertaking a tuition ICL to commit *ex ante* to repaying $(1 + d)t$. *Ex post*, if the parameters have been set accurately, the government receives in total the full tuition payment t .

With this arrangement some former students (the successful ones) will pay more than t , and some former students (the unsuccessful ones) will obviously pay less than this (including a small number who repay nothing). If the parameters have been set incorrectly, and total repayments lost through default turn out to be higher than dt , taxpayers cover this additional cost. This is the sense in which taxpayers are 'sharing' the risk and, in this circumstance, taxpayers in aggregate will lose. If the parameters have been set incorrectly in the other direction, and repayments lost through default turn out to be lower than dt , taxpayers receive this windfall. In this circumstance taxpayers in aggregate will win.

Appendix 3.2

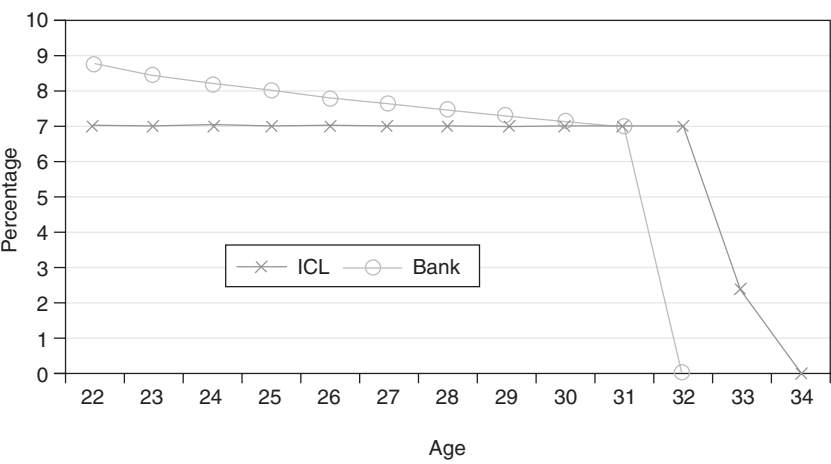


Figure 3.a.1 Full-time employed graduate debt repayments as a proportion of taxable income – males.

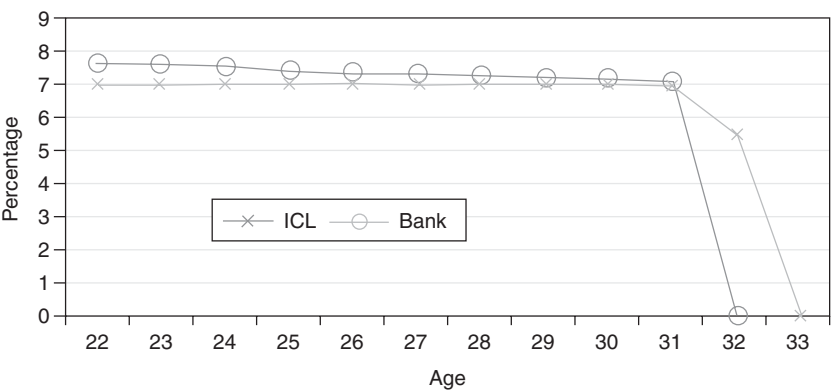


Figure 3.a.2 Full-time employed graduate debt repayments as a proportion of taxable income – females.

Notes

- * Parts of this chapter draw upon Bruce Chapman (2006), “Income related student loans: Concepts, international reforms and administrative challenges,” in Pedro Tixeira *et al.* (eds), *Cost-sharing and Accessibility in Higher Education: A fairer deal?*, Dordrecht: Springer: 79–104.
- 1 See UK Department for Education and Skills (2003).
- 2 For critical analysis of the Canadian system, see Finnie and Schwartz (1996).
- 3 UK Department for Education and Skills (2003).

- 4 Eligibility for Canada Student Loans, for example, is determined in part by an assessment of needs, and have been made available to less than half of the student population (Finnie and Schwartz 1996).
- 5 In the Australian context, Miller and Volker (1993) demonstrate this strongly.
- 6 In 2005 the exchange rate between the Australian and US dollars was around 1:0.75. The Australian age earnings profiles used are extremely similar to those available for a host of countries over different time periods.
- 7 HILDA is a large (over 13,000 households) ongoing annual Australian panel data set, financed by the Australian government and administered by the University of Melbourne. The first wave was collected in 2001.
- 8 The coefficients for annual income determinants for graduates are as follows:

Male: $Annual_Income = 41,236.99 + 1,280.85 \cdot Exp - 19.2 \cdot Exp^2$

Female: $Annual_Income = 46,712.12 + 471.72 \cdot Exp - 6.5 \cdot Exp^2$

where Exp is a proxy for the time spent in the labour force after age 22.

- 9 The rate is for a personal loan with conditions specified for the National Bank in http://www.national.com.au/download/int_rates_pers_lending_10012005.pdf.
- 10 Thus the approach implicitly assumes that the labour market experience accumulated while working part-time does not add to the individual's earnings capacity.
- 11 The point is made in different terms by Johnstone (1972b).
- 12 These issues are presented in technical detail in Appendix 3.2.
- 13 Risk-sharing ICLs do not necessarily use the advantage of allocative efficiency from differential pricing and returns to higher education institutions. From 1989 to 2004, for example, the Australian scheme had uniform prices and delivered all revenue to the central budget, meaning there were no resource allocation implications for universities. The system changed in 2005 to one in which some price discretion is allowed.

4 A detailed case study of a risk-sharing income contingent loan

Australia, 1989 to 2004

4.1 Introduction

The analysis and discussion presented in Chapters 2 and 3 suggest that, if it can be made operational, a risk-sharing ICL is a higher education financing approach with arguably the most important potential to deliver equitable and efficient higher education outcomes. This raises the critical empirical question for policy: what are the effects of such schemes? Addressing the issue is not straightforward.

A difficulty relates to the fact that ICLs of this genre, while becoming more commonplace, are still unusual and of only recent origin. As noted, the first national scheme was introduced in Australia in 1989, and while New Zealand, South Africa, Chile and the UK have adopted ICLs broadly of this type, there is not yet a body of literature on the implications of ICLs for most of these countries. With respect to Australia, however, there has been considerable research on the topic and there are arguably generic lessons for other countries and the effects of risk-sharing ICL in general. Consequently, this chapter focuses on the Australian experience with its ICL, the Higher Education Contribution Scheme (HECS).

For each country there will be a unique institutional and policy history with respect to higher education financing, and insight into the effects of the adoption of new financing approaches is enriched through an understanding of these histories. Thus the scene is set with a brief overview of Australian financing approaches over recent decades.

Later sections of this chapter consider the effects of HECS on a range of outcomes. Among others these include: graduate repayment profiles; consumption smoothing; the consequences for access of the disadvantaged; and revenue received, administration costs, unpaid debts and consequences for tax compliance. A broad conclusion is that the Australian ICL seems to have delivered propitious outcomes in a range of areas. This does not necessarily mean that other countries will have successful experiences with risk-sharing ICLs, a critical policy issue canvassed in considerable detail in Chapter 5.

4.2 A brief history of Australian higher education charging¹

Overview

The financing of Australian higher education has undergone radical change since the early 1970s. At that time the Federal government provided practically all funding, and until the late 1980s there was little political support for change. However, over the last decade and a half there has been a very significant move towards greater private contributions, particularly with respect to tuition charges. This is illustrated in Figure 4.1.

The data from Figure 4.1 reveal that there has been a radical change in the nature of funding, particularly from 1987 to 2000. In this period the proportion of university revenue coming from Federal government sources fell from 85 to just over 50 per cent. This change can be compared with the increase in revenue coming from students, which went from just a couple of per cent to about 25 per cent.²

Further, in 1996 the levels of student charges and the nature of their payment changed. There have also been policy moves over the last few years promoting greater institutional autonomy and flexibility with respect to charging, culminating in the radical reforms suggested in the 2003/04

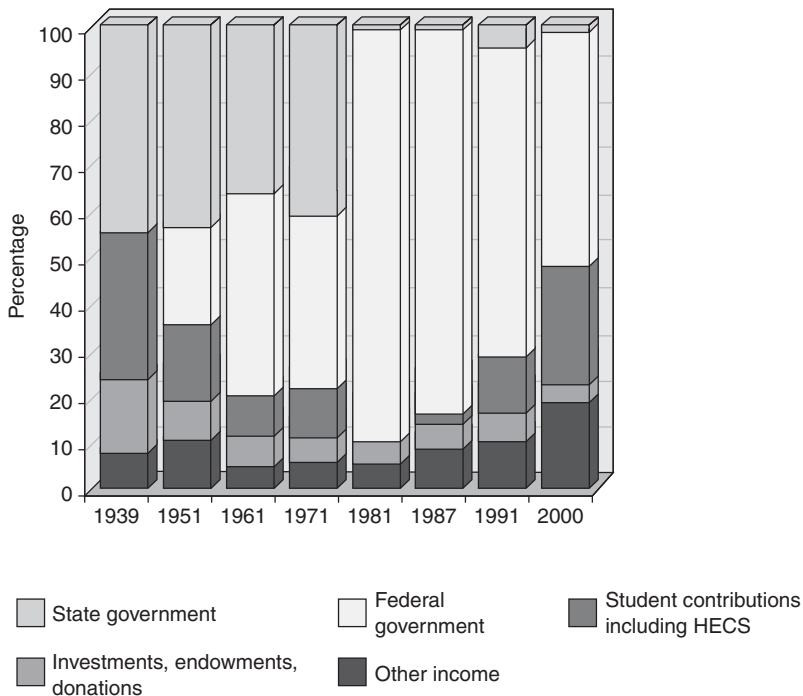


Figure 4.1 Australian university income by source, 1939–2000.

Budget. The current arrangements and the nature of the debate are unrecognisable compared to the circumstances surrounding student contributions in the early 1970s, a point that is also true for many other countries.³

Fee abolition in 1973

In the early 1970s a minority of students paid up-front fees of around \$A400 per annum, in \$A(1972), or around \$A2,500 in today's prices. However, charges were abolished by the Labor Government in 1973. This policy change had a number of motives, among them to remove perceived barriers to participation in higher education by the poor.⁴

The abolition of university fees at this time had no discernible effects on the socio-economic composition of higher education students,⁵ for two reasons. First, only a small proportion of students (20–25 per cent) paid fees, since the great majority had scholarships with fee exemptions. Second, because secondary schooling retention rates to the equivalent of Year 12 were very low at the time (less than 30 per cent), most prospective students from poor families had left the education system well before university entrance became an option.

The higher education administration charge

The Labor Government elected in 1983 introduced the so-called Higher Education Administration Charge (HEAC) in 1986. HEAC was an up-front fee and its introduction is a watershed. It represented the first move in Australia towards universal user-pays for university study. The charge was small – \$A250 (in 1986 terms) – and did not vary with respect to course load. It is clear that this policy change was motivated principally by the view that higher education financed entirely by taxpayers is regressive, a point addressed conceptually in Chapter 2.⁶ There is some evidence that the charge had a small negative effect on mature-aged part-time enrolments.⁷

HECS

The Higher Education Contribution Scheme, recommended by the Wran Committee in 1988,⁸ was adopted in 1989. This was a universal charge to undergraduate students with a unique feature: students could defer payment until their incomes reached a particular threshold, with no real rate of interest being charged once the debt is incurred. This was the world's first national income contingent charge for higher education,⁹ a policy arrangement that has since been adopted in or recommended for other countries.¹⁰

HECS came about because the government wanted to increase higher

education enrolments but was not prepared to pay for the increased expenditure through taxation. More importantly, 'free education' was seen to be regressive and unfair,¹¹ a point explained in detail in Chapter 2.

In 1989 HECS was characterised by the following:

- an annual charge of \$A(1989)1,800, pro-rated by course load, but with no variation by discipline;
- on enrolment students could choose to incur the debt, to be repaid through the tax system depending on personal income, or students could avoid the debt by paying up-front, which was associated with a discount of 15 per cent (later increased to 25 per cent);
- the effect of the discount can be interpreted as a blunt form of a real rate of interest on the debt, since those agreeing to repay later were implicitly taking on an obligation which was initially nearly 18 per cent higher in real terms than for those paying up-front;
- students choosing to pay later faced no repayment obligation unless their personal taxable income exceeded the average income of Australians working for pay (about \$A22,000 per annum in 1989, or around \$A40,000 in 2004);
- at the first income threshold of repayment a former student's obligation was 2 per cent of income, with repayments increasing in percentage terms above the threshold;
- apart from the fact that HECS could be paid up-front with a discount, there was no additional real rate of interest on the debt; and
- the debt and the repayment thresholds were indexed to price and wage inflation respectively.

HECS: the 1996/97 budget changes

In its first Budget, 1996/97, the new Coalition (conservative) government announced four significant higher education financing modifications:¹²

- all HECS charges were increased, by around 40 per cent on average;
- the HECS income thresholds for repayment of the debt were reduced considerably – for example, the annual income initiating the first repayment fell from about \$A30,000 to about \$A21,000 (in 1996 terms);
- the uniform HECS charge was replaced with three levels; and
- universities were allowed to set whatever level of fee they wanted for undergraduates not accepted under existing HECS quotas for up to 25 per cent of students covered by HECS.

The most significant direct change to HECS related to the repayment thresholds. Because the whole structure of repayment rates was moved down, all people repaying HECS – most of whom had graduated before

1997 – would now pay more in present value terms, because they would have less time to benefit from the subsidy implicit in an interest-free loan. Chapman and Salvage (1997) estimate that this meant an average increase in effective repayment obligations of about 10 per cent.

The three-tier charge structure was set with reference to a combination of course costs and what seems to be a presumption of the income advantages of different degrees. For example, one of the lowest cost courses (law) was accorded the highest charge, and one of the high cost courses (nursing) was accorded the lowest charge. Of interest is that the Wran Report also suggested a three-tier charge structure, but with the charges reflecting course costs only.¹³

Postgraduate Education Loans Scheme

In January 2001 the Federal government announced that in 2001 an income contingent loan would be made available to all fee-paying non-research postgraduate students, to cover up-front charges. The scheme is known as the Postgraduate Education Loans Scheme (PELS), and has the following features; there are no limits on the amount a student can borrow, the loan has repayment conditions the same as HECS and universities remain free to set postgraduate charges.¹⁴

The 2005 changes to HECS

In 2003 the government announced radical planned reforms for student charges, to be instituted in 2005. These include: allowing universities to set their own level of HECS, up to a maximum of 25 per cent above the current (three-tiered) charges); an increase in the first income threshold of repayment, to about \$A36,000 per annum; and the provision of a HECS-type loan to be made available to so-called full-fee paying domestic students (up to a maximum of \$A50,000), with the number of students in this category making up a maximum of 35 per cent of places of the entire quota.

The likely effects of these changes are analysed in Beer and Chapman (2004), with the following findings.

- i The potential higher levels of HECS are unlikely to have any significant effects on participation in aggregate, or on the access of the poor, in part because the first income threshold of repayment makes the repayment arrangements more generous for students.
- ii There is not a strong case to allow universities full price discretion, given that they have benefited considerably from long periods of taxpayer subsidies.
- iii If domestic full-fee paying students are to be admitted, it is an improvement to provide a HECS-type loan to assist in their financing

but that the cap on the total loan level of \$A50,000 is a poor aspect of policy. The cap makes it likely that some students will face up-front fees at the end of their courses, having run out of loan funds to cover the charges.

4.3 2004/05 HECS described

Background

The HECS levels and repayment parameters were originally set in 1989, and have been changed several times since. What follows offers description and analysis of the effect of the rules in operation for the 2004/05 financial year. As noted, the system has changed again in 2005, but the main points examined below will generally be true for the new arrangements.

HECS charges

Students intending to enrol in Australian universities in 2004/05 faced tuition charges that varied by course. The bands are now shown in Table 4.1.

These charges mean that arts graduates who complete their course in three years would incur a HECS debt of between \$A10,000 and \$A12,000, a science graduate a debt of just over \$A16,000, and a law graduate (typically a four-year course) around \$A25,000.

Table 4.1 HECS costs by band, 2004

| <i>HECS band</i> | <i>HECS cost for each full-time year (\$A)</i> | <i>Disciplines</i> |
|------------------|--|--|
| Band 1 | 3,768 | Arts, humanities, social studies/behavioural sciences, education, visual/performing arts, nursing, justice and legal studies |
| Band 2 | 5,367 | Mathematics, computing, other health sciences, agriculture/renewable resources, built environment/architecture, sciences, engineering/processing, administration, business and economics |
| Band 3 | 6,283 | Law, medicine, medical science, dentistry, dental services and veterinary science |

Source: Commonwealth Department of Education, Training and Youth Affairs, *HECS: Your Questions Answered, 2004*, Canberra, Australia.

HECS repayment parameters

Students can choose either to pay their HECS charges at the time of enrolment or defer payment, in which case repayments are collected through the tax system. Those who choose to pay their HECS charges up-front receive a discount of 25 per cent, but the implications of this are not necessarily what they seem, an issue considered below. Those opting to defer payment and repay the debt after graduation receive interest rate subsidies equal to the real rate of interest for each year the debt remains unpaid. A consequence is that students who take the pay-later option will receive greater subsidies the longer it takes repay the debt (that is, the lower their future incomes). For analysis of the extent of the subsidy see Chia (1990) and Chapman and Salvage (1997).

The nature of the rate of interest on the charge is important. HECS has a real rate of interest, but it rarely gets reported as such. This comes from the 25 per cent discount for the up-front payment, meaning that those who choose to pay later are initially in debt to the tune of 33 per cent more than those who take the discount.

A critical issue is that the so-called interest rate subsidy depends on what one thinks the true tuition charge is. If the up-front payment is treated as the true charge, there might be close to no subsidy on average from having the debt adjusted only for inflation. It is only if one treats the pay-later nominal debt as the true charge that the subsidy can be interpreted as, and calculated to be, large. When the up-front payment is considered to be the charge, the argument that HECS has significant subsidies is not true.

The HECS interest rate arrangement might be preferred on theoretical grounds to an ICL policy of having no discount and an ongoing real rate of interest, the current New Zealand approach.¹⁵ The latter arrangement can be seen to add to uncertainty, since some former students will find themselves *ex post* in a borrowing situation not of their choosing but because of bad luck, for example. But since ICLs are motivated in part through their capacity to reduce uncertainty, having a contractual arrangement with an ongoing real rate of interest can be associated with the opposite.

The majority of students choose to defer payment of the HECS charge, and for them repayments commence when individual annual income exceeds a minimum threshold level. In the 2004/05 financial year, this minimum income threshold was \$A35,000 per annum. Current repayment conditions are shown in Table 4.2.

The financial effects of these parameters on graduate incomes are now described.

HECS repayments for graduates earning average incomes

It is instructive to illustrate the effect of these charge levels and repayment parameters on the after-tax incomes of graduates by age. In what follows

Table 4.2 HECS Income thresholds and repayment rates: 2004/05

| <i>HECS repayment incomes in the range: (\$A) per year</i> | <i>Per cent of income applied to repayment</i> |
|--|--|
| Below \$35,000 | Nil |
| \$35,001–\$38,987 | 4.0 |
| \$38,988–\$42,972 | 4.5 |
| \$42,973–\$45,232 | 5.0 |
| \$45,233–\$48,621 | 5.5 |
| \$48,622–\$52,657 | 6.0 |
| \$52,658–\$55,429 | 6.5 |
| \$55,430–\$60,971 | 7.0 |
| \$60,972–\$64,999 | 7.5 |
| \$65,000 and above | 8.0 |

Source: Australian Taxation Office, *Repaying your HECS debt 2004–05*, Canberra, Australia.

the 2004/05 HECS repayment parameters have been applied for male and female students, assuming: they begin a four year science degree at age 18, graduating at age 22 and, after graduation, take a full-time job earning the average income by age of graduates of their sex. The same earnings function data were used in a related exercise reported in Chapter 3 (that is, the estimates are derived from the 2003 Household, Income and Labour Dynamics of Australia survey (HILDA), updated to 2004/05 dollars).

The results for males and females respectively are shown in Figures 4.2

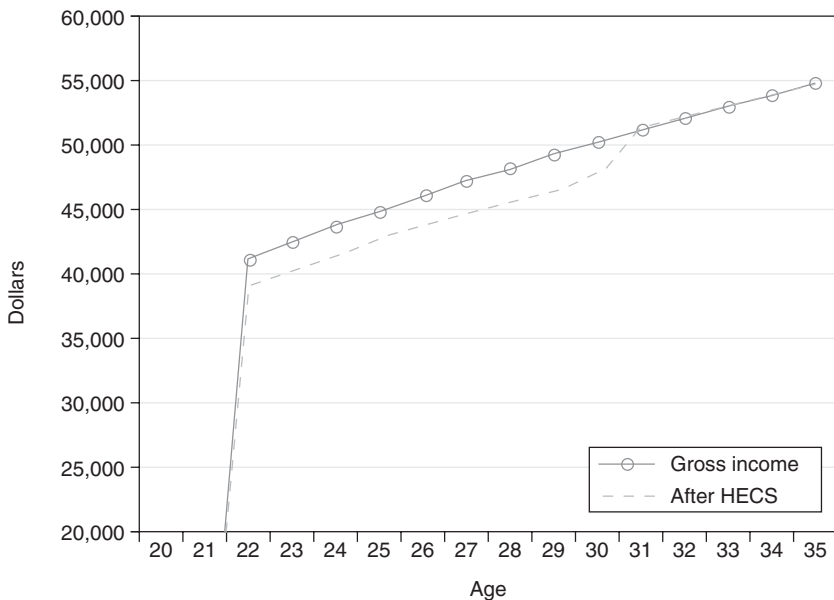


Figure 4.2 Earnings before and after HECS: males (\$A(2004)).

and 4.3, taxable incomes before and after HECS repayments for the higher education investment scenarios described in Chapter 3. The data show that both male and female science graduates earning average graduate incomes for full-time workers will repay their total HECS debt about ten years after graduating, or at about age 31 for our hypothetical students.

However, there will necessarily be a large variance with respect to the time taken to repay a total HECS debt. This is now illustrated.

HECS repayments for graduates not earning average incomes: an illustration

In many cases HECS repayments will be significantly different from those illustrated above. For example, if a graduate experiences a period of unemployment, or is debilitated through illness or injury, there will be consequences for incomes and thus repayments. Graduates with the unemployment and part-time work scenario used to show the relative effects of bank versus income contingent loans in Chapter 3, for example, will repay HECS in a manner illustrated in Figures 4.4 and 4.5.

In these cases HECS is still repaid in a total of about ten years, but the low incomes experienced from ages 25 to 33 mean that there are no HECS repayments in those years. Accordingly, graduates with these earnings

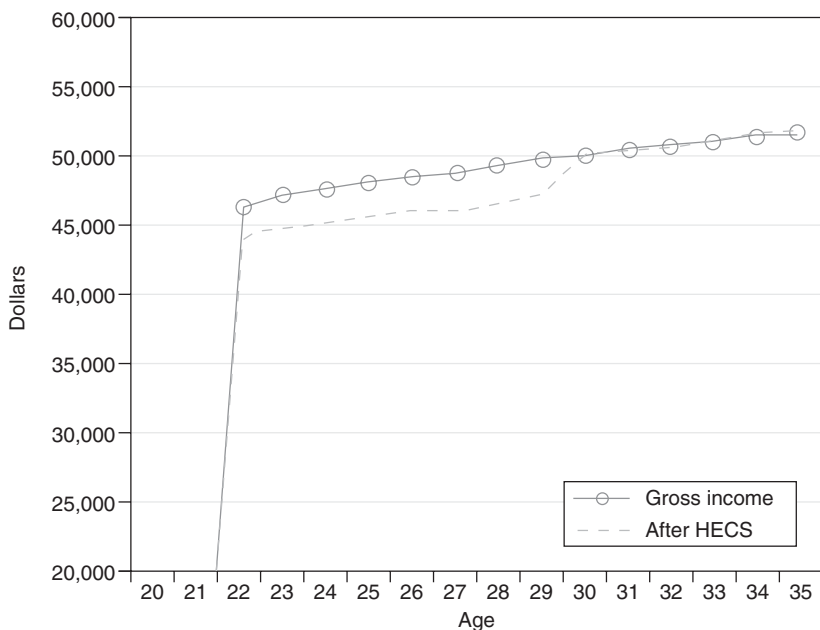


Figure 4.3 Earnings before and after HECS: females (\$A(2004)).

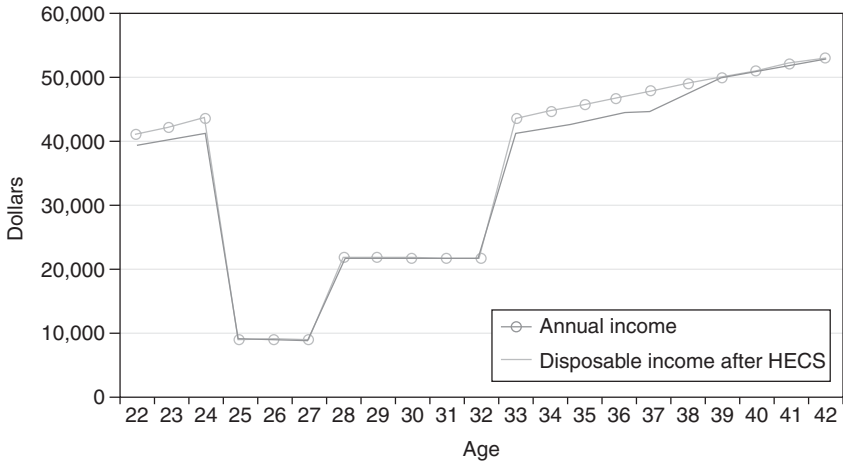


Figure 4.4 Earnings before and after HECS: graduate males experiencing unemployment and part-time work (\$A(2004)).

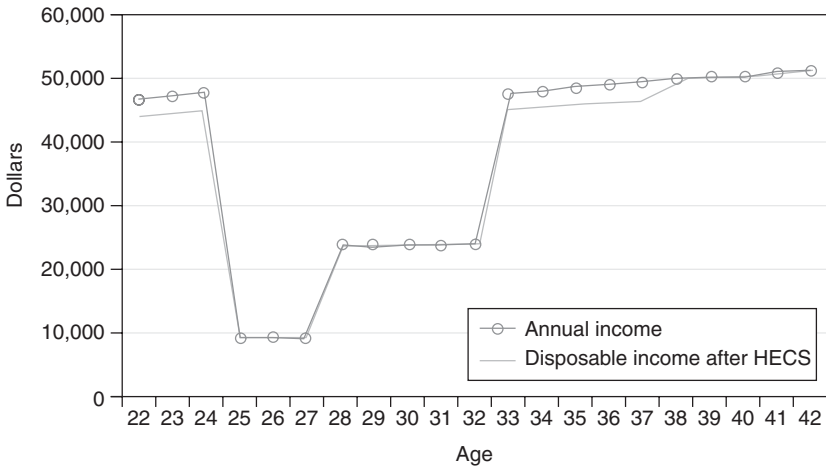


Figure 4.5 Earnings before and after HECS: graduate females experiencing unemployment and part-time work (\$A(2004)).

paths will take until around age 39 to repay in full. Given that there is a real rate of interest subsidy on HECS debts once they are incurred, this means that compared to lifetime full-time earners those with low incomes implicitly receive a subsidy, in these examples of about 25–40 per cent in total.

The data from Figures 4.4 and 4.5 show that graduates experiencing relatively low incomes from ages 25 to 31 will take much longer to repay

their HECS debts than those consistently working full-time. In the examples used, both male and female graduates will take until age 38 to repay. This is because there are no repayment obligations when their earnings are below the first income threshold of around \$A35,000 per year. The extended length of repayment necessarily means that the implicit subsidy from the lack of adjustment of the debt for the real rate of interest is higher for those with these hypothetical low incomes.

HECS and consumption smoothing

As stressed in Chapter 3, a major benefit of risk-sharing ICLs is that, compared to bank loans repaid according only to time, they result in consumption smoothing. This was illustrated with a simple example in that chapter, and what now follows indicates the consumption smoothing properties of the 2004/05 HECS repayment parameters. This is done with respect to those earning the salaries of full-time workers and with respect to hypothetical people experiencing the relatively low incomes assumed in the above exercises.

To correct for the interest rate differences in the alternatives, the nominal HECS debt level is reduced by 25 per cent to reflect the discount, this being done to make the HECS and loan scenarios equivalent in terms of the present value of the alternative debts. Thus it is assumed that students only need to borrow from banks enough to pay the charge up-front and receive the discount. Those paying HECS and electing to pay later thus incur the higher obligation, but unlike the bank debt the loan level is not adjusted over time by the real rate of interest. As with the exercises reported in Chapter 3, it is further assumed that students are not required to pay any part of the bank loan until they graduate at age 22.¹⁶ Figure 4.6 shows the absolute levels of annual payments of both bank and HECS debts of equivalent levels, for a four-year science degree.

The data from Figure 4.6 suggest that in absolute dollar terms the payment of bank loans and HECS per annum is roughly the same, for both men and women: just over \$A2,000 per year for ten years with the bank loan, and about \$A2,500 per year for HECS payments for eight to nine years.¹⁷

These annual repayments can be expressed as a proportion of earnings for male and female graduates expecting to earn the average salaries for full-time workers of their sex, and the data are shown in Figures 4.7 and 4.8.

The results are as expected. For both male and female graduates expecting to earn the average salaries of graduates of their sex, there is little difference between the borrowing regimes. With the bank loan, male and female graduates pay about 4–5 per cent of incomes per year for ten years, and for HECS the proportions are 4.5–6 per cent per year for eight to nine years.

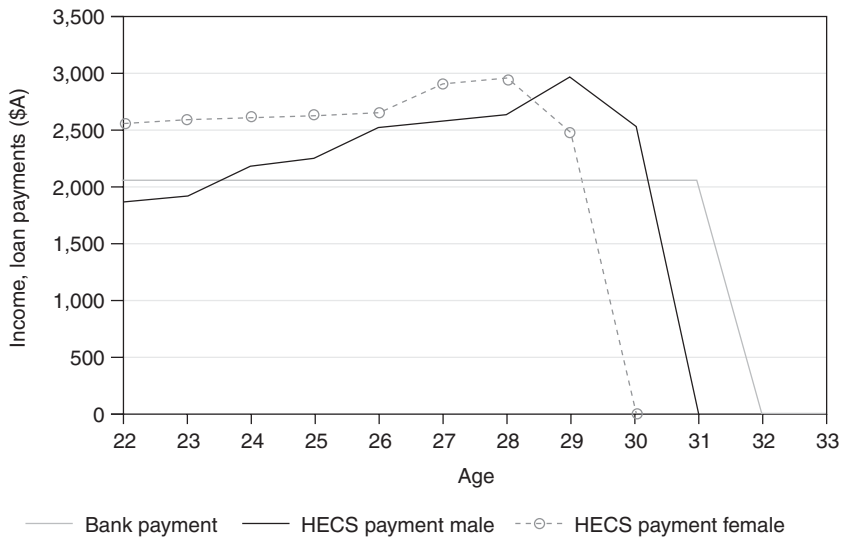


Figure 4.6 HECS payments and bank payments with full-time employment (\$).

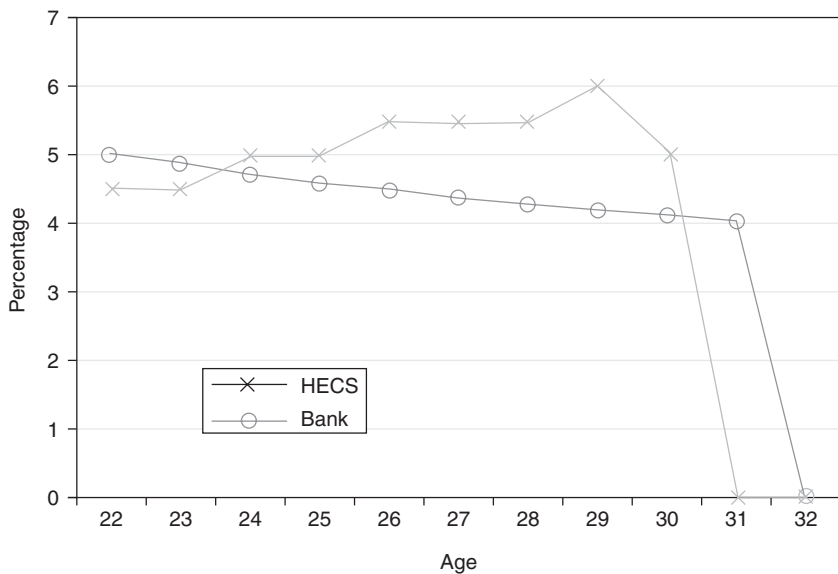


Figure 4.7 Debt repayments as a proportion of taxable income: full-time male graduate workers.

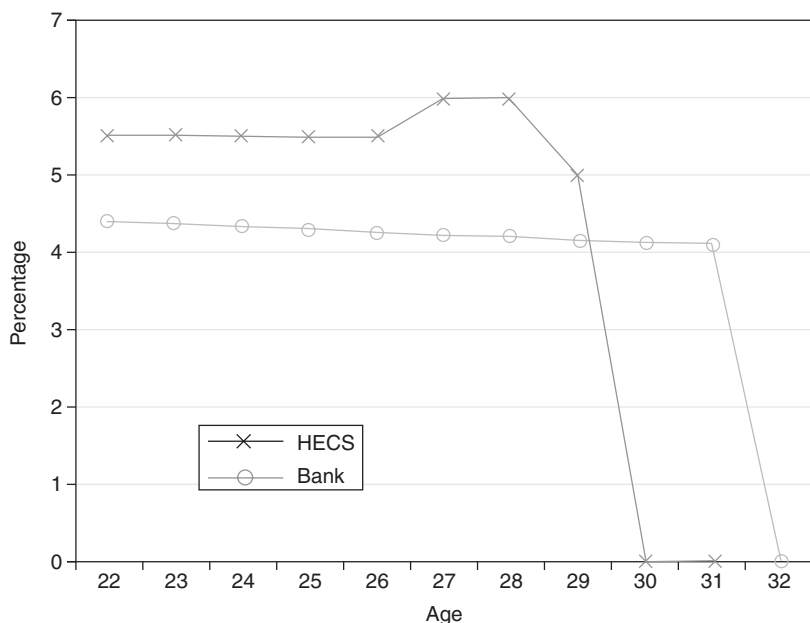


Figure 4.8 Debt repayments as a proportion of taxable income: full-time female graduate workers.

However, the real differences start to emerge when graduates do not experience typical full-time earnings. This can be illustrated with the use of the hypothetical scenarios described in Chapter 3 (shown in Figures 4.4 and 4.5) in which graduates are assumed to be unemployed from ages 25 to 28, working part-time (half time) from ages 29 to 32, and working full-time again after the age of 32. Figure 4.9 shows the absolute dollar annual loan repayments for males and females, under both the bank loan and HECS arrangements. The bank loan repayments are the same as they would be for full-time workers (since repayments are made independently of incomes), but the HECS payments for these low-income graduates are completely different.

For the periods of both unemployment and part-time work, the 2004/05 parameters result in zero HECS payment obligations, but payments of between \$A2,500 and \$A3,000 per year from age 33 to age 38 when incomes have risen to their full-time equivalents. Thus both male and female graduates experiencing low salaries from ages 25 to 31 pay considerably more for a bank loan in periods of low earnings than is the case for the repayment of the HECS debt. With the latter there are no repayments when incomes are low, this reflecting the critical benefit of an ICL. What this means in terms of proportions of taxable incomes is illustrated in Figures 4.10 and 4.11

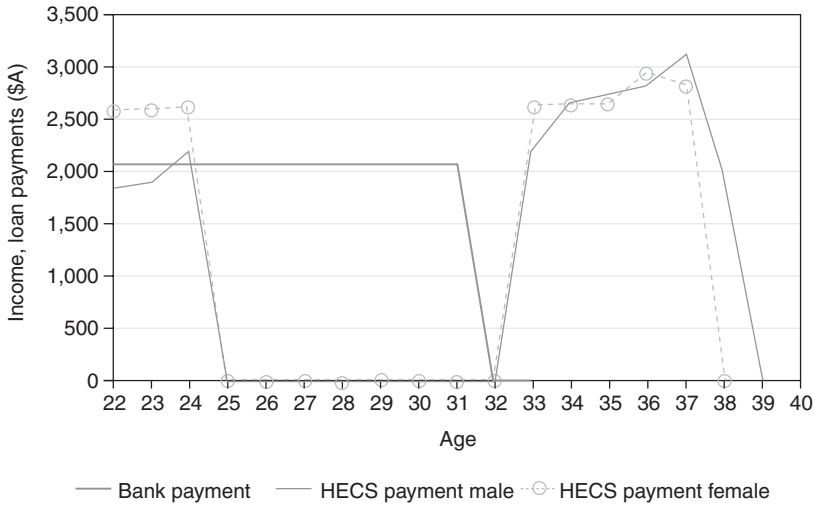


Figure 4.9 HECS payments and bank payments with unemployment and part-time work (\$A).

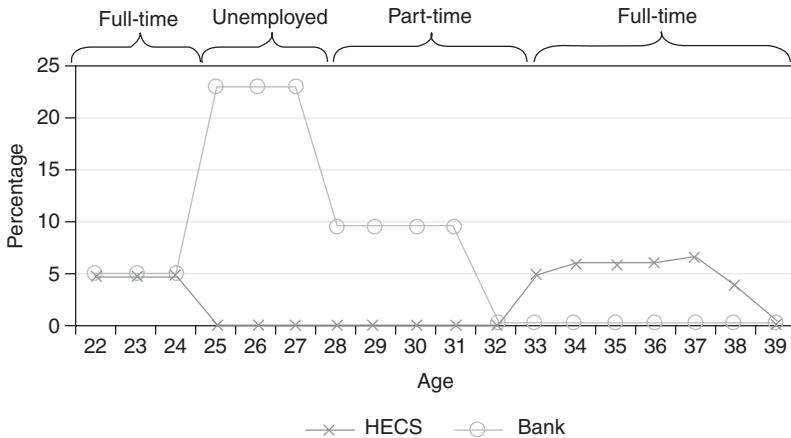


Figure 4.10 Debt repayments as a proportion of taxable income with unemployment and part-time work: graduate males.

As with the results of the exercises reported in Chapter 3, more real life data from the HECS modelling show that the disadvantage of the bank loan is apparent. Repayment obligations of the bank loan, as a proportion of income, fluctuate between 5 and nearly 25 per cent, but HECS repayments cannot exceed 6 per cent of taxable incomes at any stage.

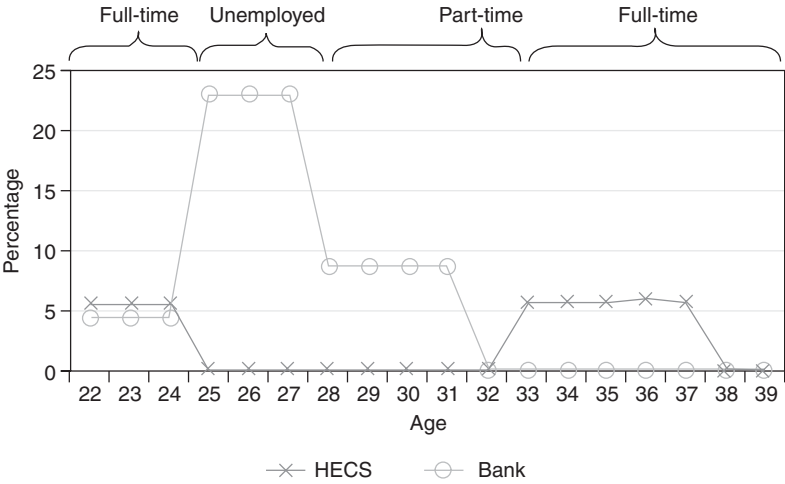


Figure 4.11 Debt repayments as a proportion of taxable income with unemployment and part-time work: graduate females.

The extreme situation is for the period in which the graduate is jobless and receiving only unemployment benefits. In those years the bank loan takes around 24 per cent of taxable income for both males and females. As well, when graduates are working half time the proportion of income going to repay the bank debt is still almost 10 per cent. In contrast, HECS payments are zero in the periods of low incomes, and cannot be more than 6 per cent even when graduate incomes recover. The consequence for HECS debtors, of course, is that while the bank loan is repaid fully in ten years (at age 31), graduates experiencing periods of low income take until age 38 to repay their HECS debts. The ongoing interest rate subsidies mean that in present value terms (as measured at the time of enrolment), HECS subsidises graduates with low incomes. Calculations of the present values of the alternative debt streams are presented in Table 4.3.

In summary, the exercises reveal that compared to the repayment of a bank loan, HECS delivers important potential consumption smoothing

Table 4.3 Present values of loan repayments (\$A)*

| | <i>HECS payments</i> | | <i>Bank payments</i> |
|--------------------------|----------------------|---------------|----------------------|
| | <i>Male</i> | <i>Female</i> | |
| Full employment | 16,677 | 17,299 | 15,956 |
| Unemployed and part-time | 13,061 | 13,974 | |

Notes

* Calculated at age 18, with a discount rate of 5 per cent per annum.

benefits. For situations in which former students experience very low incomes the repayment of normal loans results in very high proportions of incomes being obliged to pay debt, and thus being unavailable for consumption. HECS has no such implication, and this is a critical benefit of an ICL.

4.4 The impact of HECS on demand and access¹⁸

Introduction

There are several important issues in an assessment of the consequences of HECS for students. Among others they are: changes in enrolments of identifiable disadvantaged groups; the effects of HECS on the private benefits to higher education; changes in students' aggregate demand for higher education and, most critically for policy debate, the access of the poor to the university system as a result of the introduction of, and changes to, HECS.

Aggregate changes in enrolments of various disadvantaged groups

The Australian government department concerned with higher education policy, the Department of Education, Science and Training, has made available enrolment data for special groups, and these allow some insight into the possible effects of HECS for these groups. The data are not ideal since they begin in 1991, two years after the introduction of the scheme. They nevertheless are indicative of changes over time, covering the period from the infancy of HECS to its obvious entrenchment.

The absolute numbers and proportions of higher education enrolments are now shown for various groups in the years 1991 and 2003 in Figure 4.12. The first group is students from low socio-economic status (SES) backgrounds, defined as coming from geographic areas in the lowest quartile of the income distribution. In 1991 there were around 75,000 low SES enrolments, and these made up about 15 per cent of total higher education students. The absolute number grew to nearly 100,000 by 2003, with there being no change in the proportion. This last result, from disparate data sources, is reproduced in a myriad of different studies reported below.

The second group is students from a non-English speaking background, defined as those who live in households in which English is not the spoken language. It is apparent for members of this group that while total enrolments grew from 1991 to 2004, the change in the proportion from 4.1 to 3.5 per cent is minor.

Members of the third group, students from rural areas, are not necessarily disadvantaged in a conventional sense. But it is arguable that relocation costs and information problems are a special concern for rural

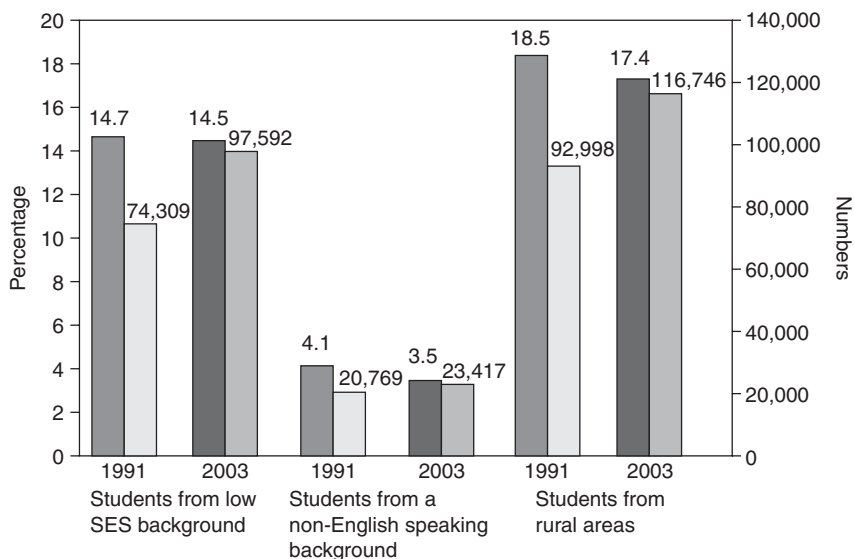


Figure 4.12 Enrolment numbers and proportions, various groups, 1991 and 2003 (source: Commonwealth Department of Education, Science and Training, Canberra, 2005).

prospective students in their decisions to enrol in higher education or not. As with members of the other two groups, aggregate enrolments increased considerably from 1991 to 2003, but there was no discernible change in the size of the group as a proportion of total enrolments.

Studies of aggregate demand for university places

Two approaches have been adopted to assess the impact of HECS on student demand. One has been to estimate its effect on the private returns to investment in higher education. The second has been to explore whether higher education participation changed after either the introduction of HECS or the 1996 variations to its operation.

Chapman and Ryan (2005) adopt the first approach. They analysed whether the introduction of student charges as a result of the introduction of HECS in 1989, and the major changes to the system in 1997, had significant impacts on the economic benefits to graduates from having a university education. The approach involves examination of private internal rates of return to higher education, a calculation requiring the construction of income profiles for hypothetical individuals, based on data from representative individuals.¹⁹

The internal rates of return estimates before and after the introduction of HECS, and following the 1996 changes, are shown in Table 4.4 (taken

Table 4.4 Internal rates of return to higher education for males and females: various HECS scenarios (%) (after tax)

| | <i>Men</i> | <i>Women</i> |
|----------------|------------|--------------|
| 1988 (No HECS) | 14.6 | 13.9 |
| 1989/90 | 14.1 | 13.8 |
| 1997/98 | 13.1 | 12.6 |

from Chapman and Ryan 2002). The method employed the 1997 Australian Bureau of Statistics Household and Income Distribution Survey of about 10,000 individuals, with cross-sectional information available by sex, age and educational qualifications.

There are several points of significance. First, before HECS (in 1988), private real rates of return to higher education for both men and women, of 14.6 and 13.9 per cent per annum respectively, were very high. Second, both the introduction of HECS, and the substantial changes in both the level of the HECS charge and the repayment rules introduced in 1997, were apparently associated with no major changes to internal rates of return. The broad conclusions from the Chapman and Ryan calculations are that Australian university graduates on average have done very well in the labour market, and HECS has had little impact on these private benefits.

Borland (2001) also estimated rates of return based on income profiles, but from a alternative Australian Bureau of Statistics data source. In Borland's results the difference in the returns for a representative male who repaid his post-1996 HECS medium course debt after entering the labour market, and for a no-HECS regime, was 1.5 percentage points. This is the same finding as that reported above between the pre-HECS 1988 rate of return and the post-1996 return.

If HECS has not affected the return on the investment in a substantial way, it would seem reasonable to expect little change in the aggregate demand for higher education. This is not as straightforward as it seems since the issue requires some background commentary on the different potential meanings of the notion of 'aggregate demand'.

An important point involves the distinction between applications and enrolments. That is, a senior high school student's interest in pursuing higher education begins with his/her making an application for a place. If a place is offered his/her next decision concerns whether or not to accept and to thus enrol. The distinction between applications and enrolments is not very interesting if there is an excess supply of places, but this has not been the case in Australia over the last several decades. Indeed, HECS was motivated in part by the perceived need to diminish the number of 'qualified' students unable to access higher education due to the shortage of places.

There have been several empirical exercises exploring the effects of HECS on applications. The first, from Andrews (1997), used a multiple regression approach attempting to explain changes in the ratio of applicants from Year 12 to the total number of Year 12 students. He included measures of youth job opportunities, and allowed the effects of the announcement, introduction and changes to HECS to be estimated separately. He found the introduction of HECS had arguably lowered applications from school leavers, but not mature-aged applicants. However, he estimated that the 1996 changes had no impact on applications from school leavers, but may have had a small negative impact on mature-aged applications.

More recent analysis of similar data in Aungles *et al.* (2002) used application numbers, rather than ratios, but found no effect on school leaver applications following the introduction of HECS. After 1996, however, there was a small yet significant decrease (of less than 10 per cent). The decrease in applications from mature-aged people after 1996 was somewhat higher.

Some uncertainty remains about these results, for the following reasons. The first is that the analysis did not have available many data points. Second, in all exercises of these types other factors are at work and their influence hasn't been taken into account. These could include the role of student income support, changes in the expected benefits of graduation, and/or the indirect influence of the expansion or otherwise of the number of places.²⁰

Even given the above issues, it seems reasonable to conclude from the available evidence that HECS has not reduced significantly the demand for university places among school leavers; if there has been a change the effect has been very small. The consequences may have been more substantial with respect to mature-aged applicants, for whom the returns to university study might be expected to be smaller in general (since they have less time to earn higher incomes before retirement). Further, mature-aged potential students are more likely to be earning over the income repayment threshold already, meaning that changes to HECS have a more immediate potential effect. Changes in mature-aged demand cannot be properly analysed without taking into account this effect.

HECS and access: evidence on enrolment influences from student surveys

Australian studies have used two approaches to assess the impact of HECS on enrolments (as opposed to applications) by low socio-economic status groups. The first has been to ask people about the factors that shape their decisions to participate in higher education. These studies have usually involved comparisons of individuals who were eligible to attend university, and either chose to attend or chose not to, and the role of

HECS in that decision-making process (Higher Education Council 1992; Robertson *et al.* 1990; and Ramsay *et al.* 1998).

Specifically, several of the surveys asked individuals who qualified but decided against enrolling to rank the factors important to this decision. As well, they were asked if various factors were 'important' or 'very important' to their non-enrolment, and were asked to provide information concerning their socio-economic status. The Robertson *et al.* (1990) study revealed the following.

- i The most important factors behind non-enrolment concerned access to income support, for example in responses suggesting a lack of parental support, or suggestions that the money available from the student grant scheme was insufficient to live on.
- ii Those not enrolling ranked HECS as the thirteenth most important factor in this decision, out of a total of 17 possible influences.
- iii HECS was considered to be an 'important' or 'very important' factor in the non-enrolment decision of 7 per cent of the sample only.
- iv There was no statistical relationship between measures of socio-economic status and the identification of HECS as an 'important' or 'very important' factor in the non-enrolment decision.

Overall, studies based on survey data suggest that HECS has not been a dominant factor influencing individual decision making, either in aggregate or for low socio-economic status. In a summary statement from one of the surveys a government report noted: 'It ... is likely that most qualified applicants from across all sub-populations in the study would not be significantly deterred by HECS' (NBEET 1990, p. xii).

Chapman and Ryan (2002) used the panel data from the Australian Council of Educational Research, which are explored further below. They examined intentions to go to university reported at around age 14 in three cohorts of young Australians who could have attended university in 1988, 1993 and 1999. They found that university enrolment intentions changed very little between the 1988 and 1999 cohorts for the lowest and highest wealth groups. These proportions even fell marginally in the 1993 cohort, who first reported them in 1989, which may represent some kind of initial HECS announcement or implementation effect.

The Chapman and Ryan analysis revealed that the growth in the number of those indicating they intended to go to university was substantial in the middle of the wealth distribution. In the 1999 cohort, the same individuals were asked in each year from 1995 to 1998 what they intended to do when they left school. This makes it possible to identify an 'announcement effect' on university study intentions from the 1997 changes to HECS. These changes were announced as part of the Australian Government 1996/97 Budget in August 1996, with the data on intentions being collected in December of that year.

Analysis of that time series of 'intentions' suggests that there was a pronounced 'announcement' effect in 1996 associated with the 1997 changes to HECS. This effect was evident for all wealth groups, though it was less strong for low-wealth groups than for those in the middle or top of the distribution. However, the announcement effect was temporary, with the proportion indicating they intended to go to university rebounding in the following year for all wealth groups. Overall, this survey material showed no discernible effect on underlying higher education intentions associated with the introduction of or changes to HECS.

HECS and access: multivariate analyses

The second and more important approach used to assess the impact of HECS on enrolments involves testing whether participation behaviour among low socio-economic status groups changed in a way that was different from other groups, after either the introduction of HECS or with respect to changes to the scheme introduced from 1997. Therefore, the focus of these studies is not on the relationship between socio-economic status and university participation at any point in time, but rather on whether the relationship changed.

One example is Andrews (1999b), who traced the share of low socio-economic status students among 17 to 24 year olds who commenced higher education from 1989 to 1998, including their share of disciplines included in the high cost Band 3 introduced in 1997. Individuals were assigned the socio-economic status score of the region where they or their family lived, based on the postcode of their home address.²¹ Individuals from low socio-economic status backgrounds were defined as those whose home postal address was in the lowest quartile of the population, as determined by the value of the relevant socio-economic status index. Andrews found that neither the introduction of higher and differential HECS nor the lowering of the income repayment threshold after 1997 affected the share of low socio-economic status individuals among total higher education students.²²

Aungles *et al.* (2002) also used the local area socio-economic averages concerning education and occupation like Andrews (1999b) to explore the possibility of there being an effect on commencements of the relatively disadvantaged from the 1996 HECS changes. In general, they found that the share of university commencements of students from low socio-economic backgrounds did not change after the 1996 changes. However, there was an effect of differential HECS on subject choice, with a decrease in enrolments of low socio-economic status males in courses in which the HECS charge increased most. The actual numbers involved were very small (less than 200 individuals) and these individuals were not discouraged from attending university *per se*, they simply changed their course choice. Chapman and Ryan (2002) report a similar effect in direction

terms for this group using the direct measure of family wealth, but it was not found to be statistically significant.

A major uncertainty about the analysis of Andrews (1999b) and Aungles *et al.* (2002) relates to the attribution to individuals of the average socio-economic status level of the postcode of their home address as their own socio-economic status background. Western *et al.* (1998) present results based on a survey of 3,000 university students in Queensland that suggest such an approach is not reliable. They found that the correlations between individually based socio-economic status measures and the same postcode based index used by Andrews were quite low.²³ This might be consistent with there being a role for geographic area, and constitutes support for the Edwards *et al.* (2005) hypothesis that those living in 'have-not' areas perform relatively poorly.

The main implication of the Western *et al.* (1998) results is that it would generally be better to attempt to assess the impact of the introduction of HECS on the social composition of the university student body by using individually based measures of socio-economic status.²⁴ Other studies have utilised individually based socio-economic status measures in analysis of Australian higher education participation. Long *et al.* (1999) and Marks *et al.* (2000) used four and five panels of longitudinal data respectively to identify how education participation changed in Australia over the 1980s to the late 1990s.²⁵ Long *et al.* used parental education and occupation to identify differences in education participation by socio-economic status, as well as an indirect wealth index constructed from responses by individuals to questions about the presence of material possessions in their houses.²⁶

Long *et al.* (1999) analysed participation in higher education by age 19, for two reasons. The first is that in Australia many school leavers defer university entrance for a year. The second is that their data are drawn from cohorts of individuals of the same age. Since the structure of schooling varies across Australian states, many individuals would not have had the opportunity to attend university until the year they were aged 19 in the data used. Long *et al.* analysed data for individuals aged 19 in 1980, 1984, 1989 and 1994, interpreting loosely their third and fourth cohorts as pre- and post-HECS introduction cohorts.

Long *et al.* found that wealth has a strong positive effect on higher education participation. In addition, they found that differences between socio-economic status groups widened somewhat in the last cohort compared to the third cohort. However, they acknowledged that such a trend was evident in the earlier cohorts, so that it may not have been a specific HECS-related effect.

Chapman (1997a) analysed university participation among 18 year olds in the last two cohorts analysed by Long *et al.* (1999) and concluded that the introduction of HECS had not affected university participation by students from disadvantaged backgrounds. Chapman's approach had the advantage of measuring university participation in 1988 for the third

cohort, prior to the introduction of HECS. However, not everyone aged 18 in these data had completed school when surveyed in the relevant years, so the estimates understated university participation among young Australians.

The measure of participation used by Marks *et al.* (2000) for the additional cohort they analysed differed from that used for the earlier cohorts by Long *et al.* (1999). It was the proportion of individuals in higher education in 1999 that had been in the Year 9 in 1995. The wealth measure used by Marks *et al.* (2000) for the last panel also differed from the earlier ones.²⁷ This research confirmed the positive impact of wealth on higher education participation. However, in general, their results suggested that socio-economic status was less important in determining higher education participation in the 1999 data than had been the case in the earlier panels.

Both Long *et al.* (1999) and Marks *et al.* (2000) analysed university participation among those from non-English speaking backgrounds. Students whose fathers were born in primarily non-English speaking countries had higher university participation rates than those whose fathers were born in either Australia or in other English speaking countries. If anything, the simple differences in participation were greater in 1999 than they had been in earlier cohorts with the differences being significant after controlling for other factors, such as father's occupation and educational backgrounds. Marks *et al.* (2000) conclude that the regression-based estimated positive differentials by non-English speaking background had been relatively constant from the mid-1980s to 1999.

Marks and McMillan (2003) analysed university participation within ranges of the entrance scores used by universities to select students for undergraduate courses in 1999. They found that within these entrance score ranges, individuals whose parental occupational backgrounds are 'blue' collar are as likely to participate in university as those whose parental occupational backgrounds was professional. They concluded that since occupational origins have little influence on university participation once entrance scores are taken into account, HECS has not deterred students from less privileged backgrounds from attending university.

Chapman and Ryan (2002) analysed the access effects of HECS using three of the longitudinal panels of data used in the Long *et al.* (1999) and Marks *et al.* (2000) studies. They used a consistent definition of university participation across these three cohorts, analysing the participation in higher education of 18 year olds in the first year they could potentially attend university. They posed the question, 'what was the level of university participation with respect to family wealth of 18 year olds?', (i) before the introduction of HECS (as measured in 1988), (ii) sometime after this (as measured in 1993) and (iii) after the marked changes to the scheme in 1997 (as measured in 1999).

For each year Chapman and Ryan considered only 18 year olds, with these groups being classified into three wealth categories: those from the

bottom quartile, those from the top quartile and those from the middle two quartiles. These classifications allowed measurement of the proportion of young people enrolled in higher education from different wealth backgrounds. Figure 4.13 shows the broad results.

The data in Figure 4.13 should be interpreted as follows. For each of the years 1988, 1993 and 1999 the bars show the proportion of those aged 18 or 19 who were enrolled in higher education categorised by wealth. There are three significant results.

First, before the introduction of HECS, there was a clear relationship between enrolment in higher education and measures of family wealth. Specifically, the proportions enrolled from the lowest, middle and highest groups were respectively around 19, 24 and 36 per cent.

Second, the data show that higher education participation rates did not fall for students from any family wealth group after the introduction of HECS. Even so, the increase in the proportion of young people attending university was clearly larger for those from the middle and highest wealth groups.

Third, the large changes to HECS introduced in 1997 had no adverse effects on participation for members of any wealth group, indeed, there were large higher education participation increases for those from all family wealth backgrounds.

Chapman and Ryan (2005) report parametric tests of these relationships, for both sexes, in which they allow non-linear effects of policy changes over time. As well, they were able to explore the effects of policy announcements on high school students' intentions to enrol. They

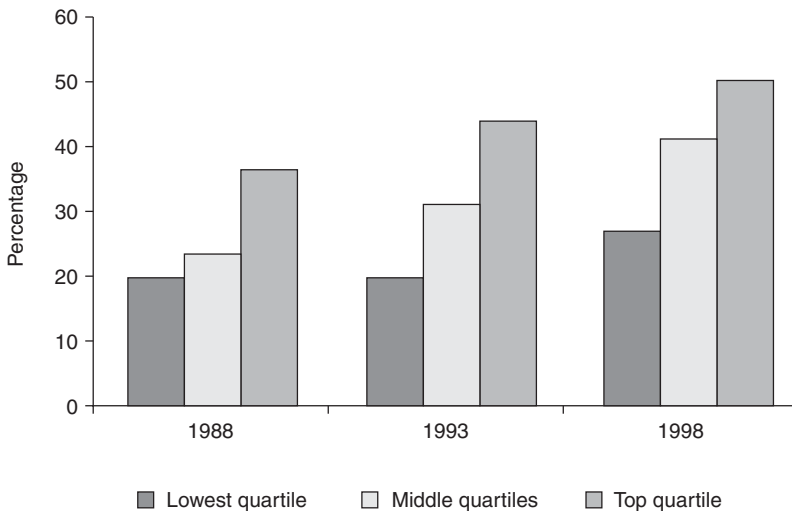


Figure 4.13 Proportion of 18/19 year olds undertaking a degree by family wealth: persons (source: Chapman and Ryan (2002)).

conclude that the introduction of HECS did not affect the access of the disadvantaged, in terms of enrolments. They also found that the socio-economic composition of the higher education student body changed somewhat between 1988 and 1993 in Australia, but that the main change was the relative increase in participation by individuals in the middle of the wealth distribution.

In the period after significant modifications to HECS there were no differences between the proportionate increases in the participation of all socio-economic groups. Further, while there was an across-the-board decrease in the intentions of secondary students concerning university participation in 1996 after the announcement of the changes, in the next year for all socio-economic groups enrolment intentions rebounded to their previous level. Finally, for a particular group, those who had not intended to participate in university, no differences associated with socio-economic background were found in the proportion that eventually did participate.

More generally, this research concludes that changes in overall university participation appeared to reflect different behaviour between the sexes rather than across socio-economic groups, with the exception that growth was relatively high among the middle of the wealth distribution.

Hume (2004) also explored the issue of socio-economic mix changes after the introduction of the radical changes introduced to the system in 1997. Hume used different data sets – the Longitudinal Survey of Australian Youth in 1995, and the Australian Youth Survey in 1998 – to determine if there were changes in the socio-economic mix of (different) students with respect to enrolments in particular types of courses.²⁸ The important point is that the charges had increased markedly in 1997, so this ‘natural experiment’ allowed innovative and indirect tests of the extent to which the changes affected enrolment behaviours. Hume concluded that there were no discernible differences in enrolment patterns between the two survey dates. The result is consistent with all other research on enrolment patterns and the role of HECS.

The Long *et al.* (1999), Marks *et al.* (2000) and Chapman and Ryan (2002) analyses all capture the change in relative higher education participation between males and females in Australia since the 1980s. Where males once had higher participation rates, these are now lower than female higher education participation rates. The faster growth of females does not seem to reflect specific developments within the higher education sector that favoured female participation, such as the transfer of nursing and teacher training to the sector. Females increased their share of commencing students in every major field of study in Australian universities between 1988 and 1999.²⁹

HECS and access: conclusions and a caveat or two

The conclusions from the Australian research with respect to the socio-economic mix and access consequences of the risk-sharing ICLs introduced in 1989 are as follows.

- i The relatively disadvantaged in Australia were less likely to attend university even when there were no student fees. This provides further support for the view that a no-charge public university system (that is, financed by all taxpayers) is regressive.
- ii The introduction of HECS was associated with aggregate increases in higher education participation, but this is the result of additional places being provided by the government.
- iii HECS did not result in decreases in the participation of prospective students from relatively poor families, although the absolute increases were higher for relatively advantaged students.
- iv There was a small decrease in the aggregate number of applications after the 1997 changes, but no apparent decreases in commencements of members of low socio-economic groups, except perhaps with respect to a small number of males for courses with the highest charges (although see (vi) below).
- v The significant changes to HECS introduced in 1997 were associated generally with increased enrolments of individuals irrespective of their family wealth.
- vi In one piece of research there was a small decrease in enrolments of the most expensive courses of relatively poor males after the significant charge increases introduced in 1997, although in two other papers no effect was found for any groups.

These conclusions raise some important points for discussion. First, with respect to the effects of the scheme on participation, 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 (2006). 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.

Second, the apparent finding that neither the introduction of, nor changes to, HECS had any apparent effects on the access to the system by

poorer students should not be interpreted to mean that risk-sharing ICL 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 Teixeira *et al.* (2006) 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 have affected significantly the proportion of enrolments of students from different family wealth backgrounds in many different countries.

The above important finding rings true more generally: with respect to the marked changes in the nature of government support in Canada (Finnie and Usher 2006); even with significant enrolment expansions in Norway (Aamodt 2006); following marked long-run changes in tuition levels in the Netherlands (Vossesteyn and de Jong 2006); and with both large higher education growth and increased cost-sharing in Portugal (Teixeira *et al.* 2006). It follows that 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.

4.5 HECS financial and administrative data: revenue, running costs, estimates of unrecoverable debt and tax compliance issues

Revenue

The discussion following relates to the stream of revenue received by the government from HECS. As noted above, students have the choice of paying their HECS charges upon enrolment, or through the tax system. Figure 4.14 shows the revenue received by the government from 1989 to 1999, and projections of payments to 2005.

Up-front ('voluntary') payments and repayments through the tax system ('compulsory') are shown separately in the figure. It is of interest that even in the first year of HECS around \$A100 million was raised from up-front payments encouraged by the (then) 15 per cent discount. The policy implications of this are significant, since it shows that the introduction of an ICL can provide substantial revenue to governments quite quickly.

Not surprisingly, repayments through the tax system were modest in the early years of the operation of HECS. This is because very few graduates earned incomes high enough to require repayment. However, income contingent repayments increased substantially as more graduate debt became eligible for repayment, thresholds were lowered and a higher proportion and number of graduates had higher repayment rates.

Taken together, up-front fee and income contingent repayments through the tax system now represent a very significant and growing pro-

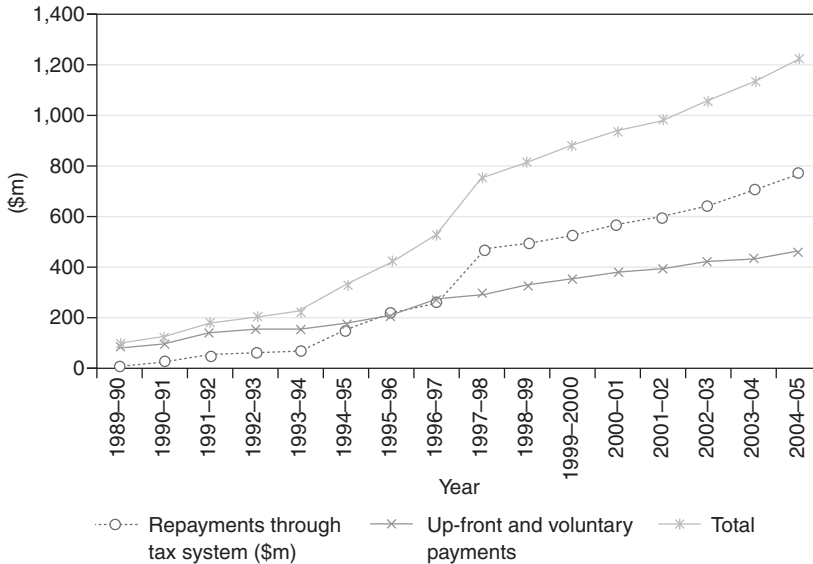


Figure 4.14 Actual and projected HECS revenue: 1989–2005 (\$A) (source: Commonwealth Department of Education, Science and Technology (2004), *Higher Education Report for the 2004 to 2006 Triennium*, Canberra, Australia).

Note

The figure for 1994/95 is approximate, and the figures for 2002/05 are estimates.

portion of the cost of higher education in Australia. In 2001 students provided over \$A900 million, which is around 20 per cent of the total recurrent costs. In 2005 it is projected that this figure will be \$A1.2 billion per annum, or 25 per cent of annual recurrent higher education costs.

Administration costs

There are two aspects of the costs associated with collection: resources used by the tax office, and resources used by the higher education institutions. With respect to the first, the collection of the debt is apparently quite efficient in administrative terms, with the 2003/04 Commonwealth Budget papers suggesting that in that financial year the HECS collection cost was \$A24.952 million, or about 2 per cent of annual receipts.

With respect to the costs for HECS for the universities no data are easily available. However, estimates from the Australian National University suggest that for this institution the annual costs associated with the recording of HECS debt and liaison with the Australian Tax Office are around \$A500,000. This might imply that for the university

system as a whole the higher educational institutional costs are about \$A19 million per year.³⁰ This, combined with the collection costs, suggests that the total administration of the system costs around \$A60 million per annum, or about 5 per cent of annual HECS revenue.

These cost figures are not particularly meaningful unless they are compared with an alternative. That is, if HECS didn't exist there would be another charging mechanism (or a totally taxpayer funded arrangement). If this entailed bank loans and a government guarantee of payment in the event of student default, there would obviously also be costs involved.

Unpaid and doubtful debt

At present, each year new HECS debt is registered of around \$A2 billion. This adds to the accumulated stock of debt, which needs to be adjusted for repayments. Figure 4.15 shows the paths of both annual new debt and the accumulated stock of debt. The latter figure is of the order of \$A12 billion.

However, not all of this debt will be paid eventually. After all, HECS payments are income contingent, so the small number of former students who do not earn incomes over the threshold in their lifetimes will repay none of the debt. This could be the result of low personal incomes associated with non-participation or non-graduation. Or it could be due to

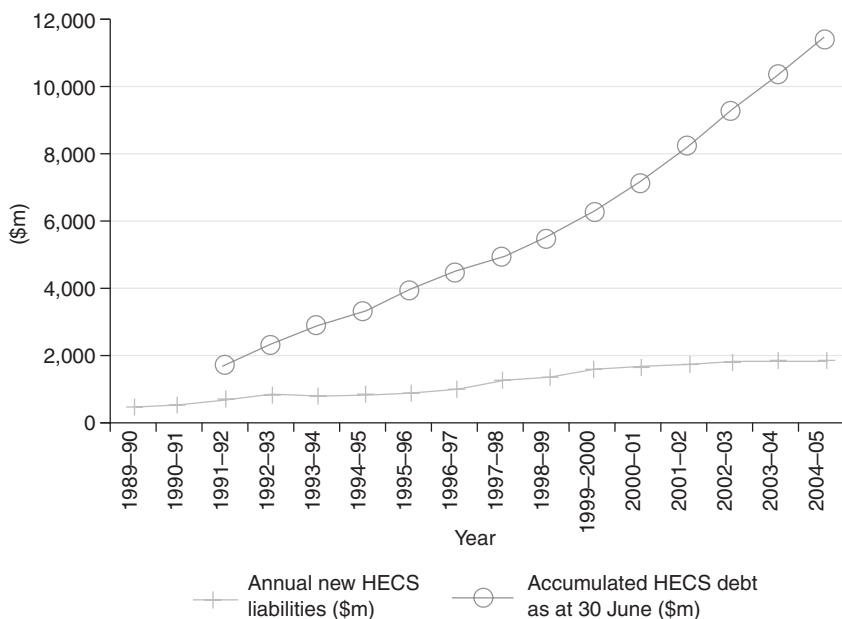


Figure 4.15 Students' annual new HECS liabilities and accumulated HECS debt (\$A) (source: Department of Education, Science and Training (2003)).

emigration or death (since remaining HECS debts are not taken out of estates).

Harding (1995) used micro-simulation methods to estimate the extent of non-repayment of HECS for both males and females in the early 1990s. She found that around 15 per cent of men would not repay their debts in full, and about half of those who do not repay still provide about half of their debt. About 25 per cent of women would not repay their debt in full, and about half of these would pay back about half of their debt. Roughly, about 15 per cent in total would not be repaid. These estimates are likely to be a bit on the high side for current HECS, because the first income threshold was relatively high in the early 1990s.

The Australian government regularly estimates the extent of what is known as 'doubtful debt', the extent of HECS which is not expected to be recovered. The data are consistently around 15 per cent of liabilities incurred. This is the same figure reported by Harding (1995).

HECS and tax compliance

In a series of papers (Ahmed and Braithwaite 2004; Ahmed and Braithwaite 2005; and Braithwaite and Ahmed 2005) Ahmed and Braithwaite report analysis of the relationship between having an HECS debt and the likelihood of individuals engaging in tax evasion. Further, they explore the links between the probability of tax evasion and the evaluation by graduates of the quality of their university education.

The theme of the Ahmed and Braithwaite analysis is that individuals who believe HECS to be 'unfair' will themselves be prone to engage in similarly unfair behaviour, directed at the tax office. They find statistically significant support for their hypotheses, and report that those with a HECS debt were 15 per cent more likely to be involved in tax evasion.

There are uncertainties with respect to the meaning and significance for policy of the above findings. One relates to the poor response rate to the survey – 447 out of a total of 1,500 – of around 30 per cent. Related to this is the likelihood of self-selection of respondents, although this could go either way: compliant individuals (non-evaders?) might be more likely to respond, but it could also be the case that those annoyed with the HECS system (and more prone to evade taxes) are also those more likely to want to register this displeasure.

While there seems to be a statistically significant relationship between having a HECS debt and tax evasion behaviour, private communication between the author and Eliza Ahmed revealed the size of the relationship to be quite small. Specifically, while non-HECS debtors had a 20 per cent probability of being a tax evader, the probability for those with an HECS debt was only about 23 per cent.

Second, uncertainty concerns the meaning of the reported 15 per cent higher probability of evasion for those with a HECS debt. None of the

three papers report the tax evasion probability for the sample as a whole, meaning that the 15 per cent difference could be small (for example, 23 compared to 20 per cent) or arguably larger (for example, 92 compared to 80 per cent). Further information is being sought from the authors at the time of writing.

Finally, if there is a relationship between believing HECS to be unfair and thus engaging in tax evasion, such effects would be more likely to be revealed for the year of the Ahmed and Braithwaite survey of graduates, in 2000. This is because in the period 1997–2004 the first income threshold of repayment was considerably lower than it was in 1989–96, or from 2005 onwards. It would be easy to believe that many graduates considered the low 1997–2004 threshold to be unreasonable, and some in the survey could have been reacting to this aspect of the scheme at that time rather than to ICL arrangements as such. Indeed two respondents are reported in Ahmed and Braithwaite (2004) complaining about repayment difficulties, one referring precisely to the low first income threshold of repayment.

4.6 The politics of HECS³¹

The broad political environment

The Australian higher education system in the late 1980s was one in which there was no student tuition charge – that is, universities were funded almost entirely by taxpayers. It is of interest that this has also been the situation for two other countries which have introduced ICLs run through national tax systems (New Zealand and the UK). In the Australian context there were serious forces at work for change.

First, during the 1980s there was a significant increase in the proportion of pupils completing the final year of high school, but there was no commensurate expansion in higher education places. This resulted in the political problem of large and growing queues of qualified prospective students. The government clearly needed to do something about this.

Second, while this problem could have been solved with increased Budget outlays, the Labor Government was not prepared to spend the additional taxpayer resources necessary to finance extra university places (see Chapman 1997a). Similarly, this has been the case with many OECD countries since the 1980s.

Finally, and perhaps most importantly, two Cabinet ministers, John Dawkins and Peter Walsh, were strongly in favour of student fees on grounds of income redistribution. Their view, supported clearly by the evidence,³² was that a higher education system which did not charge students was regressive: universities were paid for by all taxpayers and students both came from relatively privileged backgrounds, and as graduates they received high personal economic benefits on average. It is important

to record that Peter Walsh and John Dawkins were then respectively in charge of the critical Ministries of Finance and Higher Education.

These forces set the scene for the introduction of student charges in Australia. A committee was set up to investigate how this might best be done, and HECS was recommended. However, there were several problems.

One of the most important practical issues with the suggestion of an income contingent charging system using the income tax mechanism was that such a policy had not then been made operational anywhere in the world. As might be expected this led to strong resistance from the bureaucratic institution charged with its administration, the Australian Tax Office (ATO). The ATO's initial response is now recorded.

The bureaucratic context

One of the jobs the author of this book had at the time of the planned introduction of HECS was to discuss the matter with Australian tax officials. Perhaps the most useful way to record this experience is to quote the story of what happened through the author's eyes, as recorded in Edwards *et al.* (2001).

Somebody had to deal with the Australian Tax Office about implementation issues and I was the bunny. I can't remember if I was asked, or if I volunteered – probably the latter given at the time my naivety and lack of understanding of how difficult this would turn out to be. I was met by two moderately senior and very well attired officials (in the conservative Treasury mode of dark suits and starched white shirts), with deceptively friendly smiles, offering cups of instant coffee and a (small) range of (mediocre) biscuits.

I argued that a charge for higher education was justified. I explained the merits of collecting such a charge depending on graduates' future incomes, and pushed that for these things to happen the ATO was the natural (the only) collection institution available. The ATO, I think I said, had the unique advantages of knowing what graduates' incomes were and being able to easily make the relevant deductions from salaries. I probably said something like, 'This is a great opportunity for path-breaking policy reform'.

At the end of my short presentation I can remember thinking there would be no doubt they would be keen to be involved in the development of the policy. I did what most of us frequently do: I projected that they would agree to what I thought was the obvious (ie, what I wanted). However, it soon became clear that this was not going to be the case.

The more senior of the two (I could tell, because his seat was higher) said: 'The Tax Office collects taxes, not debts. This is a basic principle.' Their raising the issue of 'principle' seemed to be the end of

the conversation, because a ‘principle’ – by definition – is something that can never be compromised. I left the ATO disheartened, with my confused tail between my legs. But I knew I had to come back, maybe many times.

Preparing for the next meeting I decided to ignore the difficult issue of what a principle actually means, and instead planned on asking them to outline the practical implementation issues. At this second meeting they came up with many problems, such as: ‘People avoid taxes. What does this scheme do about that?’; or ‘People die. How can we collect their debt if this happens? We don’t have death duties in this country’.

I hadn’t thought much about these issues at the time. At the meeting I was not able to respond convincingly, and felt even more disheartened and frustrated.

It occurred to me one focused night after this that the whole thing was a bit mad. The critical point was to address the practical issues and I decided to concentrate on this at the third meeting. In this discussion I suggested that none of the practical difficulties raised by the ATO were obviously important. They probably knew I was right and, as a consequence, reverted back to the principle: ‘The Tax Office does not collect debt’. Then a critical thing happened.

In a coffee break from the discussion (‘battle’ is probably the right word), the senior man asked me, by way of friendly conversation, who was on the Wran Committee recommending HECS. I said, Bob Gregory (who they seemed to approve of), Mike Gallagher (no opinion was expressed), and Meredith Edwards (a high ranking public servant). The mention of the last changed everything.

The senior officials’ demeanour changed radically, and much to the negative, at the mention of Meredith’s name. He turned to his offsider and said, ‘We’re stuffed’. They seemed then to wave a white flag.

Later I came to appreciate why Meredith Edwards being on the Wran Committee was critical to the ATO’s assent. It was because, unknown to me, Meredith Edwards had been fundamentally involved the previous year in the institution of the non-custodial parenting support scheme, in which child support obligations are deducted from a person’s wages, through the tax office. The ATO was already involved in doing things that were not just about taxes, and could be described as ‘debt collection’. In other words, the ‘principle’ of the ATO not being a debt collector had already been significantly compromised well before I turned up arguing for HECS.

Essentially this was the end of my involvement with the ATO with respect to HECS. ATO officials came to the Wran Committee for discussion about arrangements, but there was not strong opposition. The administrative issue was resolved.

Some time later I had to confront the ATO with a policy develop-

ment similar to HECS. In 1992 a report of mine recommended that the Government introduce a variant of a student (income support) loans scheme. This also required the ATO to collect debt. This time when I went to the ATO to discuss this proposal the reaction stung me: 'Not a problem' one of the same officials said and I nearly fell off the chair. He then said: 'Do you have a HECS pen?' He then offered me an ATO biro-type implement which had written on it: 'HECS – the ATO Working for You'. He was clearly pleased that there was such a thing. He followed up this with: 'Have you seen our HECS video?' And he went on to say proudly that this was shown in most Australian high schools to Year 12 students so they knew what would happen to them with respect to university charges and how they could be paid. This was followed with some HECS balloons and a HECS board game. I left the ATO in a daze, struggling to hold my video, pens, balloons and board game.

On reflection it was not hard to understand why the ATO was now embracing HECS. A government department might be right to resist new administrative arrangements, particularly if it is obvious that they will involve greater staff input and implementation risks, as HECS did. If a public servant's role is partly about avoiding screw-ups it makes sense not to get involved too unquestioningly in untried schemes, and this they certainly weren't.

Policy promotion for rhetorical purposes

In all political processes a message has to be sold, and in general the simpler the better. There were several rhetorical themes that contributed significantly to the successful acceptance of HECS. It is important to be reminded that HECS was suggested in an environment in which there were no charges imposed on university students.

This meant that even if an income contingent charging system is the most equitable way to go, there would still be an increased impost on students. This necessarily implied that there would be protests and unrest from the group affected. There were three important political themes that helped to minimise student opposition to HECS.

The first involved selling a basic equity message. This was that a no charge system is essentially regressive, because it must mean that average taxpayers are contributing to a scheme providing large private benefits to those who benefit from the subsidy. Moreover, it was clear that not only do graduates do very well in the labour market, it is also obviously the case that university students, on average, come from relatively advantaged backgrounds. The (arguably derogative, but statistically accurate) term used by Ministers Dawkins and Walsh in the selling of HECS was that not having a charge was 'middle class welfare', i.e. a regressive use of government expenditure.

The second political tool employed at the time related to a design aspect of the proposed scheme. This was that the first income threshold of the HECS charge was set at the average earnings of all Australians working in the paid labour market. The import of this was that it neutralised opposition to the scheme on the basis of it being unfair, since no graduate had to repay any of the debt unless they were receiving at least as much income as the average taxpayers supporting most of their education.³³

Third, when the scheme was proposed, a trust fund was established. This fund was to receive all HECS revenue and the funds were to be used only for higher education purposes. In reality such a fund is not particularly meaningful given that HECS revenues in any given year would never exceed government expenditure on universities. Even so, at the time it probably served the political purpose of implying that HECS was principally a benefit for higher education.

4.7 Summary

There are significant findings from this detailed investigation of the effects of ICLs in the only country in which such a scheme has been closely examined with respect to a range of economic and social outcomes, Australia. They are as follows.

- i HECS has had little apparent effect on the private average returns to higher education, and neither does there seem to have been any aggregate decreases in student demand, at least as measured by enrolments. As well, applications for university places have been robust and apparently insensitive to the introduction of, and changes to, HECS.
- ii It appears that from a range of different approaches there have apparently been no consequences for the accessibility to higher education for students from relatively disadvantaged backgrounds. Broadly speaking, the socio-economic make-up of the higher education student body was about the same in the late 1990s and early 2000s as it was before HECS was introduced.³⁴ This may not, of course, be the consequence of the income contingent repayment characteristic of the system, since it might have happened also with other financing approaches.
- iii Higher education enrolments in Australia have increased considerably, by around 70 per cent, since the introduction of HECS. This has happened for two reasons: there were no obvious overall deterrent effects for students from the new system and, in response to the expectation of high future revenue, governments – particularly in the late 1980s and early 1990s – substantially increased higher education expenditure leading to large increases in the number of places for students.

- iv The charge has delivered considerable revenue, of the order of \$A10 billion (2004) over the 15 years since its introduction. It is projected that the system will provide around \$A1.2 billion (2001) per year in 2005, which will be about 25 per cent or more of annual recurrent costs.
- v HECS seems to be inexpensive in administrative terms. That is, while over \$A1 billion (2004) is currently collected per annum, it apparently costs less than 5 per cent of this to administer the collection. This is because the collections are fairly straightforward given the mechanisms of the Australian Taxation Office – a point emphasised in ensuing discussion of other countries' administrative arrangements.
- vi There is evidence that HECS may have been associated with lower tax compliance than would otherwise seem to be the case. The size of the relationship seems to be quite small however, and there are reasons to believe they accompanied the (now reversed) low first income threshold repayment of the 1997–2004 period.

Overall, the outcome of HECS have illustrated that risk-sharing ICLs can be designed to achieve the basic objectives of higher education financing policy. Of course, it is critical that the institutional and administrative arrangements are such as to allow such schemes to be implemented, but in many countries this will not be the case, a critical point stressed in Chapter 5.

Notes

- 1 The first part of the discussion closely follows aspects of both Chapman (2001) and Chapman and Ryan (2002).
- 2 It is clear from Beer and Chapman (2004) that student contributions as a proportion of overall revenue will continue to rise beyond 2005.
- 3 For example, New Zealand, the UK, Chile and Thailand (from 2006). See Chapter 5.
- 4 See Chapman (1997a) for a discussion of this and other objectives of the policy change.
- 5 See Wran Committee Report (1988).
- 6 See Chapman (1997a).
- 7 See National Institute for Labour Studies (1988).
- 8 Wran Committee Report (1988).
- 9 For analysis of the background to HECS, see Edwards *et al.* (2001).
- 10 Income contingent loan schemes for higher education are now in place in New Zealand, the US, South Africa and Chile, and will be introduced in the UK and Thailand in 2006. ICLs have been recommended by the World Bank for Ethiopia, Rwanda and Malaysia. See Chapter 5.
- 11 For further analysis of the background to the policy, see Chapman (1997a).
- 12 For analysis of the effects of these changes, see Chapman and Salvage (1997).
- 13 For critical commentary on these changes, see Chapman (1997b).
- 14 For analysis of PELS see Chapman and Salvage (2001).
- 15 In July 2005 the New Zealand Government announced plans to reduce the rate of interest on the debt to zero.

- 16 This assumption means that the comparisons between the bank and HECS debts are overly generous to the bank loan, since loans of this type would usually require repayments to begin straight away (that is, in this case, before graduation).
- 17 In this case the HECS arrangements result in a higher absolute dollar amount being paid, because the debt level does not benefit from the up-front discount. In some other income regimes this will not be the case.
- 18 Parts of the discussion now following are drawn from Chapman (forthcoming 2006).
- 19 The hypothetical individuals are men and women assumed to begin a four year science degree at age 18 which is completed at age 22, after which they work full-time until retirement, earning the average annual incomes of full-time graduates of their sex. It is assumed that the earnings foregone in their four years of study is that of the average earnings of full-time non-graduates of their sex from age 19 to age 22, and that HECS is repaid according to the rules operating in 2005. The data used are from the Australian Bureau of Statistics 1995/96 Income Distribution Survey adjusted for wage inflation.
- 20 A more technical issue is that the main explanatory variable included in the school leaver equation, the number of Year 12 completers, was subject to considerable mismeasurement over the estimation period, as explained in Ryan and Watson (2003)
- 21 The index used by Andrews was constructed by the Australian Bureau of Statistics.
- 22 Andrews (1999b) also analysed attitudes to debt by individuals in different socio-economic status groups, and concluded that observed patterns in Australia did not show any variation by socio-economic status. Consequently, he argued there should be little or no aversion to acquiring HECS debt by low socio-economic status groups.
- 23 Among students aged less than 25, the highest correlation between the post-code based index and any individual measure was 0.271 (with 'Father's occupational status'). The correlations were particularly low for individuals whose home address was in a rural or remote region.
- 24 There also seems to be some level of 'official' acceptance of the value of individually based measures of socio-economic status. The Australian Department of Education, Science and Training commissioned Jones (2002) to provide advice on how to implement the Western *et al.* (1998) recommendations that parental education and occupation be collected from individuals for inclusion in the student administrative collections.
- 25 Long *et al.* (1999) analysed panels from the Youth in Transition Survey collected by the Australian Council for Educational Research. The additional panel used by Marks *et al.* (2000) is a school grade based panel of students who were in Year 9 in 1995. This panel is the 1995 cohort from the Longitudinal Surveys of Australian Youth programme.
- 26 Individuals were asked about the number of telephones, dishwashers, bedrooms and bathrooms in their home when they were at school. Long *et al.* developed wealth scales based on these responses and compared participation in higher education by wealth quartile.
- 27 Individuals responded yes or no (rather than the number) to questions about whether their house had a dishwasher, computer, piano and swimming pool, among other items.
- 28 These are both panel data sets collected annually by the Australian Bureau of Statistics for the years 1998 to 2002 for the Longitudinal Survey of Australian Youth and the years 1991–94 for the Australian Youth Survey.
- 29 Figures drawn from Table 13.1 DEETYA (1996) and Table 9 DETYA (2000).

30 There are currently 38 Australian universities.

31 Much of this discussion is drawn from Chapman (2004).

32 See Chapman (1997).

33 The Ahmed and Braithwaite (2004) analysis suggesting the low threshold of the 1997–2004 period was associated with some sense of unfairness supports this view.

34 See Chapman and Ryan (2002).

5 Income contingent loans for higher education*

The international experience

5.1 Introduction

Since the mid-1980s there has been a quiet revolution internationally in the nature of higher education student financing. This has taken the form of a movement towards income contingent loans (ICLs). But the forms, structures and administrative arrangements differ between countries and over time, and vary considerably in terms of their implications and effects.

This chapter describes the international experience of those countries which have adopted, or are about to adopt, ICL schemes for the financing of higher education. Where possible, it examines the consequences of these different approaches in a variety of dimensions. For many of the countries there has only been very limited documentation of their ICL experiences, which is the reason so much detail has been provided in Chapter 4 with respect to Australia where there is substantial evidence on the effect of its ICL policy, the Higher Education Contribution Scheme.

The chapter also considers the circumstances relevant to ICL adoption in a host of developing countries in which there has so far been little success in reforming higher education financing. The factors pertinent to this lack of progress are examined, in order to better understand the legislative and institutional requirements for the implementation of ICLs.

5.2 The international experience with the adoption of ICLs described

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 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 ICL (see Chapter 3).

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 their involvement in the programme (Palacios 2004). Even so, risk-pooling necessarily meant that high-income earners substantially 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). Detailed discussion of the conceptual problems associated with the Yale Plan is provided in Chapter 3.

One of the major weaknesses with the Yale scheme was that the university acted as the collection agency. However, an educational institution is poorly equipped to enforce efficiently the payment of ICLs, 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.

Sweden

Currently in Sweden students are not charged tuition, and there is income support in the form of both loans and grants. This income support is not means tested on the basis of parental income, and the loan component covers around 30 per cent of living costs (see Barr 2001). Morris (1989) notes that in 1988 the repayment rules were of the conventional type except that at low levels of income former students were allowed to defer repayments.

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 under the proviso that income exceeds a minimum level. Swedish income support loans had an interest rate of around 4 per cent per annum in the early 2000s, and there is debt forgiveness when the borrower reaches the age of 65.

There is an important element of income contingent collection in Sweden, but there is also a critical difference between the Swedish arrangements and those of more usual risk-sharing income contingent loan systems, such as in operation in Australia, New Zealand and the UK (see Chapter 4, and discussion below). This is that the tax system is not used as the collection institution, this being done instead through an education loans office. There is little available evidence of the effect of the scheme.

Australia (in summary)

In 1989 Australia instituted the world's first broadly based income contingent 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.¹ It is a risk-sharing ICL and has been analysed in detail in Chapter 4.

New Zealand

The second country to adopt a broadly based ICL was New Zealand, with this happening 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 making 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 from 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, it has been argued by some that having a market rate of interest on the debt arguably reflects the true opportunity cost of loans (Barr 2001). In Chapter 4 an alternative position was espoused, concerning the potential benefits of the real rate of interest taking the form of a discount for up-front payment, as is the case with HECS.

In the New Zealand case, 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.² These complications have apparently not meant high administration costs of the scheme, with La Rocque (2005) reporting that in 2004 the annual costs of

collection were around \$NZ23 million, per year, which is even lower than estimates for the collection of HECS.

A potential advantage of the New Zealand scheme is that universities have discretion over the prices charged, and receive the tuition revenues directly. This might imply 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. For this reason some commentators, for example Barr (2001), have compared the New Zealand approach favourably with the pre-2005 Australian arrangements, in which ICL revenues accrue to the Treasury with no implications for resource allocation. In 2005 the Australian government instituted reforms along these lines.³

There is little direct evidence of the effects of the New Zealand ICL scheme 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 ICL scheme.

Unlike HECS, the New Zealand system has been fairly controversial, and has undergone considerable parameter changes, particularly with respect to the role of real interest rates. In the beginning, real rates of interest were required on all debtors, but because of the apparent unpopularity of this approach it was revised in 2000 (Warner 1999). In collection terms the New Zealand ICL scheme has apparently worked satisfactorily.

Republic of South Africa

The Republic of South African 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 (Jackson 2002; Ishengoma 2002). While bursaries could have been used instead of ICLs, it was considered that the costs involved 'would not be financially sustainable' (Jackson 2002, p. 83). The scheme initially provided resources to about 7,500 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 ICL 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 \$US5,000 is very much lower than the thresholds used in other countries' ICLs (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 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 with such an approach.⁴ NSFAS loan repayments are returned to the university system, meaning that to some extent the arrangements are self-financing.

United Kingdom

Higher education financing policy over the last 15 years or so in the UK has been characterised by considerable instability. Until very recently there were no tuition charges, but such charges were introduced in 1997 with the adoption of (a highly modified) version of HECS.

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 argues that 'by the late 1980s [it] was no longer adequate fully to support a student's living costs' (Barr 2001, p. 202).

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 they were more generous than this given that there was a zero rate of interest. Barr (2001, p. 202) notes critically: '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 1997) recommended strongly the adoption of a scheme based on HECS. It had the following features:

- a uniform charge of about 25 per cent of average course costs;
- the charge to take the form of a debt, with loan recovery to be contingent on income and collected through the tax system;
- the debt to be adjusted over time, but by less than the market rate of interest and
- revenue from the scheme to flow to the Internal Revenue Service.

The Labour government, elected in 1997, adopted a heavily modified version of the Dearing Committee's recommendation. In particular an income test was introduced, and this took the following form: students from poor backgrounds were excused from paying any tuition, while students from rich families incurred the entire debt. In between the debt obligation was determined by means of a sliding scale (Barr 2001). 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 documented in Chapter 4. The important point for ensuing policy development, however, is that the changes introduced a form of an ICL to the UK in 1998.

In 2003, the UK government announced further proposed reforms to higher education financing, to be instituted in late 2006. The major planned changes are:

- the introduction of tuition for all students, but with the poorest being provided with subsidies;
- the introduction of price discretion for universities, but with a minimum charge of £1,000 and a cap of £3,000 per full-time student year;
- tuition to be collected through the tax system in a similar way to that operating in Australia and New Zealand (a minimum income threshold for repayment, and repayment taking the form of proportions of income after the threshold is reached) and
- universities being provided with these means-tested subsidies conditional on charging the full level of tuition.

As with the Australian and New Zealand schemes, the UK ICL policy is likely to be relatively inexpensive to administer. 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 ICLs loom large.

United States

In 1993 the Clinton administration introduced broadly based reforms to student loan programmes (Brody 1994; Schrag 2001). One noteworthy aspect of the reforms included an option for students to convert some part of their loan obligations into income contingent repayments, with the ICL obligation being up to 20 per cent of an agreed income basis.

The ICL option in the US can be traced to the Clinton administration's concern for the job choice of graduates. Specifically the perceived problem

was that the very high traditional loan repayment burdens of graduates were such as to make job choices in relatively low paid, but presumably 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.⁵

In support of the above, a survey of Georgetown and Catholic University law students conducted by Schrag (2001),⁶ 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 ICL scheme (Schrag 2001).

That is, ICLs were promoted in the US as a result of the perceived problems associated with the very high level of conventional loan repayments, which is certainly not the case with respect to the basis behind ICL introduction in Australia, New Zealand and the UK. In these countries, the regressivity of having a no-charge system, the importance of default protection and consumption smoothing in the repayment of loans, and the need for resources to allow expansion of higher education, were the principal motivations for the introduction of ICL schemes, albeit fairly implicitly.

The ICL 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 ICL option (Schrag 2001).

The basis for low take-up of ICLs in the US seems to have two, arguably closely related, explanations. In broad terms these are: the poor design characteristics of the policy, and the government's ineptitude in explaining and publicising accurately the scheme's implications for student debt and repayment obligations. It is possible that both weaknesses reflect a lack of ICL commitment on the part of those with US policy influence.

With respect to design, the US ICL scheme has several anomalies. The first is that ICL repayments occur in addition to other loan payments. This means that a graduate could have to repay 20 per cent of their income at the same time that they faced high additional loan obligations. Thus, for some students, the part-ICL option would result in lower future disposable incomes than would have been the case with alternative borrowing choices.

Second, the ICL scheme incorporated an adjustment of a debtor's income to take into account expenditure for necessities, related to

assessments of poverty levels. Unfortunately, the adjustment to incomes was insensitive to household income, an implication being that married debtors in some circumstances faced a far higher burden than would be the case for the unmarried. The scheme implicitly taxed marriage and thus was likely to place some part of the loan obligations on spouses who have no responsibility for the debt.

Third, the debtors who had not repaid their loans after 25 years were not obliged to repay their remaining obligations, a feature of other loan systems (such as Canada Student Loans) known as forgiveness. However, for the US scheme the slate is not wiped clean, with the amount still owed after 25 years being treated as income to be taxed accordingly in that year. This could mean some ICL debtors would face loan repayments in the final year that were a very high proportion of (or in an extreme, even exceeding) actual income. This suggests that the US ICL scheme was not a repayment arrangement completely sensitive to future capacity to repay.

The other reasons behind the poor take-up of the US ICL scheme are related to government information processes. Two points are worth noting.

First, according to the Schrag survey, only a small proportion of students who might have converted other loans into an ICL were informed of its existence, with more than two-thirds of respondents saying that they had never heard of it. Further, in a related survey only 14 per cent of student Financial Aid Advisers said that they 'Understood the [income contingent loan] option well' (Schrag 2001, p. 795). As well, while the US government disseminated information about the relative merits of different loan options for students, some of the data were misleading.⁷

In short, it should be no surprise that the US government ICL reforms have not been productive. The basic point from the experiment is that policy design and information processes are critical to the success of public sector initiatives. The US scheme does not adequately address the issues of default protection or consumption smoothing, 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 (American Bar Association 2003), entitles law graduates to some forgiveness of loan obligations who choose employment in 'lower-paying public service jobs – such as legal services programs or some government agencies' (*ibid.*, 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.

Chile

Chile introduced a far-reaching higher education reform in 1990. Public funds were given to traditional and newly-created public universities based on an agreed formula taking into account their ability to attract good students. Second, a special fund was created to support research projects; third, students were asked to pay tuition fees; and fourth, higher education institutions were encouraged to compete for resources and sell services on the market. Finally, student loans were created for those who could not afford to pay.⁸

In 1994 Chile introduced an ICL 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 repayments resulting in widely varied collection results from institution to institution. The average countrywide cost-recovery level is around 60 per cent (as reported in Palacios 2004).⁹

Chile became known as the model for a reform based on self-regulation of higher education institutions, with a highly deregulated market, little state intervention and diversified financing mechanisms. However, the system has not been considered to be successful, due to the small amount of funds and low levels of cost-recovery (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 United States' experience of Yale University ICLs (see above).

Thailand¹⁰

A major educational reform is in the making in Thailand for 2006. The Thai government has endorsed a plan to change the current higher education financing system to a system to be known as Thailand's Income Contingent and Allowance Loan Scheme (TICAL). TICAL has the following characteristics:

- i the new system will use new tuition fee structures that more closely reflect the actual costs of (efficient) operations than is currently the case;
- ii provision for the students to pay for those fees up-front, with a discount, or to defer payments;
- iii students will only have to start to pay these debts when their income, from whatever sources, has reached a sufficiently high level;
- iv debts are interest free in real terms and will be adjusted annually by the existing rate of inflation;
- v the country's tax offices will be responsible for the collection of the students' debts;

- vi whenever the students' income or earning falls below the threshold income, their repayment will automatically stop;
- vii the government is to provide allowances for the daily living expenses of poor students.

The need for change has been argued by Krongkaew (2005) to stem from the fact that the present university financing in most state universities is highly subsidised. On average, students in state universities pay only about 20 per cent of the total cost of operation, with the rest subsidised by the government through general taxation, a practice seen by the government to be both inequitable and inefficient according to Krongkaew. Moreover, the current student loan programme in which university students are able to borrow money from the government to pay for their own tuition and costs of living is experiencing problems because, in Krongkaew's view, many of these students have been unable to start to repay their loans after the two year grace period after their graduation.

Important characteristics of the scheme are yet to be finalised. These include the first income threshold of repayment, repayment rates and whether or not to apply the scheme in the first instance to private sector universities,

5.3 Common factors in the successful adoption of ICLs¹¹

It is interesting to examine some of the circumstances behind the apparently successful adoption of ICLs in Australia, New Zealand and the Republic of South Africa, and the anticipated successful implementation in the UK (in 2005) (and possibly Thailand in 2006). Chapman and Greenaway (2006, forthcoming) record there are several factors shared by the first four countries which might help in an understanding of their adoption of ICL schemes. Two critical aspects of this relate to shared institutional background.

The first is that the above four countries all have in place taxation systems that could be used to efficiently collect student charges on the basis of future incomes. This is a critical administrative issue, and is fundamental to the prospects of the adoption of ICLs 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 first port of call for loan collection, but it still remains the case that the tax system is available for collection.

Second, in all 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). Indeed in the Australian case the revenue flows from ICLs were centralised and accrued to the Treasury without reference

to, and with no implications for, the direct financing of universities. This has meant that the more complicated problems associated with delivery of a direct revenue base to specific universities are avoided.¹²

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 have been the norm in that country). The expansion of the number of university places, or improvements in the quality of the service, were 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 (2006 forthcoming) argue that this can be traced to a world-wide 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.¹³

It is possible that the apparent successful implementation of the Australian ICL helped to motivate administrative change in these directions in some of the other countries. This is a result of New Zealand policy advisers being aware of developments in Australia, and a consequence of direct contact between analysts from Australia and the UK, which 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'.¹⁴

It is clear from the foregoing that in the financing of higher education policy transfer has taken the form of the 'learning from others' variety. It has been a voluntary process and it has been evidence based in that governments have learned lessons about implementation from experience elsewhere. What follows considers the factors which might help explain fairly rapid adoption in a number of OECD (Organisation for Economic Cooperation and Development) countries and the general non-adoption in developing countries.

Chapman and Greenaway argue that when one looks at the experience of Australia, New Zealand, the United Kingdom and South Africa several features stand out. First, similar preconditions held prior to reform. In all cases there was a felt need for an increase in higher education participation ratios, but given constraints on public funding there was an unwillingness and/or inability to finance this through higher taxes. Second, similar core objectives lay behind deciding upon undertaking reform. Obviously these include securing stable and predictable non-public sources of finance. Given the under-representation of entrants from low-income families it was seen as imperative that access was not damaged by any new arrangements.

The introduction of ICLs in New Zealand, South Africa and the UK was most certainly influenced by experience in Australia, which brings us to a third factor: similar institutions. All four countries are former members of the British Empire (and current members of the

Commonwealth). Not only do they share a common language, but not surprisingly have similar institutional arrangements in higher education. After all, the bedrock for each was introduced by the then colonial power and influenced strongly by arrangements back in the UK. So, for example, in the heated debate which has raged in the UK over the period since 1990, evidence from implementation of ICLs in Australia and New Zealand was taken much more seriously than comparisons with arrangements in the US or continental Europe. Since Australia and New Zealand were seen to be institutionally very similar to the UK, Chapman and Greenaway's (2006 forthcoming) assertion that 'if it could work there, it could work here' was ultimately an important comfort to policy makers.

As stressed earlier, the institutional environment and cultural empathy were not the only features of the infrastructure that were important. So too was a secure and low-cost collection mechanism. In all cases being able to route repayment through the income tax collection arrangements has minimised the potential for default and minimised collection costs.

While there have been significant reforms in the direction of the adoption of ICLs in the above countries, this has not so far been a shared experience in developing countries, although Thailand might turn out to be an exception. This is the case even though there has been a significant amount of attention with respect to ICL reforms from the World Bank, the UK Department of International Development and other international aid agencies. The following section examines the experience of these countries, and derives conclusions as to the relative lack of successful implementation of ICLs in developing countries.

5.4 Application issues for income contingent loans in developing countries

Developing country case studies: background

While there have been important reforms in the direction of the adoption of ICLs in the countries considered above, this has not so far been the experience in developing countries. This is the case even though there has been a significant amount of attention with respect to ICL reforms from the World Bank, the UK Department of International Development, and other international aid agencies.

There have been many missions to developing countries exploring higher education financing reform, with a particular focus on the possibility of introducing ICLs. Specifically and among others, these have been to: Indonesia (1995 and 1998); Papua New Guinea (1996); Namibia (1996); Malaysia (1999); Ethiopia (2000); Rwanda (2001); the Philippines (2002 and 2003)¹⁵ and Mexico (in 2003). Major issues are clearly implementation and administration.

What now follows explores the policy debate with respect to several of

the developing countries noted above. An attempt is made to draw some lessons from what are obviously disparate experiences and different challenges; it is obvious, however, that there are broad points of commonality and shared problems to be addressed in the reform of higher education financing in developing countries. As a practical guide concerning how to go about such reform in a generic sense, a checklist is offered to illustrate practical ICL reform steps for a hypothetical developing country.

Chapman and Nicholls (2004) point out that developing countries, with some notable exceptions, typically do not enjoy the soundly based, efficient and comprehensive income tax arrangements that characterise the policy environments of Australia, New Zealand and the UK, for example. Most often, alternative potential systems of collection – such as those associated with universal delivery of social security – are also not to be found. As well, many countries are beset by problems of corruption in public administration, and their informal economies are comparatively large. There is intense competition between various priorities for public finances and, due in part to weaknesses in taxation systems, there is little revenue to ensure efficient public administration.

Chapman and Nicholls argue that where government subsidised student loan schemes, of any description, exist or have been tried, failures and very high default rates have induced scepticism about the potential for success of any future programmes in this area. The legislative frameworks surrounding the financial sector are often weak and/or undeveloped, with the practical effect that there is little legal recourse to cover the circumstances in which borrowers default on loans of any kind. Furthermore, in some countries a culture has developed among students and former students with an atmosphere of disregard for the integrity of student loans as legitimate policies.

There is an emerging literature focusing on administrative and institutional constraints related to education reforms in developing countries. For example, Ziderman and Albrecht (1995), Johnstone and Aemero (2001), Salmi (1999) and others, analyse the problems associated with the institution of student loan programmes in developing countries. While there has been an increasing emphasis on imposing charges, and moving student income support away from grants and towards loans, the significant problems of administration and collection are an important theme of this literature. This is as it should be.

5.5 The ICL adoption debate in developing countries: some case studies

Ethiopia

In Ethiopia only 30 per cent of children commence primary school. Student numbers fall sharply at upper secondary level, where substantial

up-front tuition fees are charged. Until only five years ago, higher education had been located exclusively in the public sector, with only 30,000 students being enrolled in subsidised places, a tiny figure for a country with 60 million people.¹⁶ A similar number is enrolled on a full-fee basis in evening courses and the rapidly burgeoning private sector, however, there being 9,000 students enrolled in 2001. At that point most students paid no tuition fees and these students were provided with accommodation, meals and other benefits free of charge.

In 1990 the national government, assisted by the World Bank, began exploring cost-sharing for public higher education students. As was the case for Australia, New Zealand and the UK, a major justification for reform was the inequity of a no-charge system, it being estimated in the 1990s that private rates of return to tertiary education were very high, possibly as much as 27 per cent per annum.¹⁷

The necessary support of various government agencies was initially difficult to secure. Furthermore, Chapman and Nicholls (2004) argue that while Ethiopia has a robust system of public administration, the relationships between levels of government – central and regional – are complex, with taxation arrangements being somewhat convoluted.

As a result an alternative plan was considered in 2002, involving the application of a flat graduate tax collected as a percentage of salary over a set period of years (for discussion of the conceptual characteristics of a graduate tax, see Chapter 3). This is the simplest possible version of an income contingent system of deferred payments, and was introduced in the 2003/04 academic year.

The Ethiopian graduate tax has the following repayment characteristics:¹⁸

- i payments to be collected from ex-students on the basis of a formula calculated as a percentage (proposed as 10 per cent) of annual income, deducted from salaries;
- ii the exemption of around 35 per cent of students from payment of the tax, including teachers and other professionals deemed to be of public interest and
- iii discount for an up-front payment for those paying on an ongoing basis, which is apparently 5 per cent of expected future average payments.¹⁹

The World Bank has broadly applauded the new graduate tax scheme, but offers some telling criticisms,²⁰ including that:

- i the minimum repayment rate of 10 per cent looks to be very high for Ethiopian graduates, given their levels of income;
- ii excusing a large number of graduates from any repayment obligations is questionable, and if those exempted were also subjected to payments the high rate of 10 per cent could be reduced, and

- iii the 5 per cent discount for up-front payments seems to be too low to encourage significant take-up.

This last point is undoubtedly true, particularly for a scheme in which the collection mechanism is untested and has a high probability of allowing many debtors to escape payments. To help ensure efficient and wide-spread repayments the following institutional reforms are being initiated:

- a proposed collection mechanism to be established within the Social Security Authority (SSA), whose core purpose until now has been the collection of contributions from provincial and Central Government employing agencies to fund the retirement incomes of civil servants, utilising the unique numerical identifiers assigned to public-sector employees by the Authority;
- extension of licensing provisions regulating foreign private companies to require them to register with the SSA for the purposes of collecting repayments from Ethiopian graduates;
- formalisation and active encouragement of the extension of the reach of the SSA to privatised former government enterprises and assets, and, on a voluntary but strongly encouraged basis, into other parts of the private sector including foreign NGOs and
- restrictions on the issuing of exit visas to graduates to require them to repay their student loans prior to leaving the country.

Even so, in the Ethiopian case there remains uncertainty that a sufficiently accurate record-keeping system can be developed to maintain the records of each former student's repayments and his/her progressive level of indebtedness. On the positive side it is worth noting that most graduates are employed in the public sector and, since their incomes are known with some accuracy, the income stream generated from the measure can be predicted. A virtue of the plan is that, while the amount collected from each graduate will be related to actual income (helping to ensure that the benefits of ICL of default insurance and consumption smoothing)²¹ there is no need to calculate and track the payments and remaining debts of each graduate.

However, implementation remains the big issue, and the Ethiopian case study highlights the need for administrative simplicity and promotes to centre stage the importance of collection. Johnstone and Aemero (2001) argue that the Ethiopian collection difficulties are serious enough to mean that any ICL is unlikely to be workable. To date there is no direct evidence on the success or otherwise of the graduate tax reform.

Namibia

A country of two million people, Namibia has been independent from its colonisers, South Africa, since only 1990. Chapman and Nicholls (2004)

report that Namibia has inherited a relatively strong legal and administrative framework and this should be a plus for the implementation of an ICL.

Chapman and Nicholls suggest that in 1996 Namibia's higher education system was compromised by a fundamental breakdown of the country's system of student financial assistance. This had consisted of a bursary scheme designed to provide bonded scholarships and grants for students willing to commit to work in the civil service following graduation. Bursaries were allocated on the basis of academic merit rather than need and according to Chapman and Nicholls, a consequence was that the system was unpopular with students. As well, severe cutbacks around this time in public sector recruitment meant that many bonded graduates could not find work. Consequently many were required to repay the government an amount equal to their bursary assistance.

The replacement developed for the bursary scheme was based on cost recovery, and represented a radical change in policy. It is universal, rather than selective, and requires those students choosing to take advantage of the assistance to repay the government on an income contingent basis following graduation. The scheme replaces grants with loans.

The policy reform is designed to provide a leverage point, through financial incentives, to encourage students into courses where labour market needs are seen to be greatest. Two types of financial assistance are provided – scholarships, for students in greatest financial need and also for those prepared to undertake courses in areas of high economic priority, and loans for other students. These are in two categories: smaller loans covering tuition fees only, and larger ones to include living costs. Thus there is considerable flexibility both for students and for the government, and this presumably matters with respect to influencing student choice.

The plan involves establishing the scheme legally as a Fund, with powers to invest and borrow money, but the Fund is required to take the advice of the Government on certain policy matters. Namibia does not have a taxation system of sufficient reach to render it suitable for collection purposes as part of the scheme. Instead, the Social Security Commission was identified as a suitable collection agency, because of its potential to track graduates through unique numerical identifiers and a computerised record-keeping system. It was planned for repayments to be pegged to graduates' salaries, payable only when a specified salary threshold is reached.

The new programme is seen by Chapman and Nicholls (2004) to be a potentially more effective means of assisting students than the former bursary regime. What is not yet clear is the extent to which the proposed system can operate efficiently. Again, collection challenges loom large.

Indonesia

Indonesia lacks a sound public administrative infrastructure that might underpin a collection system for an income contingent student loan programme. In Chapman and Nicholls (2004) it is argued that the country is apparently beset by ongoing economic and political difficulties, its legislative system is weak, and the legal framework surrounding the financial system is particularly so. Thus Indonesia might seem to be a poor candidate for a programme of student loans.

In this country, as in many developing countries, the history of government subsidised student financial assistance schemes has been vexed. A previous loan scheme was operated through a commercial bank and default rates were over 90 per cent. Attempts to design and establish an ICL scheme for Indonesia have been associated with an Asian Development Bank (ADB) project concentrating on engineering education in 12 selected public-sector universities and polytechnics. The initial design phase for the programme took place in 1995. Implementation, originally scheduled for 1997, was delayed until 1998 following the onset of the Asian financial crisis in that year.

The central feature of the Indonesian scheme as then proposed involved an advance of a lump sum (originally \$US3 million) to the Bank Negara Indonesia (BNI) which, as the largest public-sector bank, has branches on every university campus. This bank also serves as the vehicle for financial transactions between the government, on the one hand, and public universities and polytechnics, on the other. The essential agreement entailed the commercial bank having full access to the funds in return for administering and financing the loan scheme.

Incentives were proposed for BNI, to manage the scheme efficiently and effectively. In return, BNI would gain access to what in effect was a captive, and relatively lucrative, retail banking market: engineering graduates whose income prospects were relatively good.

Following the financial crisis of 1997–98 the proposed scheme was replaced by a much less ambitious, small-scale, locally based grant and emergency loan programme and funding for the financial assistance scheme was reduced. While the government has promoted the intention to implement such a programme when economic circumstances permit, it seems unlikely in 2005 that ICL reform will transpire over the next few years.

Rwanda

Like many African countries, Rwanda's 7,000 higher education students currently receive free tuition and grants to cover the cost of board and lodging. Secondary school students, on the other hand, pay tuition fees: therefore those eligible to enter university come from relatively privileged

backgrounds. University students receive substantial public subsidies, and as graduates they also enjoy significantly higher average lifetime earnings than do non-graduates (see Chapman and Fraser 2000).

While there is an apparent need to expand the country's higher education system it is apparent that this cannot be achieved unless sources of finance other than government funding can be found. At the same time, Chapman and Fraser argue that it is desirable that action be taken to reduce or eliminate the tuition fees charged for secondary education, so that both secondary and tertiary education become more accessible to students from poor families. They promote the introduction of deferred tuition payment, not only for a share of teaching, but also instead of the grant then provided for students' board and lodging. This latter amount represents a sum almost equivalent to the full average course costs per capita.

Chapman and Fraser (2000) suggested that, initially, tuition charges should be imposed (along with a deferred-payment scheme), with the proceeds being used to help move secondary schooling arrangements away from up-front fees. The case has been made that the higher education grants scheme is also in need of reform, and that savings in this area could similarly be used to decrease up-front secondary schooling costs. A movement from grants to loans would seem to be justified if the imposition of an income contingent repayment system could be established and found to be workable.

Chapman and Fraser emphasise that the country has a system of unique numerical identifiers available to all from the age of 16, and that this arrangement is mandatory from age 18 years. Their plan proposed that upon enrolment, students would be given the option of paying their tuition charge up-front, at a lower rate, or otherwise to defer payment until graduation when they would repay on an income contingent basis. The higher education institution would be required to establish a new record for each enrolling student who has chosen to defer payment, along with the year of study and the course charge applying.

Rwanda has an income tax collection system that could be used to collect repayments from graduates, via deductions by employers from salary. Graduates could be asked to produce evidence that they have paid their university charge in full. Where they have not done so, the employer would be required to keep a record of the graduate's unique personal identification number and to remit payments monthly, along with income tax, at the rates suggested under the scheme; for example, of 2, 3 or 4 per cent of salary, dependent upon taxable annual income.

Chapman and Fraser suggest that the tax authority (Rwanda Revenue Authority) could adjust the individual records of graduates and remit the payments in turn to the Government of Rwanda Treasury. A variant on this relatively simple scheme would involve the establishment of a separate administrative body, which could manage the scheme. The

Commissioner General of the Rwanda Revenue Authority has suggested that the organisation is administratively able to carry out the functions as specified under the suggested structures. However, by 2005 no concrete advances had been made towards the implementation of a Rwandan ICL and, as with the Ethiopian case, there is a real potential that collection difficulties loom sufficiently large to make its successful operation questionable.

The Philippines

As is the case in many developing countries, the Philippines has experienced severe problems in the implementation of student loan schemes. The government's 'Study Now, Pay Later' (SNPL) programme in higher education, a conventional loan in which repayments are made on the basis of time, is offered right across the sector (including the extensive private college and university system), but the take-up rate has been very low. This is due largely to the modest level of funds available to borrowers, and these have not increased since the programme was initially established in 1975.

Since its introduction repayment rates have dropped to around 2 per cent. Chapman and Nicholls argue that a feature of the climate surrounding loan schemes in the Philippines is that students, their families and even their teachers and lecturers often seem to regard loans simply as handouts. This creates an obvious difficulty for those responsible for policy credibility in this area.

Small-scale loan schemes have been more successful than the SNPL programme, especially in private higher education, where institutionally based arrangements have enabled students effectively to stagger the payment of tuition fees over the academic year. Notably more successful – achieving repayment rates of up to 98 per cent – have been micro-credit programmes in both higher education and the technical/vocational education and training (TVET) sector, where students and trainees have been able to borrow to meet costs associated with practical work and projects.

In 2001/02 an attempt was made to design a higher education student loan scheme as part of an Asian Development Bank project (the Education Sector Development Project). Design parameters required the programme to be financed entirely from the private sector. This factor created severe difficulties and so far no credible, potentially sound model has emerged, although Chapman and Nicholls suggest that in the longer term it may be possible to establish a programme that utilises the administrative structures and the financial resources of the country's two major pension funds. These organisations, however, were initially involved in the failed SNPL programme, a central reason for the failure possibly being that the government provided a 100 per cent guarantee to administering institutions against default, thus providing no financial incentive to collect repayments.

In 2003 a small-scale programme was proposed for the public TVET sector in the Philippines. Again, this was associated with an ADB project, this time the Technical Education and Skills Development Project (TESDP). Thus far little progress has been made in its implementation. It is probably the case that concerns with respect to collection have contributed to this situation.

Mexico

The current Mexican public higher education system is one in which there are no tuition charges for students, and is characterised by excess demand (a large number of prospective and qualified students are unable to gain public sector places). Moreover, it is very likely to be the case that individuals from the least advantaged backgrounds have less access to the system than do others. There seems to be a compelling case for increasing the financial resources available to allow increased enrolments and improvements in service, and the analysis from Chapter 2 suggests that this should be financed in part by tuition charges.

However, a challenge is how to redress current inequities and facilitate an expansion without diminishing access to the system of talented prospective students. The fact that there is no charge for higher education students in Mexico implies that the system is regressive. There are two aspects.

The first relates to the socio-economic background of students. Data supplied by the SOFES (Sociedad de Fomento a la Educación Superior – Society for the Promotion of Higher Education) group from the Mexican Census suggests strongly that higher education students come disproportionately from the most advantaged parts of Mexican society. For example, as measured by household income, it is suggested that less than 7 per cent of the bottom two deciles of youth attend university, but this figure is around 90 per cent for the top two deciles.

The second issue concerns the private benefits associated with being a university graduate. This has been addressed in the typical human capital approach concerning estimations of Mexican private rates of return to higher education, and the data show that these are apparently very high, upwards of around 25 per cent.²²

According to Mexican higher education officials currently there is considerable excess demand for public university places. It is apparently the case that up to 80 per cent of new prospective students each year are not offered enrolment, and it is considered that around half of this group are qualified for entry and would likely benefit from the investment. Many of those rejected consequently enrol in the private university system where, although there is a small student loan scheme available, a majority pay up-front tuition without student loan assistance.

Together with the data concerning socio-economic background there

seems to be little doubt that in a lifetime income sense Mexican university graduates are relatively advantaged, arguably significantly so. Having the public sector cover the vast majority of the direct costs is unquestionably regressive. Thus the basic equity point, outlined in Chapter 2, for charging higher education students for part of the costs is easy to establish in Mexico, as it is in other countries.

It is unclear at this stage if the preconditions outlined above can be met in Mexico. The most important of these, the capacity to determine with accuracy students' future incomes, has been explored in discussions with tax officials who have suggested that the potential is there. For example, there is a unique identifier system, with photo ID, which is required for employment and which is used in the collection of income tax. This is an essential prerequisite, but additional exploration of the possible successful operation of the collection system would be of great value. The reform debate, initiated in 2003, is currently in abeyance, in part because of political concerns with respect to the likely unpopularity of the introduction of a charge.

5.6 Implementation requirements for income contingent loans

Introduction

The experiences of the countries considered above are very different. With respect to the possible introduction of risk-sharing ICLs it is important to emphasise: the need for flexibility, the imperative of the nature of the institutional contexts and the need for creative approaches. While all of this is important, there are several essential policy anchors that remain central to the successful development of any higher education financing arrangement based on the principle of income contingency. In this section these general points are now considered.²³

Administrative and legal preconditions

In Australia and other countries in which an ICL system 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 income taxation and/or social security collection and an efficient repayment mechanism. The last involves computerised record keeping of residents' vital financial particulars and, very importantly, a universal system of unique identifiers (often accompanied by an identity card).

Under these circumstances it is not complicated to identify and track individual citizens and their incomes over time and space. It is not

expensive, moreover, to tack onto some existing tax 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, these preconditions are often lacking. Administrative systems are likely to be weak, and often rely on 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 ineffectual (Chapman and Nicholls 2004). Nevertheless, in these countries even a modest up-front charge for higher education arguably constitutes a significant barrier to participation for citizens other than the very privileged.

However, as stressed in Chapter 2, the economic and social rationale for the imposition of a charge for higher education is a compelling one: in countries characterised by serious inequality the comparative economic benefit accruing to graduates, compared to other citizens, is a factor that further exacerbates social and economic inequality. While to do so on the basis of income contingency is preferable in economic terms, as explained in Chapter 3, the major challenge is how to achieve these policy goals in the face of the difficulties described.

Minimum requirements in summary

From considerable direct policy experience Chapman and Nicholls (2004) argue that the minimum conditions ideally required in order to implement a successful system are:

- i a reliable, preferably universal, system of unique identifiers;
- ii accurate record keeping of the accruing liabilities of students;
- iii a collection mechanism with a sound, and if possible, a computerised record-keeping system and
- iv an efficient way of determining with accuracy, over time, the actual incomes of former students.

Some would argue that a further basic requirement for the introduction of ICLs is a strong legal framework and functional judicial system. Indeed, it is hard, from a developed-world perspective, to imagine implementing a workable scheme outside this context. However, it is important to be mindful of the need to tolerate imperfections in any scheme – within the limits imposed by the need for policy integrity and credibility.

It is worth noting that of the four conditions noted above for the implementation of an ICL, three apply also to the collection of any kind of loan. The exception involves determining with accuracy, over time, the actual incomes of former students. This particular criterion is likely to be the most difficult institutional barrier to ICLs for reform in developing countries.

The different experiences with respect to higher education financing reform lead Chapman and Nicholls to suggest that strong political commitment to change is a necessary, albeit not sufficient, condition for change. In Australia, New Zealand, the UK and Thailand, it was clear, or became clear over time, that the higher education systems would inexorably deteriorate without funding changes. In these cases the main players were prepared to live with the short-term political costs in the hope of achieving longer-term social and economic benefits. In some of the countries considered above it is not obvious that this is the case and in the absence of a different political landscape there is little doubt that funding reforms are unlikely to eventuate.

5.7 Necessary steps for implementing an income contingent loan scheme

The discussion of different countries' schemes, or proposals, has clarified what steps might be necessary in a generic sense in setting up an income contingent loan scheme. In theory and in summary the system might work as follows:

- i upon enrolment students choose between an up-front payment, or incurring a debt reflecting course costs and living expenses;
- ii those paying up-front do not have to be followed further, but would be later if they choose to incur debt in following years of study;
- iii those incurring the debt are issued with a country's unique identification number by the university (which could have access to blocks of unused numbers);
- iv the size of the debt is recorded and the information is communicated to a higher education unit, perhaps located in the Ministry of Finance or equivalent;
- v a higher education debt record is set up, likely to be unique for each student;
- vi at the time of employment the former student is required to let the employer know what his/her number is, and the employer is required by law to remit debt repayments (contingent on the employee's annual income and the repayment parameters) to the relevant tax or social security authority (this remittance could take the form of withholding, as is currently the case with respect to income tax);
- vii the relevant authority would be required to remit the debt repayment to the higher education unit in the Ministry of Finance, where the unique identifier allows a former student's debt to be adjusted accordingly;
- viii after the debt is repaid in full the Ministry of Finance informs the employer that no further obligations exist, and the employer ceases collection from the former student.

5.8 Summary

This chapter has examined the policy experience of many countries with respect to the implementation of ICLs. In some developed countries, for example Australia and New Zealand, the schemes seemed to have been successful in administrative terms. In other developed countries, most obviously the US, the design parameters of ICL policy have been poor, resulting in low take-up. An additional critical lesson is that the collection of loans is most efficient if operated through national income tax systems.

It has been argued that with respect to developing countries the systems and structures most resembling those prevailing in the 'template' countries, such as Australia, New Zealand and the UK, will not generally be available. It follows that there are real limits involved, meaning that approximate solutions have to be considered. It should be clear that if this is not possible, ICLs are not a viable reform proposition.

In many countries there are severe difficulties associated with the establishment of ICL policy integrity, credibility and collection, but at the same time there remains an important economic case for charging tuition. Given this policy context, both Johnstone and Aemero (2001) and Chapman and Nicholls (2004) suggest that it may be desirable to proceed with the imposition of up-front fees and scholarships instead of ICLs. Johnstone and Aemero (2001), in particular, offer considerable scepticism with respect to the possibility of applying ICLs in developing countries, using Ethiopia as an example.

The case for and against the promotion of ICL policy for higher education financing in developing countries can be expressed with reference to both the theoretical discussion of Chapter 3 and the problems of administration considered directly above. The issues for the policy maker, argued throughout this book, are as follows.

A workable risk-sharing ICL higher education financing policy is the approach most likely to deliver outcomes consistent with economic theory. That is, unlike alternatives such as government guarantees to banks for commercial loans, ICLs offer both default protection for lenders and debtors, and consumption smoothing for former students. As well, because a student's loan repayments can be designed to be a relatively low proportion of expected future taxable income, ICLs offer the prospect of agents making career choices which are insensitive to debt obligations.

The big point from this chapter is that the benefits of higher education reforms in these directions rest on the assumption that an ICL can be made operational. However, if this is unlikely to be the case, as still seems to be true presently in most of the developing countries examined above, policy makers have an inferior set of choices: to charge tuition without adequate default protection for borrowers or to have regressive systems with no tuition. Currently for most developing countries the preferred policy appears to be the latter.

Notes

- * Parts of this chapter draw upon Bruce Chapman (2006) "Income related student loans: Concept, international reforms and administrative challenges" in Pedro Teixeira *et al.* (eds), *Cost-sharing and Accessibility in Higher Education: A fairer deal?* Dordrecht: Springer: 79–104.
- 1 In Australia income support takes the form of means-tested grants.
- 2 As noted in Chapter 4, the government has recently announced that the rate of interest would be reduced shortly to zero.
- 3 The reforms were implemented in February 2005.
- 4 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.
- 5 President William J. Clinton, Radio Address to the Nation (1 May 1993).
- 6 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.
- 7 For example, comparisons of the expected total repayments of alternative loan repayment streams were presented with an implicit discount rate of zero. This error implied that the ICL option was much more expensive than it was in reality.
- 8 By 1990, the government was providing only 30 per cent of the resources for higher education, with 35 per cent coming from private sources (tuition and gifts) and another 35 per cent from selling services to public and private buyers.
- 9 This number reflects collection for other types of loans as well, so the collection amount for only the income contingent loans could be different.
- 10 The information provided on the Thai scheme comes from Dr Medhi Krongaew.
- 11 The discussion of Section 5.3 follows closely Chapman and Greenaway (2006, forthcoming). David Greenaway is not responsible for any errors or omissions in the chapter.
- 12 As Chapman (1997a), Barr (2001) and others note, this characteristic of ICLs has the important cost of not delivering any resource allocation benefits from price competition.
- 13 These arguments were part of the explicit policy debate in Australia (Chapman 1997a), New Zealand (Warner 1999) and the UK (Barr 2001).
- 14 Kenneth Boulding, unpublished lecture, Harvard University, 1972 (as recalled by Glenn Withers).
- 15 For a fuller description and analyses of these experiences, see Chapman and Nicholls (2004).
- 16 Compare this number to Australian higher education enrolments of over 600,000, from a population of around 20 million.
- 17 See Project Appraisal Document, Ethiopia Education Sector Development Project, 1998.
- 18 As described in World Bank Sector Study (2003).
- 19 It is difficult to understand how this figure was arrived at, or what it means. This is because, unlike a normal ICL in which the level of debt is reasonably obvious, graduate tax obligation levels are much less transparent since they depend very significantly on future income streams. The documents describing the scheme do not clarify this issue.
- 20 See World Bank Sector Study (2003), pp. 23–30.
- 21 These are considered in detail in Chapter 3.
- 22 These findings are reinforced in Roman (2003) for Mexico City, using the National Survey of Urban Employment, in which it is suggested that in 2002 degree holders earn around 60 per cent more than those without.
- 23 A useful addition to this discussion is the checklist for deferred repayment schemes offered in Ziderman and Albrecht (1995, pp. 164–7).

Part II

Income contingent loans for public policy

Five case studies

6 Summary of Part II

Part II of the book examines in detail a range of other public policy applications of income contingent loans (ICLs). It is clear that these proposals are apparently a long way from the issues of higher education financing, yet in concept many disparate areas of government intervention have characteristics in common with the set of concerns motivating the introduction of HECS, the first national application of an ICL (examined in detail in Chapter 4).

For instance, some public sector grant schemes in many countries are regressive, since the direct beneficiaries are likely to be advantaged over their lifetimes compared to the majority of taxpayers financing the schemes (such as farmers receiving drought assistance). Also, in many areas of current public sector involvement there are seemingly very inefficient mechanisms for the collection of financial obligations (such as with respect to criminal fines). And in all the areas considered there seem to be market failures precluding the effective operation of alternative financing systems, such as those involving commercial banks.

In each of the proposed applications now examined there are significant economic and administrative issues that have to be addressed to ensure successful ICL policy implementation. The most important of these are: so-called 'adverse selection', so-called 'moral hazard' and the design of loan collection arrangements. These are now considered briefly.

Adverse selection in the context of ICLs is the notion that if agents are offered choices as to whether or not to take a loan to be repaid contingent on future financial success, the take-up should be higher for those expecting to do poorly. Adverse selection thus has the potential to undermine the basis of an ICL, potentially resulting in low repayments and heavy subsidies to the least efficient and least deserving of those targeted for assistance. ICLs have a relatively high potential to resolve the adverse selection problem if arrangements can be made compulsory by law.¹

However, in many possible ICL applications compulsion is not possible. Accordingly, for an ICL to be associated with reasonable repayments, there needs to be a vetting procedure, a qualification process, for loan applicants to ensure that the chances of non-repayment are not too high.

The case studies all emphasise the nature of the adverse selection problem idiosyncratic to the particular policy areas, and suggest mechanisms designed to minimise its potential.

Moral hazard in the context of ICLs is the notion that debtors might be able to avoid repayments through unethical behaviours, such as tax (and thus ICL obligation) evasion. A different form of moral hazard might take the form of labour market or business effort, since debt repayments will be lower if an individual or enterprise is relatively unsuccessful.

There are several pertinent moral hazard issues with respect to the ICL case studies considered below. One is that it is likely to be the case that the form of moral hazard will vary significantly between the disparate applications. Their nature and solution is examined for each example, as are the quite different challenges arising with respect to the income, profit or revenue base of the collection mechanism.

The first case study examined (in Chapter 7), is by Linda Botterill and Bruce Chapman, and argues for a change to ICLs of Australian public sector grants for drought relief. As is the case with a fully taxpayer funded higher education system, it is pointed out that grants for farm businesses in time of drought are very likely to be regressive, and that there is a fairer alternative involving the use of contingent loans as a substitute or top-up. Estimates are presented which suggest that in order to minimise moral hazard, and to make outlays an effective use of government resources, the collection basis should be the gross revenue of a farm business. To help maximise compliance low collection rates would be necessary.

Chapter 8 is by Chapman, Arie Freiberg, John Quiggin and David Tait, and explores the use of the income tax system to collect criminal fine obligations on the basis of an offender's future income. It is argued that this approach could act as a substitute for fines imposed on low-level criminal activity, such as for assault, theft and drunken driving. The authors suggest that this ICL approach would likely result in a significant reduction in fine collection costs, lower defaults, higher penalties and higher total fine collections. As with all ICL applications, an essential motivation concerns the prospect that such schemes have for minimising repayment hardships (that is, consumption smoothing), and with respect to the prospects and costs of default.

Chapter 9, by Chapman and Richard Denniss, suggests the use of the tax system to collect fines from company profits and individual incomes from collusion and insider trading offences respectively. It is suggested that an ICL collection mechanism, in conjunction with guaranteed financial rewards for whistle-blowers, has the capacity to collect high fine levels, and thus to diminish significantly defaults. The authors suggest that collection would be through the income tax system for individuals guilty of insider trading, and through company profit taxes with respect to businesses found to have been involved in collusion.

In Chapter 10, by Chapman and Ric Simes, there is an examination of

the potential for the use of an ICL for social enterprise investments in economically disadvantaged areas. The proposal is designed to encourage financing for additional community social and regional enterprises, argued by the authors to be limited by current practices characterised by market failure. To address the issues of both adverse selection and moral hazard it is proposed that the arrangement involves contributions from banks, the enterprise and the government, and with some part of the loans to be collected contingent on the enterprise's future profits.

Joshua Gans and Stephen King contribute Chapter 11, which considers income contingent support for the maintenance of housing. Their suggestion is to allow individuals and families to access ICLs in periods of adversity in order to maintain housing. It is argued that housing affordability, particularly for low-income households, is a major public policy concern.

The Gans and King focus is on issues of short-term affordability which they suggest are due to income fluctuations and the associated market failures that create particular problems for low-income households. Their ICL policy response promotes funding assistance for low-income households to help overcome the difficulties associated with short-term housing affordability.

Note

- 1 For example, all Australian higher education undergraduates are required to pay HECS, and from the case studies, low-level criminal offenders would have no choice but to be obligated to undertake the debt (or to pay a fine up-front).

7 Turning grants into loans

Income contingent loans for drought relief¹

Linda Courtenay Botterill and Bruce Chapman

7.1 Introduction

Australia is the driest inhabited continent on earth and also experiences a high degree of climate variability. As such, drought is a frequent occurrence and drought of some magnitude is occurring somewhere in the country most of the time. Since the arrival of European-style agriculture, drought has been a recurring problem for Australia's farmers. The impact has been felt well beyond the farm sector. Although agriculture's contribution to the Australian economy reduced from 18 per cent of GDP in 1952–53 to around 3 per cent in 1995–96 (McColl *et al.* 1997, p. 21), drought still has a significant impact on the overall economy. In October 2002, the Australian Bureau of Agricultural and Resource Economics estimated that drought would reduce economic growth in 2002–03 by 0.7 per cent, implying lost output of about \$A5.4 billion (ABARE 2002).

Australia has in place a National Drought Policy which provides government support to farm businesses as well as a welfare payment to farm families. The farm business support is currently provided as a grant in the form of interest rate subsidies, raising questions of equity and effectiveness. This chapter presents an alternative policy instrument for the delivery of support to drought-affected farm businesses. First, by way of background, we consider briefly the history of Australian drought support policy and the arguments typically offered as justifications for government subsidisation of farmers experiencing drought. We then consider the cost of drought relief and describe the essential problems associated with conventional approaches to the issue. Third, we offer an alternative and innovative approach to the problem, aimed at addressing the conceptual, redistribution and practical weaknesses of current policy.

The proposed solution involves the use of government financed loans with the unique feature that repayments are required only if and when farm revenues have recovered; an income contingent loan. As with the other possible applications of ICLs considered in detail in the book, the advantages compared with the conventional financing mechanism of a bank loan include the provision of both default insurance and revenue

smoothing for the borrower. In addition a drought ICL as at least part replacement for government grants is highly likely to be more equitable than a grants system financed entirely by taxpayers.

Consideration of the critical issue of adverse selection results in the suggestion that ICLs for drought relief should not be made universally available, a vetting process being essential. It is suggested that the form of the vetting could involve an ICL taking the form of a top-up loan in combination with commercial credit. The ICL would then offer some insurance for the commercial lender since the finance provided by the government could be used in part to pay the interest on the commercial part of the assistance.

The chapter reports in some detail repayment and revenue estimates of the proposed scheme. It is apparent that even in the case of the ICL requiring repayments at low proportions of gross farm revenue the returns to the government are manageable in a fiscal context.

7.2 Background issues and the nature of the problem

A brief history of the Australian government's drought relief policy

The Australian government has expended large sums on drought relief in recent decades. Between 1992 and 1996 Queensland and New South Wales experienced prolonged drought which was considered to be the worst such event in the twentieth century and in 2002 the emerging drought was described by the Bureau of Meteorology as 'remarkable' for the widespread nature of its impact (BOM 2002).

In policy terms, drought was treated for many years as a natural disaster. However, in 1989, the Commonwealth government decided that drought would no longer be covered by the Commonwealth-State Natural Disaster Relief Arrangements. It is probable that the motivation for the decision was budgetary, as drought relief dominated the disaster relief budget, accounting for 57.6 per cent of Commonwealth expenditure in this area between 1962–63 and 1987–88 (Heathcote 1991, p. 226). There were also political considerations relating to the management of the scheme by state governments.

The announcement was followed in 1990 with the establishment of an independent review of drought policy which rejected the concept of drought as a specific, defined event based purely on its climatic features, and argued that it was inappropriate to treat it as a disaster. In July 1992 the Commonwealth and State ministers responsible for agriculture announced a new National Drought Policy based on the principles of self-reliance and risk management. It was proposed that the move to this new approach be supported by government through various schemes designed to improve farm management skills and to support farmers in the

transition from disaster relief to risk management approaches to drought response.

While the emphasis was on treating drought as a normal part of the farmer's operating environment, to be expected and prepared for, the policy included additional government assistance for 'exceptional circumstances'. These provisions were developed in recognition that on rare occasions farmers are faced with events, including severe drought, for which even the best farm manager could not be expected to prepare. When an exceptional circumstance is declared, farmers can apply for a welfare payment to meet the needs of the farm family and interest rate subsidies to support the farm businesses. The latter are subject to eligibility criteria designed to limit assistance to businesses with long-term prospects of sustainable operation and are not intended to prop up otherwise unviable farm business operations. In spite of this attempt to ensure that interest rate subsidies are well targeted, we argue that these grants are a flawed mechanism for delivering drought relief. In particular, the grants are regressive and we consider that they could be replaced by income contingent loans. For a more detailed history of drought policy in Australia, see Botterill (2003b).

Is there a case for government involvement?

Governments have delivered drought relief to farmers for decades and this has been justified in a variety of ways. As noted, until 1989 drought was considered to be a natural disaster and this formed the basis of the policy response. Related to the disaster approach has been a concern with the protection of the resource base, including the preservation of the breeding herd. In its 1992 report on a national drought policy, the Senate Standing Committee on Rural and Regional Affairs argued that 'it is in the national interest for the Commonwealth Government to protect and maintain Australia's agricultural base and productive capacity, particularly Australia's breeding herd and flock' (Senate Standing Committee on Rural and Regional Affairs 1992, p. 69). Early drought relief schemes reflected this concern with an emphasis on the provision of subsidies for transporting fodder and moving stock to agistment.

A further argument for government intervention has related to the adverse impact of previous government policies. In the 1860s and again after both world wars, active policies of closer settlement were pursued for a variety of reasons. Many of the farms established under these programmes have proved to be too small to be sustainable in the face of declining farm terms of trade. Advocates of drought support have suggested that governments have a moral obligation to assist farmers whose problems are not of their own making but are the result of poor past government policy.

It seems to be the case that many of the rationales offered for drought support can be traced back to views of the role of the farm sector which

can be best described as agrarianism or, in the Australian context, 'country mindedness'. Although not explicitly stated, the agrarian image of agriculture as a virtuous and noble undertaking can be gleaned from a wide range of documents which discuss rural policy in general and drought policy in particular. These sentiments are arguably behind strong public sympathy for farmers facing hardship and suggest that whatever the economic merits of providing drought relief, there is a political imperative for government support.

There is perhaps an economic argument for government support for farmers during drought that has some basis involving a possible form of market failure with respect to the delivery of credit to farm businesses. The essential credit argument used to support government provision of financial assistance is that in some circumstances farmers have lost the support of their financial institution even though it is arguably the case that they are in fact viable over the long term and require carry-on finance to see their businesses through short-term difficulties. Like many of the arguments for drought relief, this proposition is untested.

It is clear that drought policy is essentially politically motivated; the rationales for intervention are often little more than assertions made to support the case for assistance. Part of the issue is that Australian media are very urban focused with few reporters understanding the complexities of drought policy. As a result, media reporting of droughts tends to be sensationalist, using stereotyped images of bare foot children, parched earth and dying sheep with little in-depth analysis of the severity of the drought or the ability of farmers to manage its consequences.

The removal of drought from the Natural Disaster Relief Arrangements ended the 'natural disaster' rationale but the government continues to be persuaded that significant financial outlays are justified when there is a severe drought. It is worth noting that the original intent of the National Drought Policy was that support through the exceptional circumstances provisions be for rare and severe events, roughly once in 25 years. However, the provisions have been in use almost continuously since their introduction with the first declaration of an exceptional circumstance occurring within days of Royal Assent for the enabling legislation. The frequent resort to this means of support for farmers strengthens the case that the inequities in the current scheme should be addressed. The next section discusses the problems with the policy responses to drought that have been implemented to date. This is then followed by a discussion of our alternative approach.

Problems with the usual approaches

Australian governments have continued to grapple with the problem of developing an appropriate policy response to drought. A number of related issues challenges policy makers:

- the question of the definition of drought;
- the high level of integration between the farm family and the farm business, which means that policy makers need to confront the issue of whether drought support should be directed at the whole farm unit or be limited to the farm business and
- the question of structural adjustment, which has important implications with respect to eligibility for drought support programmes, i.e. whether support should only be available to farmers who are viable in the long term.

For further discussion of these aspects of Australia's drought policy, see Botterill and Wilhite (2005).

There is a further significant issue for policy, the subject of this chapter, which is that of the financing of drought relief. Specifically we ask whether more equitable approaches can be developed.

A critical matter is the recognition that government outlays for drought relief have to be financed in some way and that public sector subsidies are paid for from tax revenue. This means that in a grants based system all taxpayers are contributing to drought relief, and this raises the critical equity point related to farm assets. The vast majority of taxpayers do not own significant wealth-producing assets, meaning that it is likely that most of those paying for drought relief will be less advantaged over their lifetimes relative to the farmers being assisted. The point is essentially the same as that made in Chapter 2 with respect to the inequities associated with no charge higher education systems.

A related but different way of looking at this is also identified in Chapter 2. It is the recognition that all public sector outlays e.g. for universities or drought relief, have an opportunity cost in terms of alternative possible expenditures. Thus for any given level of taxation, dollars allocated to grants based drought relief could be spent instead on social security, or for health, or for income distribution. It is likely that the vast majority of alternative uses of the funds are more progressive than current drought assistance arrangements. In other words, from the point of view of either taxation or spending, grants to drought-stricken farmers are very likely to be regressive in a life-cycle context: they redistribute income away from those with less wealth on average.

Moreover, grants based schemes are expensive. In April 2005, the Commonwealth government announced that it was spending over \$A4 million per week in drought relief (Truss 2005b) and in May 2005 further support was announced bringing total Commonwealth expenditure on the 2004–05 drought to more than \$A2.2 billion (Truss 2005a). It is worth noting that these aggregate figures disguise significant grants to individual farm operators. The average grant received by way of grants for drought in 1994–95 was a little over \$A17,365.

As argued above, the current nature of drought financing is regressive,

and the case for a drought relief subsidy seems to be weak. However, it seems obvious that political considerations imply that governments will continue to want to offer support in some form to drought-affected farmers. The critical issue then concerns the form of this intervention.

In essence, a government providing grants based drought assistance faces unpalatable choices. The first, high levels of grant assistance, is expensive and inequitable with respect to the relative economic circumstances of those providing the subsidy. Second, low levels of coverage mean that there are necessarily a large number of farms in need of help but not receiving any, and as considered in detail in Botterill and Chapman (2004) there will be the arbitrary rules defining eligibility. This last point implies that some properties experiencing drought-related hardship will receive no assistance at the same time that other properties in apparently the same circumstances will be eligible for considerable support.

The following sets out an alternative approach to drought support. In line with recent trends in government policy, it suggests the separation of the farm business from the farm family and as such, focuses only on the support needs of the business. It also accepts the risk management approach underpinning recent drought responses.

The suggested approach offers what are apparently better forms of drought relief under the presumption that drought assistance will remain a significant aspect of agricultural economic policy in the near future. The form of ICL suggested is an alternative potential instrument designed to address some of the equity problems inherent in the current approach. At the same time, as with all ICL policy approaches, it provides some measures of default protection and revenue smoothing, at least in comparison with conventional financing arrangements. This revenue smoothing feature dovetails neatly with other rural policy instruments in place which aim to address the unstable nature of farm revenues and to provide farmers with risk management tools.

7.3 Applying income contingent loans

The advantages of income contingent loans

The approach outlined below for farm drought assistance has been motivated by the view that there are major advantages associated with the use of government based income contingent loan policies. The case has been set out in detail in Chapters 2 and 3 with respect to higher education financing, and is considered further below in a number of additional applications, such as with respect to criminal reparations (Chapters 8 and 9), for the financing of community investment projects (Chapter 10) and housing credits for low-income recipients (Chapter 11).

The basic motivation for HECS and several of the other ICL applications might seem to be a long distance from drought relief, but there are important similarities between these many disparate policy areas. Specifically, the commercial bank financing problems that confront prospective higher education students, athletes, community investment projects and low-income households are arguably also faced in some degree with respect to agricultural credit provision.

That is, under some risky circumstances banks will be unwilling to lend to tide a farm over and/or help finance a farm's recovery. Unlike the case for investments in human capital however, banks will have access to collateral to sell in the event of default; but if the drought persists the bank may believe that the value of the property is not sufficient to cover the risks and transactions costs of the loan. There are arguably then important supply-side capital market issues.

An important additional aspect concerning the access of a farm to commercial credit in times of drought is best considered on the demand side. As argued in Chapman *et al.* (2004a), it might be that farmers are unwilling to take the risk associated with default on a commercial loan, since such default then means the farm, which might have been in the family for generations, being lost through repossession by the bank. In this case the costs to the farmer will far exceed the financial weighting that might be accorded to the transaction by a commercial party. This means that even if a bank is willing to provide additional assistance in times of drought, the lack of default protection inherent in conventional lending could well mean that the farm business is unwilling to take the risk. This is a similar point to that made in Chapter 3 concerning the potential reluctance of prospective higher education students to take government guaranteed bank loans because of the possibility of future inability to pay, thus bankruptcy and the loss of a good credit rating.

Also on the demand side of borrowing commercially in times of drought is the prospect for the farm business of the hardships associated with meeting future repayment obligations. Again, this is the familiar issue of expected future repayment difficulties, and the lack of consumption smoothing inherent in the provision of mortgage-type loans. Below we illustrate the extent to which a drought ICL addresses the problem.

In summary, an income contingent loan system replacing grants based drought relief has the following advantages. First, it means that taxpayer assistance is not regressive. Farmers will have been helped to sustain their businesses when they needed such help, with potentially low burdens only for average taxpayers. Second, because much of the assistance will be repaid, the government will be able to afford to offer support to the vast majority of farmers in trouble. This will avoid the charge and reality of arbitrary rules with respect to eligibility. Third, from the farmer's perspective, the default protected nature of the loan removes the anxiety associated with possible loss of the family farm, and the linking of repay-

ments to capacity to pay means that there is avoidance of an onerous burden on the farm business in the repayment phase.

Adverse selection and a 'top-up' income contingent loan

A concern typically raised with respect to policy is what economists label 'adverse selection'. This is the phenomenon whereby there is a form of self-selection into active participation in a programme with the unfortunate consequence of providing most help to groups least deserving of assistance. An example from the insurance field would be the provision of universal vehicle accident insurance coverage to all drivers, meaning that excessively risky drivers would be subsidised by more careful individuals. In this example the industry attempts to diminish the consequences of adverse selection by having high excess payments for young drivers.

Adverse selection in the context of the application of an income contingent loan to drought relief might take the following form. Some farms, perhaps farms which have been managed poorly, or farms which in the long run might not be economically viable for reasons of location, would be those most heavily subsidised by, and thus most interested in taking advantage of, an income contingent loan. This is because farm businesses likely to experience future poor financial circumstances would benefit the most from an income contingent loan, and in an extreme case might even be able to avoid any level of significant repayment of the debt. It would be in the interests of these poorly performing farms to take as much as possible of an income contingent loan. Adverse selection of this type has the potential to undermine significantly the financial basis of an income contingent loan scheme.

However, it is not just the nature of the take-up of an income contingent loan and what it means for repayments that is at issue. It is also the prospect that an income contingent loan has the potential to subsidise farm businesses with poor long-term prospects. This possibility implies that an income contingent loan could act to inhibit desirable structural change in agriculture, and with arguably considerable and ongoing costs to taxpayers. The issue warrants serious consideration, and a possible solution is now offered.

The implications of adverse selection could be addressed by making access to income contingent loan support dependent on a vetting process motivated by concerns for future economic viability. This vetting process is promoted to help ensure that only farms with expected strong commercial futures would qualify for assistance. This is consistent with the eligibility criteria for the existing interest rate subsidy scheme which is targeted at farmers who have 'prospects of long-term profitability and sustainability' (AFFA 2003, p. 12), but are adversely affected by exceptional circumstances such as severe drought.

The simplest approach would involve an income contingent loan being treated as a top-up to additional bank credit, and might work as follows. Given the establishment of an income contingent loan scheme, a farm business approaches its commercial bank for a loan, or extension of existing credit, in times of financial need associated with exceptional drought. The scheme is made operative with the understanding that the government will provide income contingent loan financial resources in proportion to the commercial credit gained. For example, a ratio of 2:1 might be the rule, meaning that if the bank provides \$A20,000, the level of income contingent loan assistance would be \$A40,000. The farm then has access to an additional \$A60,000 in total, one-third in the usual form of commercial credit and two-thirds to be repaid as an income contingent loan.

A significant advantage of a top-up approach is that it would limit the extent to which adverse selection could operate. In the above example, the bank would still be concerned with the risk of non-payment of the \$A20,000, meaning that long-term economic viability matters, meaning that businesses with expected poor prospects would not be able to qualify for any public sector help. However, because the income contingent loan could be used initially to pay interest on the commercial loan, those farms qualifying would be more likely to repay the bank loan without duress and arguably be in more financially propitious circumstances in the longer term. Income contingent loans for drought relief can be designed to limit default risk not just for borrowers, as in HECS, but for commercial lenders as well.

The ratio suggested above is illustrative only, and would be an important parameter for policy discussion. It might be that if the ratio is too generous in terms of government support, that the vetting process becomes ineffectual. This would be the case if the bank is able to minimise all its own risks because the top-up ICL might cover all the commercial repayments. There might also be a case for the government being directly involved in assessing the suitability of drought ICL applicants, such as is suggested for the distribution of ICL assistance for social investment community projects in Chapter 10. All these issues are critical matters for the policy development process.

A government could decide that adverse selection is not a major issue in the design of an income contingent loan for drought relief. In this situation there would be no top-up and thus a more widespread availability of the facility. However, there are sound reasons to canvass the need for some form of vetting, and the top-up suggestion seems to achieve this through some level of commercial bank involvement.

Implementation issues: the repayment threshold

The suggested scheme could include a threshold below which no repayments of the ICL debt would be required, which is the way in which HECS

operates. However, there are several reasons why it might be preferable not to have a repayment-free threshold for a farm business ICL. The most important of these is that farm receipts reflect to an important extent farm size. This means that if repayments were not required for revenue below a certain level the policy might excuse all repayments from small farm units (even in periods in which a significant proportion of small establishments are not experiencing economic hardship). Since an ICL requires contributions when debtors have the capacity to pay, a threshold would nullify to some extent this advantage of the ICL. It would also have an unfortunate behavioural characteristic of systematically encouraging the participation in the scheme of those farms expecting to have relatively low gross revenue in the longer term, thus undermining the prospect for the government of high levels of collection.

Setting a threshold below which farms do not need to make payments against the debt also complicates the administration of the scheme in terms of the timing of payments. At a flat rate of repayment, farmers with 'lumpy' incomes will not overpay their loans in high income periods. The introduction of a threshold means that potential overpayment becomes a possibility, raising the issue of the frequency and timing of drought loan repayments.

Implementation issues: on what basis is the debt collected?

A critical issue of implementation for the effective operation of an ICL for drought relief is the appropriate income, revenue or profit reference for the collection of the debt. There are several possible options with respect to the measurement of the capacity of a farm business to pay an ICL. One would be the farm's taxable income.

The true financial situation of the family farm is difficult to determine due to the blurring of business and family expenditure. Johnson explains:

First many household expenditures such as housing costs, may have been paid wholly or in part by the business so there is an unidentified in-kind source of income; second many businesses may receive tax discounts on expenditures that apply to their households as well as to their business; third businesses may have the opportunity to average income over several years so that negative income may be recorded, and finally the structure of the business may involve more than one income unit making attribution of income difficult.

(Johnson 1996, p. 53)

These perquisites of farming combined with the opportunities within the tax system for the self-employed to find deductions mean that taxable income is a misleading indicator of actual income (Vincent 1976).

The bottom line is that an income contingent loans scheme for drought relief should not use taxable income as the basis for collection of the loan. Instead it would appear to be much more preferable to use gross revenue and to impose a flat percentage levy in periods following the borrowing. Gross revenue is already declared by farmers on the Business Activity Statement for Australia's Goods and Services Tax purposes, and is thus available on a quarterly basis.

The use of gross revenue as the basis for loan collections is not ideal, since in some periods a high level of total revenue is not necessarily indicative of a high level of farm material welfare; for example, in difficult times involving the sale of assets. Consequently, to help insure against such exigencies, it is proposed that the levy be a low proportion of gross revenue only, perhaps a maximum of 5 per cent.

A second major issue concerns the rate of interest on such loans. One approach would be to have the real rate of interest set at zero; that is, adjusting the debt only for inflation. Compared with a real rate of interest, the scheme would have two properties: insurance against the size of the debt escalating in times of continuing adversity and an implicit subsidy from taxpayers as the government would be losing the opportunity cost of the funds for each period in which the debt remained unpaid.

Alternatively, the scheme could be designed in a way that implicitly imposes a broad rate of interest. An illustrative example is that farmers borrowing say, \$A10,000, could agree to repay, say \$A13,000.² Given that apart from this there would be no additional real rate of interest, the parameters could be designed in such a way that the present value of the monies recovered mean that ultimately there is around no cost to the budget. The extent of the subsidy is, however, ultimately a decision of government.

Third, a trust fund could be set up in which loan repayments were hypothecated to be used only to help finance additional agricultural credit outlays. Over the longer term this arrangement has the advantage of demonstrating the net benefits to government of moving away from a grants based system towards a more equitable and affordable drought assistance system.

Finally, such a scheme need not necessarily be financed directly from the budget. That is, it might be possible and useful to have the revenue provided by commercial banks, with the government contracting to repay the financial institution in the knowledge that the revenue will eventually be forthcoming to the public sector from farms.³

7.4 Repayment estimates

The proposed scheme has been modelled using data from the Australian government's research bureau, the Australian Bureau of Agricultural and Resource Economics (ABARE). With respect to farm business revenue,

the data have been arranged in quintiles, and nominal receipts have been adjusted to 2000–01 dollars with the use of the Consumer Price Index.

In order to approximate actual drought conditions, the modelling used the agricultural revenue experience of 1994, which was a major drought year in eastern Australia, thereby providing a good representation of the situation of farms as they recover from a large drought. Thus revenue figures from years 1995 through 2002 were used for, what are labelled in the exercises, years one to eight and data from years 1989–93 were used for the years labelled nine to 13. To allow simulations over a longer period the years 14–25 are repeats of years zero to 11. We have used weighted averages of six different types of farm, in terms of industry, and these are described in Kelly *et al.* (2004).

Explanation of the ‘up-down’ and ‘down-up’ categories in the model

In many of the simulations we simply take the experience of farm business by gross revenue quintile. But this approach implicitly assumes that farm business revenues do not change relatively over time, and this is unrealistic. Moreover, part of the motivation of the exercises is to show the extent of the revenue smoothing advantages of an ICL compared with a bank loan, and this cannot easily be done with a background of relative stability in the revenue streams of farm businesses.

Given the above issues, we have included in the modelling two hypothetical categories of farm business revenue in addition to the five assumed stable revenue quintiles. These are known as ‘up-down’ and ‘down-up’ categories, and are designed to remove the assumption, implicit in the quintile categories, that a farm’s performance does not change relative to other farms over the entire period of the simulation. They are defined as follows.

The ‘up-down’ category tracks the revenue position of a farm that starts at the bottom half of the lowest quintile of the distribution and improves its performance each year until it reaches the top of the distribution. Its position then deteriorates until it is back at the bottom. This results in the ‘up-down’ farm business going through around two and a half cycles of the distribution over the time period modelled. The ‘down-up’ category models the farm business revenue in the opposite position (i.e. a mirror image).

Figure 7.1 illustrates the revenue profile of an ‘up-down’ farm business compared with the performance of a median farm which does not alter its relative position in the distribution. This demonstrates very large potential variance in farm revenue and, although likely to be an extreme case in terms of actual farm revenue experience, it serves to highlight a number of advantages of an income contingent loan for drought relief, as described below.

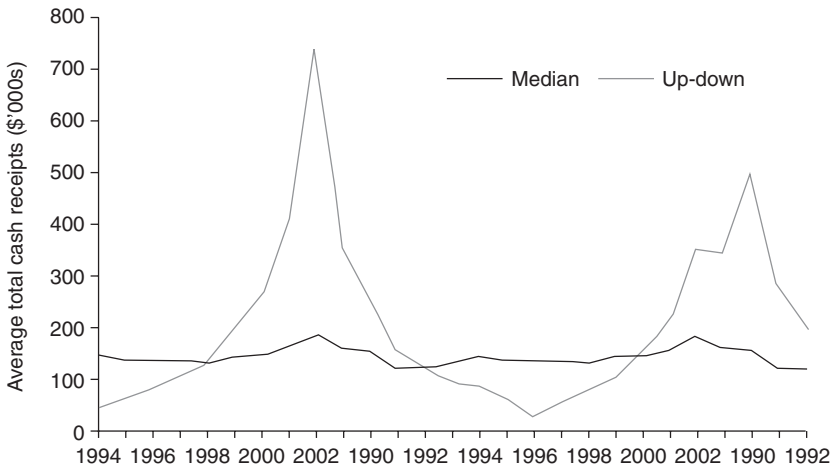


Figure 7.1 Gross revenue for 'up-down' and median revenue categories (\$A(2001)) (source: Kelly *et al.* (2004)).

The data of Figure 7.1 show that in real dollar terms median farm revenues fluctuated quite a lot over periods with quite different drought experiences, from around \$A100 million per annum in 1992 to about \$A200 million in 2002. But there are clearly very significantly much greater differences in farm revenue for farm businesses in the up-down category (and this will necessarily also be the case for those in the down-up simulations). For up-down farms gross revenue fluctuates between around \$A20 million per annum in 1996 to \$A800 million in 2002. Our hypothetical high variance example looks well-suited, albeit extreme, to illustrate the importance to our exercises of different forms of loan assistance.

Rates of repayment, the amount and allocation of the loan, and the rate of interest

As indicated above, it is proposed that the repayment rate be set at a very low level given the crude nature of gross revenue as an indicator of farm welfare. Our modelling has therefore used repayment rates of 2 and 5 per cent of gross revenue per annum to assess the impact of a drought income contingent loan on both government revenue and the farm business.

In order to present a reasonably realistic picture of how a drought income contingent loan might operate, we have based the modelling on a loan of \$A50,000 (Kelly *et al.* 2004; also consider examples involving a doubling of the debt to \$A100,000). The \$A50,000 figure represents a more generous injection of finance into drought-affected farm businesses than the existing scheme has generally provided in practice, although some

farmers have received grants as high as \$A70,000 (Botterill and Chapman 2004, p. 14).

We have also assumed that farm businesses in all quintiles will receive \$A50,000. It is more likely that high revenue farmers will access larger ICLs than smaller operations, partly due to their greater need but also as a result of the screening process involving the banks outlined above. As a result, our simulation has likely underestimated repayments and therefore overstated the cost of the scheme to government.

The examples following assume that no real rate of interest rate is applied to the loan meaning that there is an implicit subsidy from taxpayers. The government could choose to apply a real rate of interest rate (or similarly, a surcharge) on the loan, in which case the repayment rate would be somewhat slower and the present value of the debt collected higher. While the level of subsidy or interest charged is a matter for policy decision, Kelly *et al.* (2004) show a range of repayment estimates for different interest rate scenarios.

Results: total proportions repaid

Figure 7.2 illustrates the repayment of the total debt to government repaid for both 2 per cent and 5 per cent of farm revenue per annum of the hypothetical ICL described above; that is, \$A50,000 to all farms in Year 0. The data reveal that after ten years, the government can expect farms to have repaid around 60–80 per cent of the amount lent, depending on the rate of repayment. After about 20 years the proportion repaid at the 2 per cent

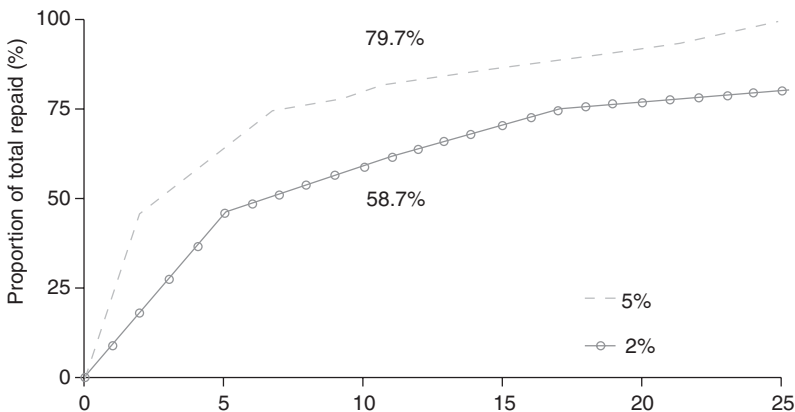


Figure 7.2 Proportion of \$A50,000 loans repaid over time, 2 and 5 per cent payment rates (source: Kelly *et al.* (2004, p. 7)).

Note

The percentages shown are the proportions of the amount lent that has been repaid after ten years.

rate has bottomed out at about 75 per cent, but is over 90 per cent and still rising for the 5 per cent repayment rate.

Results: distributions of loan repayments by farm revenue quintiles

As stressed, a major advantage to farmers of an ICL is that it is tied to capacity to pay. Figures 7.3 and 7.4 show the differences between farm repayments for businesses in each of the gross revenue quintiles for repayment rates respectively of 2 and 5 per cent.

The data show that those in the top quintile (Q5) will repay a \$A50,000 loan within two to five years, depending on the repayment rate, while the median revenue farm will take seven to 17 years. For up-down and down-up simulations the figures show that the loans are repaid in full in 15 and 11 years respectively for the 2 per cent repayment rate, and eight and three years respectively for the 5 per cent repayment rate.

Revenue smoothing benefits of an income contingent loan: the up-down case

One of the key features of this proposal is the income smoothing effect of the ICL. The linking of payments to revenue means that repayments do not constitute a proportionate burden on the farm business as is the case with a conventional bank loan. Using only the 'up-down' case, Figure 7.5 compares the impact on farm after-loan revenues of a standard fixed repayment loan with that of an ICL, definitionally linked to capacity to pay.

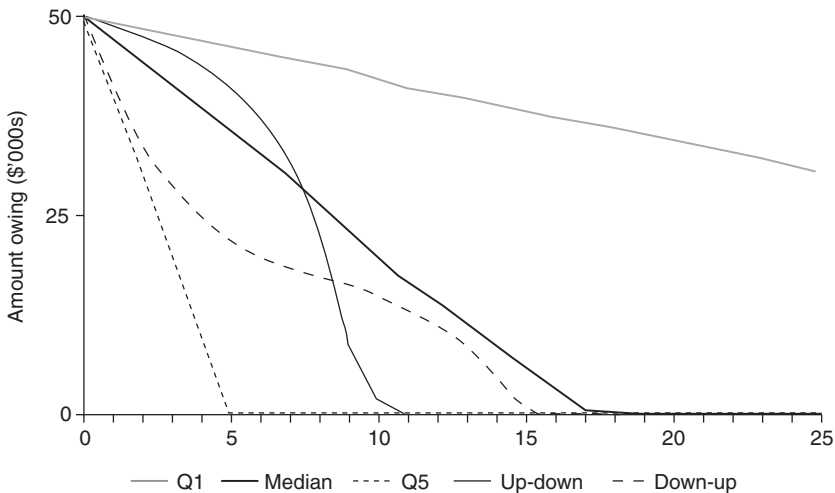


Figure 7.3 Amount of a \$A50,000 loan repaid over time by farm revenue, 2 per cent repayment rates. (source: Kelly *et al.* (2004, p. 9)).

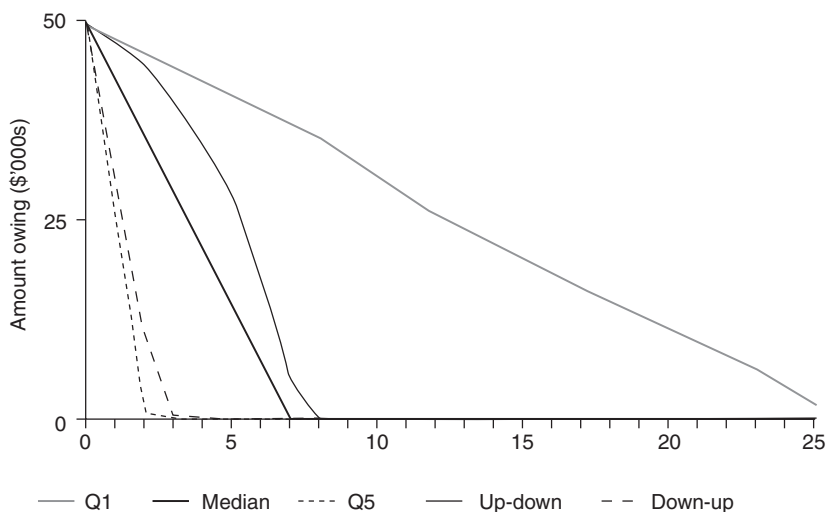


Figure 7.4 Amount of \$A50,000 loan repaid over time by farm revenue, 5 per cent repayment rates (source: Kelly *et al.* (2004, p. 9)).

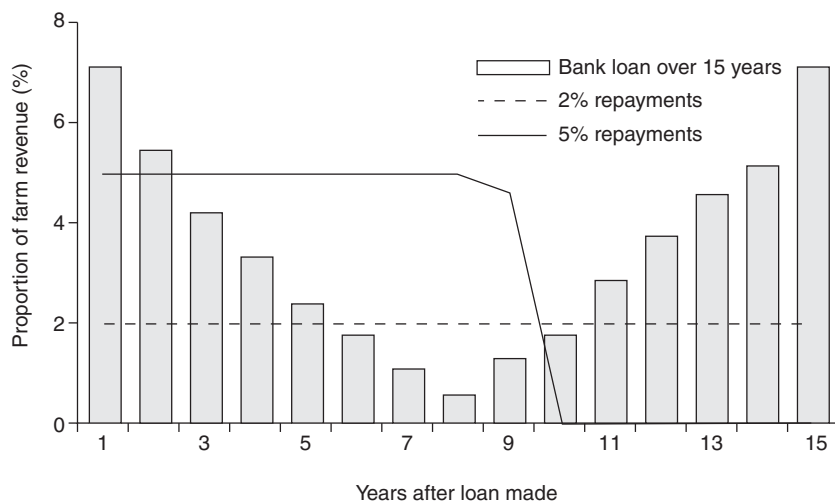


Figure 7.5 Proportion of annual gross farm revenue required to repay ICL and bank loans for 'up-down' (source: Kelly *et al.* (2004, p. 12)).

The results show that with the bank loan there is considerable variation in the proportion of farm revenue that needs to be allocated to its repayment, from over 7 per cent in low-income periods, to less than 1 per cent when revenues are at their highest. ICLs on the other hand keep proportions fixed at either 2 or 5 per cent, with the loan adjustment process to revenue variations coming in the form of the time taken to repay. At a 5 per cent repayment rate the loan is fully repaid in ten years, while it takes 15 years for the bank loan and over 20 years for the ICL with a 2 per cent repayment rate.

It should be noted that the average farm business debt for all broad acre industry farms in 2001–02 was \$A195,740 and for dairy industry farms it was \$A298,350 (ABARE 2003, Table F, p. 53 and Table F16, p. 79), suggesting that the fluctuating impact of existing repayment obligations on the farm would dwarf the impact of an ICL on cash flow.

Revenue estimates in summary

The simulations presented show a significant range of outcomes with respect to the time stream of repayments of an income contingent loan for drought relief. In some scenarios involving a 5 per cent annual repayment rate, a very significant proportion of loans would be repaid in full in less than ten years, but this is not the case for the lower repayment rate of 2 per cent. This suggests that the appropriate repayment parameter would be at least 2 per cent of gross revenue per annum, in order to minimise the costs for the budget. The effects of different levels of subsidy (including a subsidy of approximately zero), shown in Kelly *et al.* (2004), illustrate a wide range of outcomes, and these are useful input for policy debate.

It should be emphasised that the simulations are for a defined set of parameters, all of which should be subject to further variation in the interest of additional information for policy debate. In particular we note the assumption that farms with low expected revenues are provided with loans of equivalent levels to farms with high expected revenues. Since members of the latter group are more likely to take higher loans, and repay quicker, to some extent this aspect of the exercise biases the result against finding relatively quick repayments. On the other hand it might be the case that farms with very high expected revenues would be less inclined to take advantage of the availability of an ICL suggesting a potential bias in the opposite direction.

7.5 Conclusion

This chapter has argued the case for a top-up income contingent loan for Australian drought relief. The scheme is a simple, cost-effective means for delivering drought relief to farm businesses. Its strengths seem clear.

- i It is consistent with the National Drought Policy which has been in place since 1992 and which enjoys broad bipartisan political support.
- ii It builds on an approach of self-reliance and risk management, allowing farmers to manage the risk of drought over the lifetime of their involvement in agriculture.
- iii It addresses many of the equity issues associated with existing policy, i.e. between farmers either side of the boundaries delineating drought and non-drought areas, between good managers and poor managers, and between farmers and the non-farm community.
- iv It is likely to be a much less regressive form of assistance than the current drought grants, since the higher subsidies are provided by taxpayers who are on average less wealthy than the farm businesses advantaged by the scheme.

The estimates of the time stream of repayments suggest that a rate of repayment of at least 2 per cent, and preferably 5 per cent, would be necessary for the scheme to be acceptable in budgetary terms. Our exercises showed that with the 5 per cent rate 80 per cent of outlays would be returned in ten years. It is also apparent that the scheme has the important capacity to deliver significant revenue smoothing outcomes compared with normal bank financing.

An ICL for drought relief has the potential to provide governments with a fair and affordable alternative to the existing grants regime. There is a vetting issue, traceable to adverse selection, and this supports an approach using top-up loans. The critical point is that if the top-ups are repaid depending on the revenue of the farm business, as with all other ICL applications, the approach provides both default protection and revenue smoothing benefits.

Notes

- 1 This chapter is based on Linda Botterill and Bruce Chapman (2004) 'Towards more equitable and efficient drought policy', *Australian Journal of Public Administration*, 63(3): 10–19. We are grateful to the publishers for granting permission for its use.
- 2 This is precisely the way in which the higher education financing scheme, FEE-HELP, proposed as an addition to HECS in 2005, works. For those students choosing to repay later there is a surcharge of 25 per cent on the debt (for discussion, see Chapter 4).
- 3 This is the way the Australian student extension, the AUSTUDY Loans Supplement, was implemented in 1994 (see Chapman 1992).

8 Criminal reparations

Using the tax system to collect fines¹

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8.1 Introduction

There are significant problems with the current system for the imposition and collection of fines for criminal offences in Australia and in other countries. Some of the major difficulties are as follows.

First, in some cases, the fines imposed may not be a true reflection of the severity of offences. Indeed, in some cases fines may not be imposed even when they are apparently warranted. A reason for this is likely to be the assumption that offenders could not pay the level of fine required to reflect the severity of the offence.

Second, and related to the above, the imposition of 'just' fines may be associated with high default rates, resulting in both high personal costs for offenders and significant social costs. All parties suffer in the event of default: the offender because default may result in loss of property or personal freedom and taxpayers who not only forego the revenue from the fine but must also fund alternative default penalties such as community service or imprisonment.

Third, there are high official costs associated with fine default. Non-payment requires visits by sheriff's officers or police and extra court or administrative proceedings. Following up the non-payment of fines is expensive.

In short, the current system for imposing monetary penalties and ensuring that they are paid is significantly flawed. This chapter suggests an alternative, involving the notion that fines could be paid using levies on offenders' future incomes. It is a further application of income contingent loans (ICLs) to public policy. Such a policy might be labelled the 'Fine Enforcement Collection Scheme', or FECS.

8.2 Background issues and the nature of the problem

The desirability and practicality of an enhanced role for fines

At present, fines are most commonly used as a sanction for minor offences, such as traffic infringements and various administrative misde-

meanours. Fines may also be used as a sentence for criminal offences such as burglary, theft of various sorts and assault, particularly where the person is a first offender.

Fines are generally small, averaging around \$A600 (based on NSW Magistrates Court data for 2001), which is less than one week's average weekly ordinary time earnings for Australian adults, estimated at \$A734 in 2003 (ABS 2003a). Although fines would normally be inappropriate for serious criminal offences, such as murder and armed robbery, there is a large range of intermediate offences for which substantial fines might be appropriate.

Sentences of imprisonment for short terms (less than a year) are commonly imposed, but are widely recognised as unsatisfactory. As the UK Attorney General (UK Home Department, 2002, Para 5.22 and p. 102) notes: 'short-term custodial sentences ... are usually ineffective. ... Short spells in prison also increase the chances of re-offending and these prisoners are reconvicted at a higher rate than those who serve longer sentences.'

As part of its 'reducing imprisonment strategy', the Western Australian government proposes to prohibit sentences of six months or less. That government believes that short sentences serve no useful purpose and that it is more appropriate to manage such offenders in the community. The *Sentencing Legislation Amendment and Repeal Act 2003* (WA) removed all sentences of six months or less from the statutes, and increased the availability of pre-sentence community based orders and intensive supervision orders.

The main alternatives to short terms of imprisonment are periodic detention, intensive probation of various sorts, home detention and community service orders. All of these are usually cheaper than imprisonment, but are nevertheless more costly to implement than fines, and are frequently breached.

With an effective collection system, fines, possibly larger than those commonly imposed at present, could represent an alternative or addition to existing sentencing options for offences of intermediate seriousness. They meet a number of the standard objectives of sentencing, including retribution, deterrence and denunciation, and may be used to finance restorative and reparative measures. Unlike most of the available alternatives, they do not involve a net financial cost to the community. However, these theoretical advantages are not realised under the current system of fine enforcement.

Collection rates and costs

The major problem with the current system of fine enforcement is that it is not effective. The collection rate, that is, the amount collected by the courts expressed as a proportion of the amount imposed, is low in most cases.

Freiberg and Fox (1994) examined court fines imposed in Victoria in 1992 and found that the collection rate was only 44 per cent. The lowest collection rates were strongly associated with offences which indicate fraud or dishonesty, poverty or some form of secondary deviance.² The least compliant offenders were those who committed offences involving fraud, failure to provide information to the authorities, unlicensed driving, driving while disqualified and having unregistered or unroadworthy vehicles. These are offenders who are least likely to be located through motor vehicle records, most likely to provide incorrect information to authorities and most likely to move residence frequently.

The collection of fines has high enforcement costs. For example, in Victoria, enforcement action can add another \$A64 to a \$A100 fine: courtesy letter \$A14.60, registration fee \$A32.00 and enforcement certificate \$A17.40. If a warrant is issued, a further \$A79 is added (costs as at 1996) (Victoria Public Accounts and Estimates Committee 1997). A paradox of fine enforcement is that enforcement action may steeply increase the amount required to be paid which, in turn, may render it more probable that the fine will not be paid. The poorest offenders, who are most likely to default under existing procedures, are likely to suffer disproportionately from high-cost enforcement strategies.

Enforcement mechanisms

Existing mechanisms for the enforcement of fines are unsatisfactory. Imprisonment in default of payment has been criticised as being unjust, unfair to poor offenders, dangerous to vulnerable offenders, expensive, administratively inconvenient and disproportionate in its effect on indigenous offenders (Redmond 2002; Whittaker and Mackie 1997). Though community work is considered more constructive and less expensive than imprisonment, programme costs have risen as the number taking up this option has increased. The ACT Treasury (2003) cites national figures showing that the cost of community corrections had risen 11 per cent in the three years to 2001–02. High breach rates create further problems for programme managers (Wise 1993).

The sanctions of suspension or cancellation of driver licences are the most rapidly growing means of enforcing fines (Storey 2001). They are used in almost every jurisdiction to enforce vehicle-related fines and in some jurisdictions to enforce fines generally. Such suspensions or cancellations may be imposed by courts or result from administrative action. While much success is claimed by enforcement authorities, there is evidence that a significant number of offenders violate the sanction and that it results in unlicensed (and uninsured) drivers being on the road (Storey 2001). It also tends to raise the penalties for default, as the punishment for driving whilst disqualified is severe when compared with standard penalties for fine default.

The civil model empowers the criminal courts to use one or more of the civil powers of the court to enforce monetary penalties. These include warrants of seizure and sale, attachment of debts and attachment of earnings. Attachment of income or debts is widely available both for civil debts and fine enforcement and is closest to our proposed Fine Enforcement Collection Scheme. However, under current arrangements, administrative costs are high, and are largely borne by employers. Where property is seized this can adversely affect other family members.

Fines and capacity to pay

Under current sentencing procedures, fines are normally set as fixed financial penalties determined by the gravity of the offence, although the offender's capacity to pay may be taken into account in determining the level of fine that is imposed. Current common law and statutory provisions permit a court to impose a lower fine than that which might otherwise be appropriate for the offence if the offender is unable to pay the full penalty. However, there is no systematic basis for relating penalties to capacity to pay. In many cases where the usual fine imposed for a given offence represents a severe financial burden for a low-income offender, the fine imposed on a high-income offender for a similar offence may be somewhat larger, but is still little more than a 'slap on the wrist'. However, it is commonly argued that a fine heavier than that warranted by the gravity of the offence should not be imposed upon a wealthy person, even though this might achieve an equal correctional impact (Fox and Freiberg 1999).

The courts may also take offenders' means into account by allowing time to pay, by permitting payment by instalments or, ultimately, by waiving fines where offenders are unable to pay.

Recent Irish research illustrates the problem of lack of means. Of those imprisoned in Ireland for fine default, two-thirds were in 'basic' poverty, lacking key items essential for ordinary life, while all of them suffered secondary deprivation (Redmond 2002). An English study identified the major reasons for non-payment as other debts and changed financial circumstances, with the vast majority of non-payers not having a job (Whittaker and Mackie 1997). A study of 259 English fine defaulters found that 77 per cent of those whose employment status could be ascertained were unemployed (Moore 2003). Given the high proportion of defendants in criminal courts who are unemployed, dependent on social security, poor or otherwise disadvantaged, this is an endemic problem.

A more fundamental problem arises because the assumption that a particular monetary amount is an appropriate penalty for a given offence is inconsistent with the principle of equal impact. A fair criminal justice system should attempt to avoid imposing sanctions that have unequal effects on offenders with differing resources (Fox and Freiberg 1999).

A comparison of the sentencing principles used for fines and for prison

sentences suggests that no consistent principle of equal sanctions is applied. In general, and with the qualifications noted above, fines and other financial penalties are determined by the gravity of the offence, and independently of the offender's financial resources. By contrast, the financial impact of a given prison sentence, measured in terms of income foregone, varies according to the earning capacity and other circumstances of the offender, and is greater for those with higher income. Hence, the view that monetary penalties should be set independently of the offender's financial resources appears to imply that prison sentences should be shorter for those with higher earning capacity, thereby equalising the financial impact.

This above conclusion would not command broad support. It appears, therefore, that there is a logical inconsistency between the equity principles used in imposing fines and those used in setting terms of imprisonment.

In a number of European jurisdictions this equity problem is dealt with through what is known as a 'day fine' scheme, which involves the setting of penalty units expressed in terms of days of income for the offender (NSW Law Reform Commission 1996; Irish Law Reform Commission 1991; Vera Institute 1996). This idea has not found favour with Australian legislatures, primarily because of difficulties of access to tax records for verification purposes and the dislike by the courts of variable or sliding scale forms of penalisation. However, the tendency of courts to impose lower fines on those of limited means acts as an *ad hoc* and discretionary form of day fine. The system of income contingent fines proposed in this chapter does not imply the imposition of penalties that are proportional to current or future income. However, such a system would increase the flexibility of sentencing in this respect.

Finally as background to a discussion of the use of the tax-welfare system to collect some criminal reparations it is worth noting that in the United Kingdom courts can require regular deductions from social security pensions or benefits for the payment of fines (Whittaker and Mackie 1997). A number of problems have been encountered with the UK scheme, though none appear insurmountable. First, the amount deducted is small, the maximum being £2.70 per week (about \$A7). Even so, this would permit collection of a fine of £130 or about \$A350 over the course of a year. Second, some magistrates felt that the payment mechanisms removed the responsibility for paying the fine from the offender, and that this lessened the impact of the fine as a punishment; but against this it can be argued that increased compliance can make the punishment more credible. And third, the UK scheme is limited because it cannot be used if there are already three other deductions from social security payments. Many offenders found themselves in such a position, with numerous debts and outstanding utility bills.

8.3 Applying income contingent loans

Income contingent loans in theory and practice

Chapters 2 to 4 emphasise that income contingent loans (ICLs) provide a mixture of consumption smoothing benefits and insurance against the uncertain outcomes of risky educational investments. The main benefit of these payment schemes, explained fully in Chapter 3, derives from the fact that they offer a form of insurance against the risks associated with having payment obligations when future incomes are uncertain. That is, protection against default and the reduction of payment hardships compared to other debt are the critical advantages of ICLs.

For the possible institution of FECS it is relevant to note that apart from the Higher Education Contribution Scheme (HECS) there is another instance of income contingent payment obligations in Australia, and it is more relevant in some ways to the prospect of an income contingent payment of fines. It is known as the Child Support Scheme (CSS) and is operated in Australia by the Department of Family and Community Services. The scheme began in 1988 and facilitates the collection of child maintenance payments from non-resident parents.

The CSS differs from HECS in that there is no fixed debt to be discharged. Rather the non-resident parent's obligation is to make a contribution to the support of children aged less than 18 and is determined on the basis of an assessment of both parents' means; like all income contingent financial instruments an individual's capacity to pay is the essential characteristic.

A more significant distinction relates to the group affected by the schemes. Since the CSS is potentially applicable to all non-resident parents, it includes parents with a wide range of income sources, including social security payments. By contrast, HECS payments are made only by employed former university students.

The administrative requirements for the efficient collection of HECS and CSS payments are straightforward, even if they did not appear to be so at the time the schemes were first proposed. This is best understood through an explanation of the processes involved in the recording and collection of the debt. There are important lessons for the administration of an income contingent fines system from the arrangements involved in existing income contingent loans schemes.

The discussion in Chapter 4 illustrated that the collection of HECS debt is administratively straightforward, requiring students to have their debts recorded in the Australian Tax Office with repayments then being deducted with rates of payment contingent on future incomes. In 2005 the first income threshold of repayment is about \$A35,000 per annum, and a typical graduate's debt would be of the order of \$A20,000.

The CSS collects a larger proportion of income from a more diverse

range of payers, of whom there are currently around 700,000. The median taxable income of CSS payers was \$A28,038 in 2000–01, whereas the average starting salary for graduates was about \$A35,000. Moreover, graduates typically experience rising incomes over the period during which they repay their HECS liability, so that the difference between the two groups is greater than this comparison indicates.

The amount of child support collected for a single child is 18 per cent of adjusted income, calculated to provide an implicit living allowance for the payer, up to a maximum of about \$A18,000 each year. Payments increase with the number of children, up to a maximum of 36 per cent of adjusted income. Maintenance payments may be collected from pension and benefit payments at a maximum of \$A10 per fortnight. A similar maximum applies to payers with a taxable income below about \$A15,000.

The CSS also differs from HECS with respect to the way in which liabilities are incurred. Whereas HECS obligations are incurred voluntarily (even if not all students accept the fairness of the payments system), CSS payments typically arise from relationship breakdowns and are frequently the subject of continuing disputes. Not surprisingly, these characteristics are reflected in collection costs and default rates for CSS payments that will be higher than is the case for HECS, and have been estimated to be around 14–15 per cent (AGD 2002) of each dollar collected.

How FECS might work

Consider an illustrative example. Imagine that a person is convicted of a criminal offence, for example, an assault or property crime, entailing payment of a substantial fine. The offender would be given the option of paying immediately. Alternatively, if the offender chooses, the payment obligation could be deferred, in which case payments are based on future income with set percentages of the debt being collected through the tax system.

Those taking the ‘pay-later’ option would be required to provide their Tax File Number, and the fine obligation would be recorded in the tax file by the Australian Taxation Office. The use of Tax File Numbers would obviate many of the problems bedevilling the present system. An example is the provision of false or out-of-date addresses. In the United Kingdom, 96 per cent of the write-offs for fines in 1997–98 were due to an inability to trace or contact the defaulter (UK Select Committee on Public Accounts 2002, para 22). Under the proposed scheme, itinerant offenders could be traced through their tax returns or social security payments rather than their ever-shifting abodes, and this would apply wherever they were in Australia.

For offenders in wage or salaried employment the employer would deduct payments in line with the parameters set by government, in the same way as currently happens with existing income contingent loans. An offender would be able to repay all or part of the debt at any time.

If it is considered important that the courts receive fine payments, the government could pay the fine for the offender at the time it is imposed. To make sure that the costs for the government are covered, and assuming that a proportion of debts are not recovered, it might then be necessary for the government to impose a real rate of interest on the debt, or to have a surcharge for those choosing to repay later, as operates with HECS. That is, there is a real discount for an up-front payment of HECS, which effectively in financial terms is the same thing as a surcharge.

The question of interest rates and the possibility of a discount for early repayment is an important design issue now considered. Although it would be appropriate to adjust fine debts for inflation as happens with HECS (see Chapter 4), the objectives of the scheme may not be well served by the accumulation of interest obligations in addition to the original debt. However, it might be appropriate to offer a discount for immediate payment, as is the case for HECS (again, see Chapter 4). As has been discussed, this arrangement constitutes an implicit interest rate on the obligation, but would help ensure that the additional real cost of the deferred option was bounded by the amount of the discount. As well as covering the government for its direct payment of the fine, an effect of this approach would be that offenders with low incomes, and therefore long repayment periods, would pay less in present value terms than offenders with higher incomes. Note that, unlike a day fine, there is no requirement to predict income in advance.

Comparison with garnishment

A proposal for income contingent fine repayments may be compared with various forms of garnishment of earnings currently available for the collection of various debts. Typically garnishment requires a specific order for the collection of a fixed amount from each pay, which would be paid by the employer to the party to whom the debt is owed. Such procedures were sometimes used for child support payments before the introduction of the CSS. However, because it requires administratively complex and case-specific arrangements, garnishment has been used only rarely.

More generally, there is provision for payment of fines by instalments. However, these require positive action on a regular basis by the offender, which often creates difficulties both for offenders and for those charged with collecting the fines. If the offender fails to make the required payments, the problem of collection falls to the sheriff, whose resources are considerably less than those of the Taxation Office.

By comparison the proposed scheme is income contingent and does not wholly depend upon one employer. It is a more flexible system which is embedded in a broader revenue collection mechanism.

A significant problem with garnishment is that substantial private information must be provided to the employer if the payment is to be

collected. If FECS were introduced as a scheme similar in design to, but separate from, HECS and CSS, it would also require the provision of information to employers in registration for tax collection under the pay-as-you-earn system. Privacy concerns could be addressed in part by allowing offenders a period of grace in which to pay the fine, after which the employer would have to be informed of their obligation to deduct the debt.

Moreover, it would be administratively feasible for the relevant information to be held by the Taxation Office, which could advise employers of the rate of deductions required for an individual based on their Tax File Number. If the use of income contingent repayment mechanisms is expanded, it would make sense, in administrative terms, to integrate a range of repayments into a single adjustment to basic tax rates, rather than requiring employers to make multiple adjustments to standard rates. If this procedure were adopted, privacy concerns would be mitigated.

Application to social security payments?

An important issue is whether the scheme should be extended to allow deductions from social security payments, which are the main income source for many offenders, to be used to repay fines. As noted above, courts in the United Kingdom can require regular deductions from social security pensions or benefits for the payment of fines (Whittaker and Mackie 1997).

In Australia, deductions from pensions and benefits have not been favoured, for a number of reasons. First, there is the problem that pensions and benefits are Commonwealth responsibilities, but fines are mostly imposed in relation to breaches of State law. Second, it has been considered that the amounts that could be recovered in this way might be too small to be significant. Third, there is also an aversion to this technique because it runs counter to the prevailing ethos behind the provision of pensions and benefits, which are regarded as basic entitlements.

The second and third objections are inconsistent with the acceptance of compulsory deductions from pensions and benefits in relation to child support obligations. In this case, the collection of small amounts is justified, and the fulfilment of obligations to society overrides any assumption that the full benefit is a basic entitlement. The question is considered further below in the context of a comparison of different repayment arrangements.

Compliance issues

Since the target population for FECS consists of people who have failed to comply with the law, it is evident that compliance will be a challenge. A range of non-compliance problems arise with the general operation of the

taxation and social security systems of which the most important for present purposes is that of undeclared work for cash payments, often using false names. Such work arrangements are particularly prevalent when employers themselves are involved in illegal or marginally legal activities, and it seems likely that the FECS target population would often work in activities of this kind.

Other problems with tax compliance include the fraudulent use of tax minimisation devices and exploitation of the self-assessment system for false deduction claims. Although problems of this kind cause serious losses of tax revenue, they do not seem likely to be a major problem for FECS. These avenues of non-compliance are primarily available to high-income earners, whereas most offenders are low-income earners. For high-income earners subject to penalties under FECS, the risks associated with illegal or doubtfully legal tax minimisation would be enhanced by the possibility that additional penalties would be imposed for fine default.

Since compliance with the tax and social welfare systems is imperfect, and the target group for FECS is particularly prone to non-compliance, it seems likely that a scheme such as FECS will experience significant non-compliance, and also significant costs of enforcement. In particular, it might be argued that some very poor criminals would have their punishments deferred, and in some cases, avoided altogether.

However, the relevant comparison is not an ideal of perfect compliance, but the performance of the existing system of fine collection. As noted above, this system achieves compliance rates of about 50 per cent, with high administrative costs relative to the amount collected, despite the employment of arguably disproportionate responses such as property seizure or loss of driving licence. No system is likely to achieve total compliance. At least the FECS system could allow the recovery of fines from offenders once their circumstances permitted it. However the criticism is valid to the extent that the scheme is likely to be more successful in recovering outstanding fines from those with fluctuating incomes rather than the perennially poor.

A related issue is that the increased effective tax rates associated with HECS constitute a disincentive to work. It is worth noting, however, that substantially greater disincentives already exist in the tax-welfare system. Under the proposals considered here, the highest rate of collection proposed is the same as the maximum under the CSS. This is smaller than the effective tax rate that applies to the second income earner in a middle-income household with children.

Incentive effects depend further on whether fines are specified as fixed amounts, as at present, or as a proportion of future income, as in the 'day fine' system. In the case of a fixed penalty, adverse incentive effects are mitigated by the fact that, the higher the level of payments, the faster the debt is discharged. On the other hand, setting penalties proportional to income is more consistent with the general principles under which the tax-welfare system operates.

Judicial independence

Any change to penalties raises the question of judicial independence. In the case of fines, it is worth noting that the widespread use of administratively determined penalties, parking tickets and on-the-spot fines means that the principle that all penalties should be determined by a judicial officer, taking into account all relevant circumstances, has long been abandoned in the case of minor offences. In relation to sentences of imprisonment, parole boards manage penalties for prisoners after they are imposed, frequently being required to substitute their own subjective judgements for those of the sentencing judge.

A proposal such as FECS would arguably enhance judicial independence by expanding the range of penalties that can be imposed. In particular, in cases where imprisonment would be appropriate, FECS provides the possibility of both a substantial penalty and significant restitution to the community, whereas existing fines are constrained to be small in relation to the incomes of all but the poorest offenders. In summary, magistrates would retain their powers to impose sentences as they see fit, within the range of penalties set by parliament; FECS would simply improve the collection mechanism.

8.4 Repayment estimates

Using earnings function modelling

To explore what FECS might mean for the repayment obligations of hypothetical offenders we have constructed a series of age-earnings profiles using data from the Housing and Income Distribution Survey (ABS 1995), updated to 2002 dollars. The profiles are based on earnings functions estimated for males using an ordinary least squares regression. The explanatory variables are experience (a term in squared experience is included to allow a quadratic relationship between earnings and experience) and dummy variables for educational qualifications (the base category is high school or less). The econometric results are shown in Table 8.1.

Table 8.1 Log weekly wage determinants

| | |
|------------------------|----------|
| (Constant) | 5.48* |
| EXP | 0.072* |
| EXP2 | -0.0015* |
| Postgrad qualification | 0.60* |
| Bachelor degree | 0.52* |
| TAFE qualification | 0.27* |

Notes

* Significant at the 0.01 level.

$R^2 = 0.31$.

This is a well-behaved earnings function, and is comparable to those used in similar exercises related to HECS (Chapman and Salvage 2002). It suggests that males with postgraduate, Bachelors and TAFE (Technical and Further Education) qualifications earn around 60, 52 and 27 per cent more than those in the residual category. The coefficients on experience suggest that when unskilled males have been in the labour force for ten years, their weekly wages increase at around 4 per cent a year, but that their earnings peak at around age 40.

The wage equation coefficients allow us to construct an age-earnings profile for unskilled males, the group used in the illustrations of the potential repayment streams for different variants of FECS. Unskilled young males have been chosen because members of this group are more likely than average to commit low level criminal offences. Several income-employment relationships are shown in Figure 8.1.

The figure shows the annual income for unskilled males at different ages for three employment scenarios. The first, represented by the top line, is for full-time workers employed year round and earning the average income by age for unskilled males. The middle line is for males who earn the average income of unskilled males who work full-time for nine months of each year, but who receive unemployment benefits (with no dependants) for the other three months of the year. The lowest line is for individuals who work full-time for three months, and who are unemployed for the other nine months of each year.

The data can be used to illustrate repayment streams for hypothetical individuals and repayment parameters, for assumed levels of fines. For the

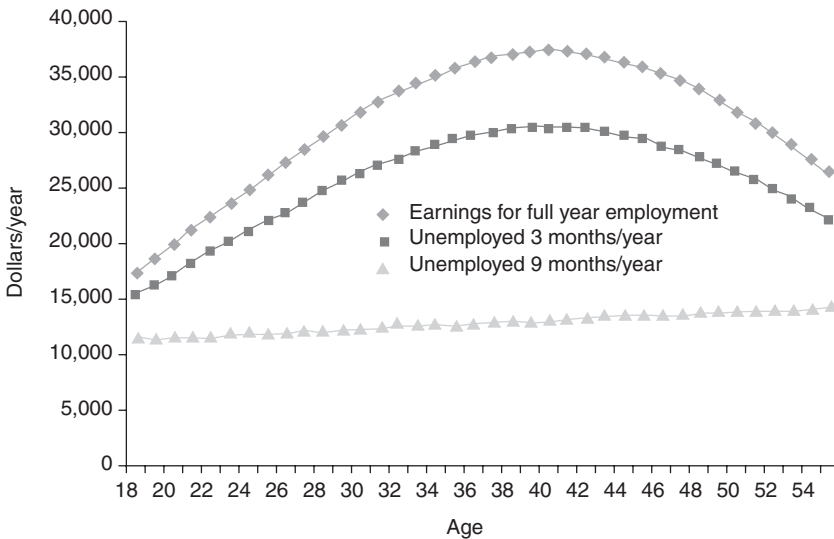


Figure 8.1 Age/earnings profiles for males, no qualifications (\$A(2002)).

latter we note that in 2002 in South Australia the average fine per person was \$A578. In the United Kingdom, a recent study of fine defaulters found that their average fine was £465: 12 per cent were ordered to pay more than £1,000 and 10 per cent less than £100. With this background it seems reasonable to assume that average fines per person might be between \$A500 and \$A1,000. However, given the benefits of collecting the debt through a default-protected mechanism such as FECS, fines could be raised to a higher level, more commensurate with the offence in question. Accordingly we illustrate the time taken to repay hypothetical fines of \$A750, \$A1,000 and \$A2,000.

In all cases it is assumed that the offender is an 18 year old unskilled male. Three different assumptions about FECS repayment rules are considered for illustrative purposes. The first is that current HECS repayment parameters are applied (Table 8.2a). The second is that repayments are equal to 5 per cent of income, with an income threshold of repayment of \$A10,000, which just exceeds unemployment benefits for a person with no dependants who is living at home (Table 8.2b). The third is that the formula used to calculate payments under the Child Support Scheme for a single child is used to determine repayment rates (Table 8.2c). Under each of these assumptions repayment times are calculated for workers employed throughout the year, for those employed for nine months and

Table 8.2a Repayment periods* under current HECS formula

| <i>Employment status</i> | <i>Fine (A\$)</i> | | |
|---|-------------------|--------------|--------------|
| | <i>750</i> | <i>1,000</i> | <i>2,000</i> |
| Year-round workers | 5 | 6 | 9 |
| Employed nine months, unemployed three months | 6 | 7 | 12 |
| Employed three months, unemployed nine months | ** | ** | ** |

Notes

* Years to repay.

** No payments made over the lifecycle.

Table 8.2b Repayment periods* payments 5 per cent of income, first threshold of \$A10,000

| <i>Employment status</i> | <i>Fine (A\$)</i> | | |
|---|-------------------|--------------|--------------|
| | <i>750</i> | <i>1,000</i> | <i>2,000</i> |
| Year-round workers | 0.9 | 1.1 | 2.2 |
| Employed nine months, unemployed three months | 1.0 | 1.3 | 2.5 |
| Employed three months, unemployed nine months | 1.3 | 1.7 | 3.4 |

Note

* Years to repay.

Table 8.2c Repayment periods* under CSS formula

| Employment status | Fine (A\$) | | |
|---|------------|-------|-------|
| | 750 | 1,000 | 2,000 |
| Year-round workers | 0.7 | 1.0 | 1.7 |
| Employed nine months, unemployed three months | 1.0 | 1.3 | 2.3 |
| Employed three months, unemployed nine months | 2.9 | 3.8 | 7.7 |

Note

* Years to repay.

unemployed for three months per year, and for those employed for three months and unemployed for nine months per year.

Table 8.2a shows that applying the current HECS repayment rules would lead to excessive repayment times in all cases. For example, for a fine of \$A2,000, repayment would take nine years for a full-time unskilled male and 12 years for a similarly qualified male who is unemployed for three months of the year. Moreover, under HECS rules no fine at all would be paid for those unemployed for nine months of the year. Hence, current HECS repayment parameters appear unsuitable for FECS.

Table 8.2b shows the implications of requiring repayments of 5 per cent of income with an income threshold of \$A10,000 per year. At 5 per cent of income, a fine of \$A1,000 would take just over a year for a worker unemployed for 3 months per year (and at this rate, the amount paid per week for this fine level is around \$A14 a week). As shown in Table 8.2c, application of the CSS parameters for those experiencing short unemployment durations takes the same length of time as for the 5 per cent rule for a fine of \$A1,000.

Table 8.2c suggests that application of the CSS payment rules is generous compared to the 5 per cent scheme for those experiencing long periods of unemployment, taking just under four years for a \$A1,000 fine with the CSS, compared to about 1.7 years for the 5 per cent rule. It is arguable that the CSS rule is perhaps then more appropriate given that the income situation of individuals in these income circumstances is extremely poor.

The income threshold for repayments under FECS should be low enough to include offenders who receive social security payments for part of the year, provided that no deduction, or combination of deductions, is so great as to reduce the person to penury. A straightforward way of taking this concern into account would be to use the Child Support Scheme repayment parameters, which are designed to enforce significant payments while taking account of the financial needs of the payer.

FECS and total revenue from fines

We now consider estimates of fine revenues from both the current and proposed FECS arrangements. In this respect, it is important to distinguish

between fines for traffic and parking offences, which are normally issued by police or other officials, and fines imposed by courts. The majority of fine revenue comes from traffic offences, but much of the difficulty in collecting fines relates to those imposed by courts. However, as noted above, the costs of current sanctions for non-payment of traffic offences, such as licence cancellation, are difficult to measure.

Estimates are derived from the equation:

$$\text{Annual Fine Collections} = \text{AF} * \text{APC} * \text{TO}$$

where AF is the average fine per offender, APC is the probability of fine collection and TO is the number of offenders.

It is assumed that for Australian court-imposed fines under the current system, AF, APC and TO are respectively \$A600, 0.6 and 200,000. These parameter estimates have been influenced by data provided to us for South Australia.³

On the basis of these parameters, the revenue from the current system of fine collection is estimated at $\$A600 * 0.6 * 200,000 = \$A72$ million per year.

Under FECS two parameters change: the average fine per offender increases (we assume to \$A1,000) and the probability of collection increases (we assume to 0.8). As a result, the revenue delivered from FECS is $\$A1,000 * 0.8 * 200,000 = \$A160$ million per year, more than twice as much as under the current system. Moreover we envisage that the administrative costs of collection would fall, leading to a further increase in net revenue from fines.

Substantially greater revenue could be obtained if the use of a FECS scheme were combined with the imposition of income contingent fines, particularly for traffic offences. However, this issue is beyond the scope of the present chapter.

FECS would not guarantee a 100 per cent collection rate, because some offenders may leave the country, or may fall completely outside the tax and social security network.⁴ As with HECS, an offender could apply for remission or deferral of all or part of the FECS debt on the basis that the FECS repayment could cause serious hardship.⁵

In this chapter we have not considered the complicated jurisdictional matter related to the Australian Commonwealth and State governments. While this is of critical importance for Australian implementation of FECS, it is of little interest for international readers with respect to potential application in their own jurisdictions. The major concerns and their resolution are discussed in detail in Chapman *et al.* (2004b).

8.5 Conclusion

The central aim of an improved fine collection scheme is to restore the credibility of fines as a criminal penalty. Restoring the credibility of fines

would have a number of important consequences. First, it is extremely likely to decrease the use of more expensive options such as imprisonment, probation, community service orders and the like.

Second, it might create a fairer system, in that both poor and wealthy individuals and corporations are more likely to bear penalties appropriate to their means. With the prospect of introducing a day fine scheme in Australia appearing remote (NSW Law Reform Commission 1996), FECS would be more equitable than the current system.

Third, police, sheriff, prison and community corrections resources would be freed for their primary activities, rather than being diverted to the enforcement of sanctions for fine default. Fewer indigenous offenders might die in custody. Specialist fine collection units could be disbanded.

In Australia HECS and the Child Support Scheme have been implemented without jeopardising the integrity of the tax system or creating adverse equity effects. They have provided a default-protected mechanism for the collection of citizens' financial obligations. The extension of the income contingent loan mechanism to the collection of fines, proposed here, would have similar benefits.

Ultimately, should FECS prove effective in relation to fines, it might be extended to collect a wider range of monetary penalties, including costs awarded by courts, civil monetary penalties and confiscation orders, and reparation orders for victims of crime. In this way, not only the state, but also victims, might benefit from this far-reaching reform of an important component of the criminal justice system.

Notes

- 1 A version of this chapter is published as 'Using the Tax System to Collect Fines', *Australian Journal of Public Administration* (2004), Vol. 63(3): 20–32. An earlier version was presented to the Representing Justice Conference, 12–14 December 2002, University of Canberra. The authors are grateful to Tony Salvage for research assistance. Our thanks to Andrew Cannon and John Braithwaite for comments on earlier drafts of this paper, and to two referees for constructive comments on an earlier version.
- 2 The term 'secondary deviance' offences relates to activities by persons who, having been convicted of an offence and sanctioned, have further offended because of the imposition of the sanction, for example, through non-compliance with community service orders.
- 3 In this respect we greatly appreciate the assistance provided by Deputy Chief Magistrate Andrew Cannon.
- 4 Further, there is necessarily an implicit subsidy with FECS so long as the debt is not adjusted for the real rate of interest, a parameter to be decided.
- 5 Moore (2003) found that magistrates consider that a penalty should be painful, though it should not cause unnecessary hardship.

9 Criminal reparations

Using financial incentives and income contingent fines for white-collar crimes¹

Bruce Chapman and Richard Denniss

9.1 Introduction

Collusion and insider trading, being white-collar crimes, are often characterised as victimless crimes. However, contrary to what the name suggests, such victimless crimes impose large costs on individuals and the economy. They are only victimless to the extent that those harmed by crimes such as collusion and insider trading are often unaware that they have been victimised. The absence of identifiable victims makes the detection of collusion and insider trading much more difficult. As the Australian Competition and Consumer Commission (ACCC) has stated: ‘Collusion is extremely harmful to both businesses customers and consumers. The gains can be large and difficult to detect. The incentives for collusion are high in important areas of the modern economy’ (ACCC 2002a, p. 8).

Similarly, the US Securities and Exchange Commission (SEC) has stated that: ‘Because insider trading undermines investor confidence in the fairness and integrity of the securities markets, the Commission has treated the detection and prosecution of insider trading violations as one of its enforcement priorities’ (USSEC 2003).

This chapter outlines a new approach to both detecting and punishing the crimes of insider trading and collusion. The chapter proposes that financial incentives be offered to individuals or firms participating in illegal activity in return for the provision of evidence against other participants. In order to ensure that large incentives can be offered, and large fines levied, it is also proposed that a revenue contingent payment mechanism be utilised to extract both incentive payments and fines from firms and individuals convicted of these offences. The use of a revenue related penalty payment increases the certainty of collecting reparations while reducing the incentive or necessity for recourse to bankruptcy.

9.2 Background issues and the nature of the problem

Introduction

Collusion and insider trading impose a wide range of costs on both society and the economy. Both forms of criminal conduct deliver an inequitable distribution of gains and impose a range of negative externalities such as reduced economic efficiency, reduced faith in the structure of markets and financial costs to governments.

For regulators a major problem associated with collusion and insider trading is the lack of information available to investigators. Without evidence from participants the tasks of detecting criminal activity and achieving successful prosecutions are made particularly difficult.

While it is difficult to determine accurately the extent of collusion and insider trading, some estimates are available. In recent years it has been argued that reductions in trade barriers and increased globalisation have resulted in increased collusive activity (ACCC 2002b), with the OECD estimating that the value of commerce affected by collusive conduct in 16 large cartel cases that had been examined was greater than \$A55 billion (OECD 2002b).

Recent examples of collusion include.

- Hoffman La-Roche was fined €462 million for participation in an international vitamin cartel in 2001.
- Lafarge was fined €250 million for participating in a cartel in the plasterboard industry in 2002.
- TNT, Mayne Nickless and Ansett Freight express were fined more than \$A11 million for cartel behaviour in the Australian freight industry.

Six UK drug companies engaged in price fixing of antibiotics are estimated to have cost the public health system €400 million.

While there have been relatively few prosecutions for insider trading in Australia some researchers have suggested that between 5 and 10 per cent of all trades involve insider information (Richards 2000). Similarly, a study of Australian executives found that 52 per cent of respondents would be willing to buy shares before their own company made a favourable announcement (Richards 2000). It would therefore appear that the detection and prosecution of insider trading lags well behind its prevalence.

What is collusion?

Collusion is defined as an agreement ‘between different firms to cooperate by raising prices, dividing markets, or otherwise restraining competition’

(Samuelson and Nordhaus 1987, p. 900). Collusion imposes large, though difficult to quantify, costs on consumers and businesses not involved in the collusive conduct. The result is a maldistribution of resources and income and a reduction in the allocative efficiency of the economy. Estimates of the impact of collusion on market prices range from 10 per cent in the US (ACCC 2002, p. 23) to between 15 and 50 per cent (OECD 2002a, p. 9). The OECD has referred to collusive practices as the most 'egregious violations of competition law' (OECD 2002, p. 5).

While examples of successful prosecutions for cartel activity can be found it is widely considered that most collusion is undetected. The OECD has stated that:

The challenge in attacking hard-core cartels is to penetrate their cloak of secrecy. To encourage a member of a cartel to confess and implicate its co-conspirators with first hand, direct, 'insider' evidence about their clandestine meetings and communications, an enforcement agency may promise a smaller fine, shorter sentence, less restrictive order, or complete amnesty.

(OECD 2002b, p. 7)

Detection of collusion is made more difficult because of the absence of an apparent victim. This is further complicated by the difficulty of proving, without access to insider information, that firms suspected of colluding are doing so. In 2001–02 the ACCC received 442 complaints of cartel and price fixing, of which 61 were investigated. On average, between three and five cases are taken to court each year (ACCC 2002, p. 24).

The Chairman of the ACCC, Graeme Samuel, has recently described cartels as the 'very worst form of violation of corporation law' and plans to use a leniency policy to encourage executives to 'squeal on their fellow offenders' (cited in Dodd 2003). The potential for the provision of financial incentives to remove the 'cloak of secrecy' that surrounds collusive conduct is discussed below.

A case study in collusion

In 1994 TNT Australia Pty Ltd, Ansett Transport Industries (Operations) Pty Ltd, and Mayne Nickless Ltd, as well as a number of individuals, admitted to contravening sections 45 and 45A of the Australian Trade Practices Act 1974.² The companies were fined \$A4,100,000, \$A900,000 and \$A6,000,000 respectively.

In summarising the nature of the collusive conduct of the cartel, Justice Burchett stated:

What was alleged, supported by voluminous evidence, and is now admitted, is that at five primary meetings attended by representatives

of the three companies, which took place between 1987 and 1990, a series of agreements were reached, as follows:

- i That the companies would not 'poach' each other's customers, by which the admissions of Mayne Nickless Limited specified, and I understand the other respondents to have meant, that if one was requested to quote by a customer of another, it would either fail to do so or would submit a quotation above the price charged by the other company, the existing supplier, a practice described as 'giving cover';
- ii That if one received the custom of customers of another, compensation would be made by returning customers of the same value by the process of up-rating them or driving them away by the provision of poor service;
- iii That there would be a balancing of accounts of customers lost and gained and payment of compensation;
- iv That no quotes would be given to customers of another firm over the telephone; and
- v That uniform prices would be charged for what were referred to as 'air satchels'.

Effect was given to these agreements by each of the companies on many occasions. A great number of instances was specified in documents filed in the proceedings.

As a result, between 1987 and mid 1991, the market shares of the companies were systematically protected from the effects of competition, and in particular their ability to set prices in the relevant market, the express freight market, was freed from the constraints of competition. Not only were the arrangements and their objects and consequences in flagrant breach of the obligations imposed on the companies, in the public interest, by law; the means for effecting the intended illegal results were themselves damaging to the public interest in a healthy economy, and were in direct conflict with the fundamental purposes of the Trade Practices Act. From the point of view of those purposes, an arrangement to maintain a cartel by deliberately providing poor service in order to compel customers to turn or to return to a supplier with whom they might be dissatisfied, must be particularly pernicious.

(Burchett 1994)

Initially the firms and individuals in the cartel denied their involvement, but eventually admitted their involvement. In return 'the Commission and the parties in question had negotiated penalties which they regarded as appropriate, and they jointly submitted that these were the penalties the Court should fix' (ibid.).

Because the firms eventually agreed to admit their involvement in the

cartel the firms received significantly reduced penalties as justified in the following observations:

the penalties I have ordered to be paid here do not represent what I would have imposed as proper in such circumstances, since I have made substantial allowance for the admissions, both as indicative of a true resolve to comply with the law in future, and as involving a benefit to the community, belated though it was, that ought to be recognized in the fixing of penalties that are just in all the circumstances.

(*ibid.*)

It is therefore reasonable to assume that if an individual executive had opted to blow the whistle and provide the necessary evidence about the operation of the cartel the judge could have opted to impose a substantially larger penalty. At the time the offences were committed the maximum penalty was \$A250,000 per breach. Given that an estimated 50 meetings between senior executives took place, the penalty could have been in the order of \$A12.5 million. The then Chairman of the ACCC stated it was difficult to estimate the economic damage of the cartel (*Age* 1995), but the costs were estimated to be \$A100 million by a firm harmed by the cartel (*Australian* 1996).

What is insider trading?

Insider trading is defined as 'profitable trading in securities by a person with material non-public information' (Freeman and Adams 1999, p. 2). The activity is illegal under section 1002G(2) of the Australian Corporations Law, as is the case in many other countries. The use of insider information when buying or selling securities causes harm both to individuals and to the economy as a whole. If an individual purchases shares from another based on inside information that the share price is likely to rise, when the information becomes public the insider who purchased the shares realises a profit which the seller has lost.

The essential reason that insider trading is illegal is that if members of the public perceive that such activity is common in the stock market this has the potential to undermine confidence in the market, resulting in lower investment than otherwise, and higher costs for firms in the raising of capital. This concern with the social costs has not been undermined by the arguments of some commentators that insider trading facilitates the flow of information within the market and therefore increases efficiency (see Manne 1996; Jensen and Meckling 1976).

The procedures required to reduce insider trading involved listed companies being obliged to notify the stock exchange once they become aware of any information with the potential to have a material effect on the company's share price (Corporations Law section 1001A and ASX listing

rule 3.1). These 'continuous disclosure' provisions require firms to make insider information public and are motivated by the concern to increase the efficiency of the market without individuals profiting in the process. The Australian regulator responsible for controlling insider trading is the Australian Securities and Investments Commission (ASIC).

Despite the apparent widespread acceptance of the view that insider trading is common (see for example Brown 2003), there have been few prosecutions for such behaviour. While the recent case of a high profile businessman, Rene Rivkin, attracted substantial media attention (ASIC 2001a), only a small number of other cases have been pursued (see for example ASIC 2001b, 2002, 2003). Between 1990 and 2000 there were six prosecutions only for insider trading (Richards 2000). While regulatory authorities may attempt to identify unusual trading activity in order to prevent insider trading, such detection is both expensive and often inaccurate. Statistical evidence of unusual behaviour may be sufficient to begin an investigation, but achieving convictions is difficult without testimony from a witness.

A major point from the above is that in order to prosecute successfully those engaged in insider trading and in turn deter potential criminal conduct, regulators need processes to ensure they have access to inside information. The following sections discuss mechanisms to encourage individuals to come forward with information about insider trading.

An Australian case study of insider trading³

On 24 April 2001, Mr Rene Rivkin purchased 50,000 Qantas shares in the name of Rivkin Investments Pty Ltd. Mr Rivkin was the sole director of this company. Following an investigation by the Australian Securities and Investments Commission (ASIC) into the circumstances surrounding trading in Qantas shares in the lead up to the announcement by Qantas that it would purchase Impulse Airlines, Mr Rivkin was charged with insider trading.

At the same time that Qantas was negotiating a possible purchase of Impulse Airlines, Mr Rivkin was negotiating with the Executive Chairman of Impulse, Mr Gerry McGowan, over the possible sale of Mr Rivkin's \$A8 million harbour front property in Sydney.

Mr McGowan said that he could not commit to purchase Mr Rivkin's property unless the ACCC approved the deal between Qantas and Impulse. The court was told that Mr Rivkin was a person who would understand that this was very good news for Qantas. The court was also told that during the course of his conversation with Mr McGowan, Mr Rivkin was cautioned not to trade in Qantas shares on the strength of the information.

Three and a half hours later Mr Rivkin instructed his broker to purchase 50,000 shares in Qantas on behalf of Rivkin Investments Pty Ltd.

On 30 April 2003 Mr Rivkin was found guilty by jury on one count of insider trading in breach of Section 1002G(2) of the Corporations Act. On 29 May Mr Rivkin was sentenced to nine months' imprisonment, to be served by way of periodic detention, and was fined \$A30,000.

The example serves to highlight the difficulties involved in a successful prosecution. It was only because an associate was prepared to approach the authorities that the conviction was possible. There presumably is a very large number of undetected acts of insider trading, in part because the processes to encourage disclosure appear to be ineffectual, an issue considered further below.

9.3 Applying income contingent loans

ROGUE

The essential idea being proposed in this chapter is to replace current corporate offence penalties with an improved fine mechanism, involving two innovations: financial rewards being offered to individuals providing information leading to successful collusion or insider trading prosecutions and with the fines being paid as a proportion of future profits or taxable income. The arrangement might be known as the Repayment of Gains Unlawfully Earned (ROGUE) scheme.

The advantage of financial incentives for information

An important aspect of ROGUE involves a financial mechanism designed to encourage whistle-blowing. This is that the government would set up a fund allowing financial rewards to be paid to informants for the supply of information leading to collusion or insider trading convictions. The reward, set at a minimum of say \$A10,000 or perhaps 10 per cent of the fine – whichever was greater – would be delivered to the informant at the time of sentencing. The government would need to provide the initial financial resources, but if successful eventually the fund would be self-financing, paid for through the profit or income contingent contributions of offenders.

The most important advantage of the system to the informant is that there would be a guarantee of financial reward independent of the circumstances of the offending individuals or corporations. ROGUE actively encourages and rewards the supply of information, and in more positive ways than is feasible under current alternatives. Current leniency policies have very weak incentives only – since there will still be (reduced) penalties for whistle-blowers – especially in the context that conspirators believe the probability of being caught is low.

Furthermore, leniency policies are not relevant in the process of prosecution for individuals who have knowledge of criminal conduct, but who

are not directly involved. This aspect of the policy would therefore have significant potential to reduce these forms of criminal activity, given the apparent near impossibility of establishing collusion or insider trading without benefits to those with the requisite information.

ROGUE would use insider information against insider traders and those engaged in collusive conduct. The provision of substantial rewards introduces an important new dynamic into the decision-making process of those engaged in stable cartels and insider trading networks. The provision of a reward to an individual who provides evidence against his/her conspirators serves to disconnect the relationship between the optimal decision for the group (maintain silence) and the optimal decision for an individual (be the first to provide evidence). Other issues associated with incentive schemes are considered further below.

The advantages of an income contingent fine collection mechanism

The suggested reform scheme requires the collection of penalties through the tax system related to profit (for collusion) or taxable income (for insider trading) debts. There are several clear advantages of such a collection system compared to current arrangements.

One is that since fines are to be paid contingent on future economic circumstances, they can be set without concern for the possibility that penalties would lead to corporate or individual bankruptcy; thus fines can be levied to reflect the true social costs of these types of illegal activity. The same point is made in Chapter 11 with respect to the setting of fines for low-level criminal activity, and the issue is dealt with further below.

The second, and closely related to the above, is that if fines are collected in a default-protected way the probability that the courts will receive payments in full is increased, compared to the current situation in which some offenders are able to avoid payments through bankruptcy or evasion. This benefit of the scheme is the generic advantage of income contingent loans: as highlighted in the conceptual discussion of Chapter 3 with respect to higher education financing, there is insurance provided against both default and repayment hardships.

The point should be emphasised in the broad context of the book. Compared to alternative repayment mechanisms with no sensitivity to capacity to pay (such as bank loans) ICLs help ensure longevity in the time stream of repayments. Consequently they increase the likelihood of successful fine or loan repayment. As noted by one of our colleagues, 'it is in the interests of the parasite to keep the host alive'⁴ (in the ROGUE example the former is the courts and the latter is the offender). However, there is still a potential for a poorly designed ROGUE system to encourage avoidance of payment through other means, and this is considered further below.

The fine repayment parameters would be designed to address a basic trade-off: the percentage of profits collected would be low enough to limit moral hazard associated with avoidance, but high enough to ensure that payment occurs in a relatively short period. A detailed example of how this might work with respect to collusion is presented below.

An insider trading variant of the arrangement is characterised also by the insurance aspect of ICLs, but would be somewhat different since, as explained above, this offence typically involves individuals rather than corporations. Accordingly, with ROGUE an insider trading offence would involve the imposition of fines to be repaid depending on individual taxable incomes, again through the Australian Tax Office. A detailed example of possible repayment streams is offered below.

The use of detection incentives

As discussed above, access to information is the primary barrier to both the detection and successful prosecution of white-collar crimes such as collusion and insider trading. The provision of financial incentives to those supplying evidence is likely to increase the number of people coming forward for a number of reasons.

- i Given that financial gain is likely to be a major motivation of those engaging in collusion or insider trading the provision of large financial rewards (relative to the profits being made from illegal conduct) is considered to be an effective incentive to come forward.
- ii Individuals already engaged in illegal conduct are less likely to trust each other when the opportunity exists for one party to profit from reporting the actions of fellow conspirators. Despite individual conspirators possessing a preference to maintain the status quo, individuals involved in illegal conduct must estimate the probability that their co-conspirators will be the first to profit from revealing information to regulators.
- iii The existence of a financial incentive for reporting corporate crime significantly alters the profit maximising decision-making process for an individual approached for the first time to participate in new illegal conduct. In addition to increasing the risk of detection, a financial incentive to report illegal conduct provides an individual who has been approached to participate in a crime with a way to profit without risk of prosecution.
- iv The reward scheme can still operate in tandem with any leniency program offered by regulators, resulting in an improved likelihood that those who are motivated by the desire to avoid criminal sanction will come forward.

9.3 Existing incentive schemes

This section provides an overview of some of the existing incentive schemes that operate both in Australia and internationally. It is apparent that the use of incentives, while not widespread, is not uncommon in corporate regulation. Its extension in the manner proposed in this paper can therefore be seen as an extension of existing practice rather than a radical innovation. An important precondition for the success of an incentives based system is the perception of certainty of the reward payment by the informant. The existence of the ROGUE scheme, backed up with initial establishment funding provided by the Commonwealth government, serves to increase such certainty.

The ACCC currently has in place a policy of leniency whereby firms volunteering information concerning collusive conduct may expect some leniency in terms of either prosecution or sentencing. ACCC states:

The ACCC is of the view that a leniency policy that provides clear and certain incentives to potential applicants is a valuable tool in fighting illegal cartel conduct. When the extent of the leniency to be provided is certain, persons are more likely to take advantage of such policy and disclose potentially illegal and harmful conduct.

(2002b, p. 2)

In describing the likely effectiveness of leniency programmes, the Chairman of the ACCC recently stated that:

Invariably in a hard-core cartel there will be a weak link. There will be someone that's nervous. There might be someone that isn't actually benefiting out of the cartel in the way they expected to. But more importantly, they'll be nervous about the implications of the cartel being found out.

(Samuel cited in Dodd 2003, p. 19)

Leniency programmes also operate in the US, UK, Canada and the EU. These programmes are discussed in OECD (2002b) and European cartels are discussed in detail in Harding and Joshua (2003). Harding and Joshua (2003) concluded that the US approach to cartel detection was more successful than the European approach due its greater reliance on surprise 'dawn raids' on companies and the provision of a high degree of certainty to informants about the likely benefits of providing evidence to regulators about cartel conduct (*ibid.* p. 165). Harding and Joshua also conclude that as the European regulators refine their leniency programmes:

these new strategies may eventually transform the landscape of enforcement. If leniency does become successful in the way that it has

worked for the US Department of Justice, this should ease the Commission's evidential workload and reduce the scope for some kinds of legal argument on appeal.

(*ibid.* p. 142)

The overall rationale behind leniency programmes is that the potential to avoid sanction is, in itself, an incentive to provide information. However, direct financial incentives are likely to be even more effective than leniency for two reasons. One, the incentive is larger, and two, the probability of a co-conspirator becoming an informant is greater. As Pamela Bucy states 'Money, lots of it, is necessary to attract knowledgeable insiders with helpful information of complex wrongdoing' (Bucy 2002b, p. 970).

While leniency programmes have some capacity to act as an incentive, it is possible to increase the benefits of providing information on corporate crime by offering rewards. The existence of rewards is common both in Australia and internationally when law enforcement agencies are seeking information to assist inquiries into a specific crime. In the US rewards are paid to individuals who provide assistance in the detection and prosecution of white-collar crime under the *Qui Tam* provisions of the False Claim Act (FCA) (see Bucy 2002a), internal revenue laws (IRS 1983) and the Securities Exchange Act (USSEC 2003).

Under the *Qui Tam* provisions, individuals providing information which leads to a successful prosecution for fraud against the government collect a percentage of the money recovered. According to Bucy (2002a):

more than any other private justice actions or for that matter, more than most legal actions, the FCA's structure seeks to change social values. Perhaps not by design, but in fact, the FCA elevates the value of protecting the government, or larger community, over the value of loyalty to those close at hand.

(*ibid.* p. 54)

Similarly, the Securities Exchange Commission (SEC) has the power under Section 21A(e) of the Exchange Act to offer 'bounties' to individuals who provide material information assisting in a successful prosecution for insider trading.

Insider trading may result in enforcement action by the SEC or in criminal prosecution by the Department of Justice. The Exchange Act permits the Commission to bring suit against insider traders to seek injunctions, which are court orders that prohibit violations of the law under threat of fines and imprisonment. The Commission may also seek other relief against insider traders, including recovery of any illegal gains (or losses avoided) and payment of a civil penalty. The amount of a civil penalty can be up to three times the profit gained (or loss avoided) as a result of insider trading.

The SEC is permitted to make bounty awards from the civil penalties that are actually recovered from violators. With minor exceptions, any person who provides information leading to the imposition of a civil penalty may be paid a bounty. However the total amount of bounties that may be paid from a civil penalty may not exceed 10 per cent of that penalty (USSEC 2003).

Based on the submission of the Australian Attorney-General's Department, the Griffith Committee rejected the need to introduce a system of rewards or bounties for informers on the grounds that such incentives reduce the credibility of evidence put forward by the prosecution, suggesting that they are 'incompatible with accepted principles and practices within Australian society' (House of Representatives Standing Committee on Legal and Constitutional Affairs 1991, p. 45).

While it is possible that the provision of incentives may reduce the credibility with which a jury views information provided by an informant, such a factor must be considered in the context of the almost complete absence of evidence which is currently available to those seeking to enforce the law. As for the 'accepted principles and practices' of Australian society, given the extent of the spread of 'market values' across Australian society over the last 15 years, it is unlikely that contemporary Australians would be as averse to the provision of financial incentives as may have been the case in 1989.

The role of incentives in regulation is discussed in Grabosky (1995). He states that: 'Incentives may be necessary to enlist the assistance of the general public when regulatory powers and compliance capacities are inadequate to attain regulatory objectives' (ibid. p. 263). Grabosky also cites a range of problems with reliance on incentives including the capacity for material rewards to erode the effectiveness of moral rewards, that citizens should not be rewarded for the normal responsibilities of citizenship, and the cost of providing rewards. While such concerns must be carefully considered in the development of any reward system, it is important to note that it is the existing failure of the business and finance community to live up to their responsibilities to report corporate crime that underpins the case for the provision of incentives. Furthermore, the cost of rewards to the State will be minimised through the reliance on the income contingent payment mechanism outlined above.

The essential point is that in order to detect cartels and insider trading it is important to provide an incentive to individuals to supply information to the regulators. While most countries offer some form of leniency programmes to individuals who volunteer information (see OECD 2002a), immunity from prosecution is far less attractive than large financial rewards.

Rewards are likely to increase the probability of detection as they would work on a number of different elements of the decision-making process simultaneously. At present, if a firm is approached to enter a cartel

it is likely to compare the risk-weighted benefits of participation with the status quo. Given the potential for cartels to increase profits combined with the low risk of detection, there are obvious incentives to participate.

Whistle-blower protection

The need for whistle-blower protection has been widely discussed in the Australian and international literature (see for example McMillan 1986; Grabosky 1991; Starke 1991; Dempster 1997; Glazer and Glazer 1989; Perry 1998). Recently proposed changes to the Australian Corporations Act under Corporations Law Economic Reform Program (CLERP 9) would afford greater protection to whistle-blowers who report suspected breaches of the Corporations legislation to the Australian Securities and Investment Commission (ASIC). The draft Bill (Audit Reform and Corporate Disclosure Bill 2003) attempts to provide protection to whistle-blowers from victimisation.

In addition to providing further incentive for whistle-blowers to come forward the provision of financial rewards to some whistle-blowers, as proposed above, would help further to protect whistle-blowers. Financial rewards would both help to compensate whistle-blowers for any loss of earnings associated with their actions and send a public signal that the actions of the whistle-blower are of value to the community.

Malicious allegations

One final issue is the possibility that individuals could make malicious allegations against other parties. While such an occurrence is possible, the ROGUE scheme provides no real incentive to encourage such behaviour, as rewards are only payable if whistle-blowers provide information that leads to a successful prosecution. Furthermore, the publication of malicious allegations may leave the whistle-blower liable for damages if he/she was found to have defamed a person or organisation.

9.4 Repayment estimates

An example of profit related fine repayments for collusion

It is useful to illustrate the time stream of effects of a hypothetical collusion fine, paid according to future profits. We take the example of Mayne Nickless (now Mayne Group) considered above and make three assumptions.

- i The fine is set at \$A283 million, which is 10 per cent of the total revenue of the company in 1994. This mechanism for determining the extent of a fine was outlined by the Federal Treasurer in February

2005. It is important to note that, as discussed above, internationally, fines for collusive conduct have been substantially higher than this amount.

- ii The rate of payment of the fine is 20 per cent of net profits. The figure set by government could be higher or lower than this, but it useful to emphasise that there is a trade-off involved in the choice: a high rate encourages moral hazard, which might take the form of the under-reporting of profits, but a very low rate necessarily means a longer time period of repayment. The trade-off is the same as that noted in the setting of the repayment of drought assistance explained in Chapter 9, where it was suggested that a rate of a farm's annual turnover being paid might be between 2 and 5 per cent.
- iii The rate of interest is zero in real terms implying that (as with respect to HECS, explained in Chapter 4) after the debt is incurred the out-standing amount is adjusted annually for price inflation. A real interest rate could be imposed, and it might take the form of there being a real surcharge added to the fine for companies choosing to repay their obligation according to future profits, which again is the form taken of the HECS interest rate (see Chapter 4).

Figure 9.1 illustrates the actual net profits of Mayne Group in the 1994–2004 period, and the associated path that repayments of the

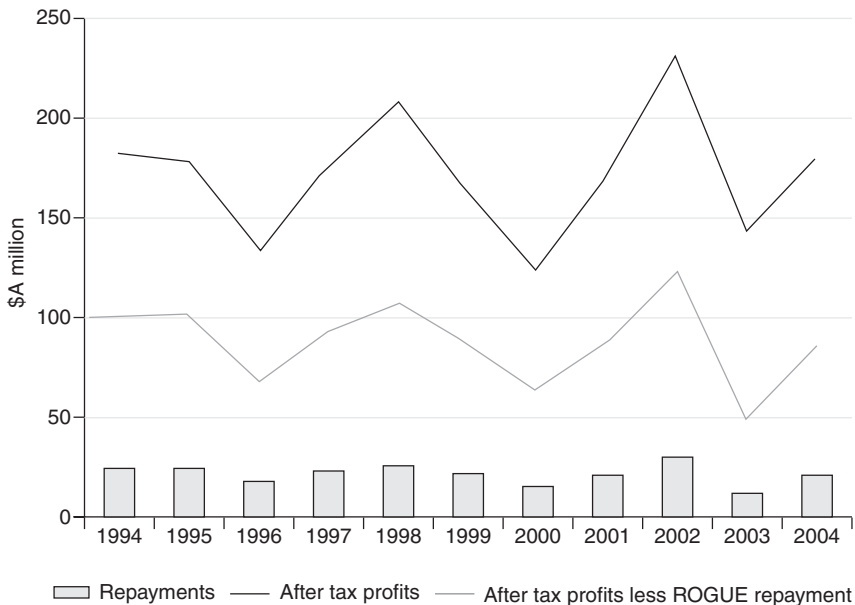


Figure 9.1 Profit and fine repayment schedule for a hypothetical collusion fine (source: Aspect Financial (2003) and author's estimates).

hypothetical fine would take. After ten years of repayments the balance of the fine would have fallen by over 70 per cent to \$A84.3 million. Repayment of the fine in full would likely take approximately 14 years.

An important point from the figure is that ROGUE serves to smooth out the stream of profits, in much the same way as happens with respect to ICL applications for HECS, turnover contingent drought relief payments, FECS, profit contingent community investment project loan repayments and housing loan credits (see respectively, Chapters 4, 9, 11, 13 and 14).

An example of income contingent fine repayments for insider trading

ROGUE entails the imposition of fines on insider traders to be paid depending on the offender's future income. This raises the issue of what would constitute appropriate repayment parameters. As discussed above, two examples of current practice are HECS and the CSS, and it is useful to recall that repayment exercises such as those reported below made it clear that the CSS parameters appeared to be preferable to the HECS arrangements for FECS (see Chapter 11).

As is the case with the choice of repayment parameters for collusion offences, there is a basic trade-off involved. On the one hand the repayment of a fine needs to be relatively quick since a short period of payment, for any given level of fine, constitutes a relatively high per period penalty, and this might be considered appropriate for a major white-collar criminal offence.

On the other hand, a major benefit of an income contingent payment is that such arrangements diminish the burdens associated with debt remission as well as offering a form of default protection insurance. However, the more severe the payment parameters, the lower the prospects of the delivery of these benefits through avoidance behaviours associated with moral hazard.

The illustration uses the following assumptions:

- i The offender earns constant (time invariant) annual taxable incomes of \$A20,000, \$A40,000, \$A60,000 or \$A200,000 per annum.
- ii If fine payment is made on the basis of HECS, the parameters used in 2003/04 are adopted, with a first income repayment threshold of around \$A24,000 per annum and a first rate of payment of 3 per cent of income.
- iii If fine payment is made on the basis of CSS, the 2003 formula is used (see Chapter 11 and Child Support Agency 2001).
- iv If fine payment is made on the basis of CSS, the annual payment is equal to the obligation of a non-custodial parent of one child only, and the custodial parent receives the social security payments of a sole parent (see, from Chapter 11, that child support payments reflect the incomes of both parents).

- v The fine imposed is \$A50,000.
- vi The rate of interest on the debt is assumed to be zero in real terms. In an extension of these exercises it would be useful to modify this assumption, perhaps through adoption of the form of the interest rate arrangements of HECS (see Chapter 4).

The data from Tables 9.1 and 9.2 suggest the following. First, for very low incomes (under about \$A25,000), applying the HECS repayment parameters would mean that offenders would pay nothing and thus all of the debt would remain unpaid. Second, even at incomes close to the average of individuals working for pay, HECS parameters suggest very long periods of debt payment, for example about 23 and 15 years for incomes of \$A40,000 and \$A60,000 respectively. In other words, the HECS rules seem to be far too generous a way in which to pay penalties for insider trading.

On the other hand, the CSS results seem much more appropriate for the following reasons. First, even at the very low income of \$A20,000, some payment obligation (\$A1,383 per year) is still required. Second, the CSS rules suggest relatively short, or at least manageable as far as the courts are concerned, periods of fine payment of around ten years for incomes around \$A40,000 per annum, to just 2.5 years for those on very high incomes.

It would seem then that applying the CSS repayment rules would come fairly close to satisfying the need to have fines paid quickly without imposing undue duress on offenders. This is the same conclusion reached for FECS reported in Chapter 11. The CSS arrangements are designed to enforce significant payments while taking account of the financial needs of the payer. In summary, it is difficult to support the payment of fines for insider trading constituting a less arduous experience than that associated

Table 9.1 \$A50,000 fine repayments under HECS and the CSS: annual payments (\$A)

| <i>Annual income</i> | <i>\$20,000</i> | <i>\$40,000</i> | <i>\$60,000</i> | <i>\$200,000</i> |
|----------------------|-----------------|-----------------|-----------------|------------------|
| HECS | 0 | 2,200 | 3,300 | 11,000 |
| CSS | 1,383 | 4,983 | 8,583 | 19,288* |

Note

* CSS payments are capped for incomes exceeding \$119,470.

Table 9.2 \$A50,000 fine repayments under HECS and the CSS: years taken

| <i>Annual income</i> | <i>\$20,000</i> | <i>\$40,000</i> | <i>\$60,000</i> | <i>\$200,000</i> |
|----------------------|-----------------|-----------------|-----------------|------------------|
| HECS | Unpaid | 22.7 | 15.2 | 4.5 |
| CSS | 36.2 | 10.0 | 5.8 | 2.5 |

with the financial support of a child. This is the same conclusion reached in Chapter 11 for the payment of fines imposed on offenders for low-level criminal activity.

9.5 Conclusion

This chapter offers a financial mechanism designed to encourage the reporting of illegal activity and to penalise it in ways that maximise the probabilities of full repayment of criminal obligations. With ROGUE, monetary rewards are delivered to individuals for the provision of information leading to successful prosecutions against colluders and insider traders. The fine obligations are to be repaid through the tax system, and to have the essential characteristics and advantages of income contingent loans.

By introducing a reward for firms admitting to their involvement in illegal conduct, disgruntled cartel members will, for the first time, have an incentive to report their activity to the regulator rather than to attempt to reconstruct the cartel. While the existence of a whistle-blower does not guarantee that the other parties accused of collusion or insider trading will plead guilty there is little doubt that, compared to existing leniency programmes, the provision of rewards will increase the probability of whistle-blowers coming forward.

By relying on income contingent payment mechanisms, the potential for large penalties to bankrupt firms, and therefore further disrupt the distribution of resources, is minimised. Similarly, individuals found guilty of insider trading would not be able to escape their sanctions by declaring bankruptcy, meaning that ROGUE has the strong potential to increase equity and the certainty of incentive payments being paid. And if bankruptcy is declared for other reasons the legislation could be designed in such a way as to ensure future repayment of the debt when incomes recover; for individuals in this sense ROGUE obligations could be treated similarly to income tax obligations.

ROGUE, like all the case studies of ICLs offered in this book, provides to offenders both insurance against default and the likelihood of relative ease for both companies and individuals engaged in the process of repayment. These benefits should be reflected in the imposition of higher fines, implying that not only does the scheme increase the likelihood of full payment of a given level of a fine, but it also means that fines could be higher than is possible under current circumstances. It should also be stressed that ROGUE is not meant to replace the threat and penalty of imprisonment for the commitment of serious white-collar offences.

Notes

- 1 An earlier version of this chapter is published as 'Using financial incentives and income contingent penalties to detect and punish collusion and insider trading', *Australian and New Zealand Journal of Criminology* (2004), Vol. 38.
- 2 Sections 45 and 45A of the Trade Practices Act 1974 deal with proscribed agreements such as market sharing agreements which have the purpose or effect of substantially lessening competition and agreements that fix prices.
- 3 The information on the Rivkin case comes from Lampe (2003). The authors are not responsible for its contents.
- 4 Dr John Beaton, CEO of the Academy of Social Sciences in Australia, in 2004.

10 Social and community investments

Profit contingent loans for economically disadvantaged regions¹

Bruce Chapman and Ric Simes

10.1 Introduction

There is an increasing recognition that, without government assistance, market economies do not always deliver the socially best outcomes in a regional context. Economically disadvantaged areas would seem to be less likely to have an inherent capacity to generate economic activity or to deliver automatically socially propitious outcomes. In such circumstances, there might be a strong case for public sector intervention of various types which, to be effective, might need to be able to tap into and build upon local enterprise and drive.

In what follows we consider the background to this issue with respect to the provision of financial resources for the establishment or consolidation of community social, and other, regional enterprises. The circumstances underlying the impotence of markets to solve financing issues are explored, and brief attention is given to historical attempts to address the problem in Australia. Most importantly, we outline a new approach for the public sector in this area, involving as its key feature the provision of income, in this case, profit contingent loans.

The importance of income contingent loans (ICLs) in this application, as in all actual or suggested ICL schemes considered in this book, is that the arrangement offers investors access to finance with a form of insurance with both default and hardship protection. It is argued that these facilities have the potential to help maximise the prospects that: the investments come to fruition, they provide encouragement for the financial participation of traditional commercial parties and they have the desirable equity characteristic of allowing taxpayers some returns to their investment.

The suggested scheme involves a partnership between three parties: financial institutions, the public sector and the specific social or private enterprise. It is explained why the nature of private investment in a regional context requires the involvement of each party, and a particular form of this partnership is examined. The steps involving the way in which the scheme might be instituted are described.

10.2 Background issues and the nature of the problem

The importance of social enterprises

There is no magic solution to generating greater economic activity in depressed or disadvantaged regions. Circumstances and the resources that may be garnered will differ: a scheme that works in one place may not work elsewhere.

In the Australian context numerous studies and policy initiatives have been conducted over the last few decades to address what is a major economic as well as social challenge for the community. An overriding theme is that, while there is a case for governments to establish an overall policy framework, workable solutions seem to be critically dependent on local drive and enterprise.²

Social enterprises are understood to be businesses that attempt to develop self-sustaining solutions to long-standing social problems within communities that do not have access to resources usually available in other areas. The term is commonly applied to businesses that often entail a three-way pact between financial institutions, government and businesses. It appears that social enterprises have sometimes emerged because larger corporations are not well suited to operate in these parts of the economy.

The case for government support of social enterprises has several strands. Patrick McClure, chief executive of Mission Australia, has argued in favour of social enterprises as follows:³

The dramatic changes of the past two decades have left many Australian communities without the traditional social networks which connect people. The growing divide between the job-rich and job-poor is just one symptom of this, but the cure runs much deeper than simply creating jobs. We need to establish a deliberate focus on community capacity-building and encouraging social entrepreneurship so communities, families and individuals are provided with opportunities to become economically and socially engaged.

On this theme the UK Department of Trade and Industry recognises that social enterprises have an impact which is much broader than that implied by just financial return.⁴ They suggest that the ability to show that a social enterprise is meeting both its financial and social bottom lines will be increasingly important if social enterprises are to play an expanding role in the delivery of public services. Some of the externalities identified in that report by Patricia Hewitt, UK Secretary of State for Trade and Industry,⁵ include a mechanism for bringing excluded groups into the labour market.

Social enterprises are best defined in terms of how profits are distributed rather than, say, the types of activities in which they are engaged.

In metropolitan areas in Australia, for example, they tend to be based around labour market issues. In regional areas they tend instead to be justified in order to regenerate what have been declining communities.

While social enterprises are seen by many to be a promising approach to developing economic activity in dislocated regions, or with respect to excluded groups in the community, other locally based initiatives that may not fall under the banner of 'social enterprise' might also fall into this category. Arguably the spectrum runs from:

- i social enterprises that may be able to bring only limited equity and other sources of funds to the project, but with a broad support base within the community; to
- ii private companies and/or individuals where the owners will have more collateral available to support the project.

The essential problem which has motivated our suggestion for an ICL lies in the provision of adequate and appropriately vetted financial capital for social enterprises. This challenge is particularly important for community projects and other ventures in regionally disadvantaged areas. This chapter proposes a creative solution whereby government facilitates the active involvement of financial institutions and offers an instrument designed to minimise the risks associated with viable initiatives.

It is important to understand that analysis of the costs and benefits of the proposal needs to establish first how financial institutions currently operate with respect to lending for developing businesses, an issue considered in the next section. The discussion focuses on small business, although many of the ideas are more generally applicable.

Access to finance by small business

The great benefit of recent Australian financial deregulation has been that it has significantly expanded choice and the range of financial services available to customers. Many more products – and variants on those products – are accessible through much more of the community, albeit at a price. A critical issue concerns the availability of finance, now considered.

In an extensive study of the availability of capital in the wake of the very tight financial conditions of the late 1980s, the (then) Australian Industry Commission concluded that there was no evidence of finance being rationed in a generalised way other than through price.⁶ It is argued that this was a significant improvement on the situation in the 1970s where the banks rationed credit across the board. Subsequent studies have similarly concluded that finance has been more readily available, which is not surprising given the continued innovation that has occurred.⁷

The evidence suggests an inability to detect clear market failures narrowly within the banking (or financial) sector, with the above summary of

studies concluding that banks in the main are responding appropriately to customer demands.

In an important sense, however, these studies do not address the key issues. This is because the principal concerns have been broader than just whether financial institutions are responding appropriately to a given set of signals.

Rather, it seems to be clear that the sector relates to what is the best way to bring viable projects to a stage where finance will be forthcoming, and what might be the roles of the various parties in this process (including governments and financial institutions). For example, the Industry Commission's recommendations tended to involve either improving the information flows between borrowers and lenders or providing support for potential borrowers to develop their proposals to a standard worthy of consideration for finance.

There are four areas where some government encouragement and/or intervention may be warranted:

- i assisting small business to become finance-ready;
- ii the provision of start-up capital for projects where significant external benefits are likely, for example with respect to projects based on research and development;
- iii attracting finance into regionally depressed areas;
- iv access to finance for disadvantaged groups.

The appropriate policy response to the challenges being confronted will be difficult. In the case of debt finance for example, the relevant financial institution may not be prepared to lend for three possible reasons. First, the proposal may need further development (for example, a business plan, a new corporate structure, or additional management or other skills). Second, the project may need additional resources, possibly from public sources if there are potentially significant external benefits from the project. Third, the financial institution may not have the resources to fully understand the nature of the project and the risks it may incur if it extends credit.

Increased competitive pressure over the last 15 years or so in Australia has meant that cross-subsidisation across banking products has been largely curtailed. Consequently, banks require a cost-effective means of assessing and monitoring loans, both individually and within specific areas of lending.

Where feasible, banks have already implemented streamlined screening processes. For example, banks have been willing to offer discounts over basic mortgage loans for individuals who are members of particular industry associations or employees of particular companies. Default rates for such individuals are presumably deemed to be lower than for the community as a whole and the bank does not need to embark on extensive screening and monitoring processes.

But such devices are not as readily available for small business, where there is greater variation in prospective profitability. In fact, given the often limited size of the borrowings involved, it can become prohibitive to assess and closely monitor loans based on cash flow alone. Partly as a consequence, banks have tended not to develop and maintain the skills required to lend on the basis of, primarily, a close relationship with and understanding of the particular business.

Instead, small businesses – especially start-ups and small businesses that need capital to expand – rely heavily on personal funds and debt secured against the family home or another asset. The 1995 Australian Yellow Pages survey of small business highlighted two things in this context. First, small businesses seeking finance have typically sought debt rather than equity; debt is less complicated, more readily available and does not involve a lessening of control. Second, most debt takes the form of bank lending and virtually all of it is backed by security of some form. For start-up businesses, this security is frequently the family home; for established businesses, the assets of the business are frequently used.

Of course, a suitable form of security makes it much easier for a financial institution to advance credit, especially if the security is in the form of the family home where valuation is not a major issue for the bank.

Banks do still offer unsecured finance to some customers under quite limited conditions. But the additional costs small businesses would have to encounter even if they wished to seek unsecured finance means that in practice a relatively small amount is extended.

The above discussion suggests that, while the lack of debt finance has progressively become a lesser constraint on small business growth, the requirement for cost-effective screening and monitoring by banks has meant that the system is heavily reliant on the quality of the security available. For social enterprises and economically disadvantaged areas, this will become an issue. In some instances there may be no security and in others it is unlikely to provide an adequate basis for the business proposition being contemplated. An alternative approach is needed.

Some implications for policy

Financial institutions have the finance, infrastructure and networks needed for the development of a comprehensive scheme to improve the access to capital by economically disadvantaged communities. But at the same time, the above discussion highlights that a reform proposal needs to recognise the following:

- i Support will be required to get enterprises ‘finance-ready’. In particular, financial institutions currently have limited skills and resources in-house to screen and monitor the types of projects that are envisaged including social enterprises. Accordingly, public sector involvement

may be needed at the early stages of any project. But over time, the policy response should encourage banks to build suitable in-house skills and knowledge.

- ii Where available, both the bank and the borrower will find it attractive to make use of suitable security.
- iii Private equity may also be a useful complement to debt for some projects.

10.3 Applying income contingent loans

An integrated programme

The proposal now developed is based on the premise that the three parties involved, namely the enterprise, government and financial institutions, all contribute financially to the project. The reasons are as follows.

For the enterprise, the case for having some involvement is to minimise both ‘adverse selection’ and ‘moral hazard’. In the absence of some finance from the enterprise itself, adverse selection takes the form of those willing to participate being those least likely to succeed, since it is likely they have had difficulty finding assistance otherwise. This prospect is reduced with its financial participation because the enterprise then needs to be prepared to face some financial losses with respect to the project.

Moral hazard is likely to be more important and takes the form of there being lower incentives to make the enterprise succeed when there are low or zero costs from failure. That is, if the government simply offered a grant to a project so that there was no need for the enterprise to put some of its own resources in jeopardy, there would be less incentive for the enterprise to succeed.

Having support from the public sector seems warranted because of the presumed social benefits of the project and/or market failure in the financial system. This does not necessarily mean that there should be large subsidies, because the form of the collection of this part of the debt – that is, on the basis of the future profits of the enterprise – in itself constitutes a benefit for borrowers that can only be provided by the public sector. This is because, as argued in Chapter 3 and reinforced in several of the ICL case studies of the book, only government currently has the administrative apparatus to effectively collect an ICL. Moreover, the government has a clearly defined right by law to access information concerning the revenue and profits of private firms, and it is not obvious that this is the case with respect to the private sector.

The active involvement of the banking sector is also required and will be particularly important. It has the infrastructure in place to raise the capital, screen applicants and monitor performance. The last two functions are critical to making sure that both adverse selection and moral hazard

are minimised, issues promoted for discussion in all the other ICL case studies of the book.

The major issue of adverse selection with respect to eligibility for ICL support needs to be reinforced in the context of both bank and enterprise involvement in social investment projects. ICLs help protect individuals or businesses from the most costly aspects of failure, such as default, and also generally mean that those involved in the most successful ICL endeavours repay relatively high proportions of the loan. To avoid the potential high costs of poor selection, incentives need to promote the vetting role of banks in the process.

It needs to be recognised that only limited finance is finding its way to community and other projects of concern here. This seems to reflect that Australian banks are not closely attuned to the types of issues that arise and/or the cost of building the necessary skills and systems could make such lending prohibitive.

One possible option would be to introduce broader social objectives into banks' licence conditions. In effect, this is the case in the United States where banks are required to meet targets associated with particular groups in the community. In recent years, corporate Australia – and the major banks in particular – have increasingly recognised that being actively involved in addressing social objectives can make good business sense. Against this background, there is the opportunity to develop schemes that build on the banks' existing operations with various government programmes.

The above discussion highlights the desirability of a programme that contains the following three characteristics:

- i sufficient flexibility to ensure an ability to support local initiatives that may come in the form of quite different ownership structures. In particular, the nature and extent of collateral will vary as will responsibility or accountability for the project's success. The extent and mode of financial support will vary across projects;
- ii an alignment of incentives with, for example, sufficient equity or other forms of commitment from the borrower to foster the project's commercial viability; and
- iii the support from government to get projects to a stage where they are finance-ready.

Any such project will need initial vetting and close monitoring throughout. It is unrealistic to assume that government could play a useful ongoing monitoring role; rather, it is best placed to help projects get off the ground, and do so in a way to maximise their chance of ultimate success.

From the government's point of a view, a two-stage approach is envisaged with a separate government agency involved at each stage. The nature and functions of these stages are now described.

Stage 1 – pre-financing

The proposal would initially be vetted under a new government scheme, perhaps to be called the Social Enterprise Initiative (SEI). Under the SEI, proposals would be assessed and feedback and support would be provided. Where additional work is deemed necessary to develop proposals to a finance-ready stage, the SEI would be able to:

- i tap into the range of programmes already in existence and
- ii provide grant money to *partially* fund the refinement of proposals e.g. for the production of a detailed business plan. The level of such grants would vary, but could range between say \$A5,000 and \$A50,000.

In some instances, the feedback from the SEI may take the form of identifying gaps in management or other skills that the enterprise will need to satisfy a financier of its likely commercial viability.

Suitable proposals would then be referred for consideration for financing. The SEI would perform a valuable part of this process by reducing the screening costs that past experience suggests would seriously restrict the extent of private funding that would be forthcoming.

Stage 2 – financing

There are three parties to the financing: the enterprise, the government and the relevant financial institution. In most projects being considered, the additional private finance being sought will take the form of debt and the financial institution will be a bank. However, private equity injections will be appropriate for some proposals and it is important that the vetting process keeps this option open. Indeed, the involvement of, say, a venture capital fund may bring more management skills to the table than would a bank.

The government's role in assisting the financing would be the responsibility of a separate agency, perhaps to be known as the Office of Social Enterprise Finances (SEF). This would be independent from the Office of the SEI in order to ensure that financing decisions are made on an arms-length basis from the development of any proposal.⁸

Public financial support will take the form of profit contingent loans. Having support from the public sector is justified because of the social benefits of the project and/or market failure in the financial system. This support takes two forms, namely any subsidy embedded in the loan itself and the fact that the form of the collection of this part of the debt – that is, depending on the future profits of the enterprise – in itself constitutes a benefit for borrowers that can only be provided by the public sector. These issues are explored below.

As outlined above, the possible projects will inevitably represent a

spectrum with some having a stronger community element while others will have a stronger private element. For example, a project with minimal social benefits may still be attractive since funds would be flowing into a depressed area; the individual(s) involved would be required to provide greater collateral making monitoring and the involvement of the banks easier; and the overall scheme could more readily reach a scale that is attractive to the continuing involvement of banks. The contribution from public funds would also be less for individual projects where the social benefits are low.

On the other hand, the benefits to be derived from broader community based projects would be larger, but some inherent difficulties would have to be overcome. In particular, it may be more difficult to get real ownership from the principals involved (and thereby minimise moral hazard problems). For example, the initial contributions may have come from community fund-raising with the drivers of the project being motivated by doing 'good works' rather than a stronger commercial imperative. In such circumstances, suitable buy-in by those involved can still be achieved, but the design, selection and monitoring elements of the scheme become critical.

Accordingly, the Office of the SEF will determine the appropriate level of profit contingent loans depending upon the expected community benefits from the project and the extent of the buy-in from those involved in the enterprise. There could also be the option for the Office of the SEF to provide some direct grant for particularly desirable projects if this were deemed necessary to make the project a viable commercial proposition. Many different possibilities are available with respect to the examples considered below.

After determining the extent of public support, the Office of SEF would coordinate with the relevant financial institution – for example, a bank or venture capital fund – to bring the full package of financing together. The examples set out in detail below provide illustrations of the appropriate balance between each element.

As an aside, the above stressed the need for the close involvement of a bank (or other financial institution) to ensure that the projects operate as commercially as possible. However, at the initial stages, the banks may be reluctant to be involved given the limited size of the programme and the lack of a track record. Accordingly, it might be necessary in the early stages for the programme to operate as a pilot with banks being paid a fee for vetting/monitoring services.

As the programme becomes established, the scheme could in principle be open to any bank. Instead, we recommend that banks tender to assume the role of principal debt financier for the scheme. The successful bid would be based more on the nature of the commitment the bank would bring to the task rather than any fee.

There are at least two attractions of having a single bank involved in the

early part of the scheme. The first is to include the benefits for the successful bank in terms of its corporate image and, over time, having a head start in establishing a potentially profitable new line of business. Second, for the government, there would be greater confidence that there would be an ongoing commitment to the success of the scheme given the participation of a large financial player.

The background to the collection process: income contingent loans

As noted in other case studies of the book, the basic ICLs idea is that agents provided with government assistance in periods of economic need should be expected to repay some part of this financial help when their future economic situation is more propitious. The conceptual basis, and some experience, of ICLs are explained in the first part of the book. The critical point is that having loan repayments based on capacity to pay provides the important benefits of insurance against default and relative smooth consumption or revenue streams.

These benefits of ICLs mean also that a social enterprise receiving public funds from the office of the SEF has access to finance with no repayment requirements at the early stage of the initiative when business returns to the investment are low or zero. Thus the funds from the ICL can be used to help repay the bank loan, thus decreasing financial pressure at the time of the establishment of the venture. Part ICL financing thus adds to the viability of the initiative.

The application of an ICL for social enterprise activities fits neatly with the contexts explained with reference to the other case studies of the book. In summary a profit contingent loan as part of a financing package for community investment projects has the following advantages.

- i The approach could act to improve the functioning of loan markets where social enterprise activities are below what a government might consider to be optimal.
- ii Because some part of taxpayers' subsidies would be recovered when the enterprise is succeeding commercially, there is an important equity dimension compared to grants based assistance, such as is the current case with drought relief (see Chapter 7).
- iii Not only is it fair that average taxpayers don't eventually foot the bill for all subsidies to successful enterprises, the fact that there are returns to the public sector should also be seen to be desirable because the associated potential to reduce Commonwealth budgetary pressures. The repayments thus allow the financing of more social enterprise projects than could be forthcoming if the scheme was solely grant financed (or lower taxes, or higher provision of alternative government services).

- iv ICLs essentially provide a form of revenue (or profit) smoothing, and thus diminish financial pressures on enterprises at the time in which this is most needed.

10.4 Repayment estimates

Introduction

The proposal advocated in this paper is aimed at providing better access to finance for a wide range of commercial and not-for-profit operations. Projects will vary considerably based on scale, the extent to which broader public benefits accrue, the nature of the commercial activity and the sophistication of the management team.

As such, for any scheme to be effective it will have to be flexible enough to respond to the specific circumstances. The incentives faced by each of the three stakeholders – that is, the proponents of the project, the financial institution and the government – will have to be suitably calibrated. Accordingly, the proposed Office of the SEI and, especially, the Office of the SEF will require a degree of flexibility in setting key parameters for each individual project.⁹

This flexibility, unfortunately, introduces a degree of complexity in the detailed arrangements for the scheme. Some of this complexity could have been avoided by designing a more rigid scheme; however, we judged that it is important for the incentives and obligations be introduced into each project in a way that is apposite for the specific circumstances.

What this does mean, however, is that the explanation of how the scheme will apply in practice becomes multifaceted. The following discussion is designed to illustrate how the scheme would work and provide a sense of how, over time, a significant proportion of funds outlaid can be expected to be returned to the taxpayer.

The discussion considers four generic types of projects which we will term ‘Cases’. In turn, within each generic Case, some projects will be (financially) successful, some will struggle but stay afloat, while some will fail. The worked examples assume a mix of success rates within each Case.

The different Cases are characterised by whether they are for-profit or not-for-profit ventures, and the degree of access they may have to assets that can be used as security for debt finance.

In particular, the four generic Cases are:

- Case (A) – Profit-making ventures that require a fair amount of physical capital (e.g. building or equipment). These assets can be used as security for bank debt.
- Case (B) – Profit-making ventures that require less physical capital, but where a longer period of cash flow support may be needed for the

projects to become viable. (For example, customer relationships will take time to establish for companies in the service sector.)

- Case (C) – Not-for-profit businesses with high turnover and low margins on goods sold (e.g. retail businesses).
- Case (D) – Not-for-profit business with higher margins on goods sold but higher labour costs (e.g. companies providing business services).

The repayment conditions are critical to an understanding of how the model works. The Office of the SEF will set these conditions at the outset for each project. In all cases, the enterprise will enter into a conventional contract with the bank, agreeing to meet a stream of (interest and principal) repayments along the lines as would apply in any commercial relationship.

In contrast, the repayment conditions for the funds from the government sector will be quite different because they take the form of a profit contingent loan and will vary according to the nature of the venture involve. In particular, the extent to which the projects can be expected to deliver commercial returns will have a critical bearing on which income base is used as the basis for repayment for the income contingent loan.

Consider first those projects expected to make a commercial rate of return. Projects falling under either Case (A) or Case (B) are aimed to be profit-making ventures where the element of public financing is made contingent on future profits. Where feasible, having payments based on profits has the desirable feature of minimising any distortionary effects on decision making. Consequently, it is proposed that repayments of the government loan be based on earnings after interest but before tax.¹⁰ (They are most appropriately viewed as being an income contingent interest payment rather than a tax.)

On the other hand, there will also be situations where ventures are undertaken either by not-for-profit organisations or where there is a strong community element involved and future profits are expected to be quite low.¹¹ Thus, for Cases (C) and (D), it is proposed that financing be contingent on operating margins.

Note that in each case, repayments are based on information that is already collected, as indeed is the case for the Botterill and Chapman ICL for drought relief.¹² In administrative terms this would seem to be straightforward. When the government loan finances are provided, the amount would be registered as a debt with the ABN (Australian Business Number) of the enterprise, and collected in the future in much the same way that HECS operates, although with profits or operating margins in this case, not individual incomes, forming the basis of the collection.

These examples only involve debt financing (including profit contingent debt from the government). In each Case there will be numerous parameters that need to be taken into account for the Office of the SEF to determine the precise arrangements to apply to each project. Also, the

likelihood of success – both in terms of the project evolving into a long-term viable entity and in what financial returns the government can anticipate from its initial outlay – will vary.

For ease of exposition, Case (A) is described in some detail with a discussion of the sensitivity of the results to the main parameters involved. This sensitivity analysis carries over to the other Cases and thus the discussion of these is much briefer.

Finally, it must be stressed that these worked illustrations are just examples. The precise parameters will be subject to the experience with pilot programmes as well as detailed negotiations with the various stakeholders (including financial institutions). And when operational, they will be subject to fine-tuning by the Office of the SEF to suit the needs of the specific project.

Case (A): a commercial venture with a need for physical capital

The types of business envisaged in the first set are for-profit ventures that require physical capital such as buildings or assets that are able to be leased. For example, this may include a retail business or a specialist business in a trade that calls for the use of motor vehicles and perhaps specialist equipment. In either case, there will be security to support at least some of the financing.

In every example that follows, it is assumed that \$A100,000 is required. This amount can obviously be scaled to reflect the reality of particular projects under the scheme.

It is proposed that the funds come from three sources with the details now explained below.

- A financial institution is assumed to provide \$A50,000 line of credit up-front. The loan is secured against initially a book value of \$A60,000 of physical assets. Given that this credit will attract interest, and the government is paid out of after-interest profits, the risk for the financial institution is low even though the project may be deemed to be high risk. Accordingly, a real interest rate of 5.5 per cent is assumed. (Any surplus cash is assumed to attract a similar interest rate in an offset account.)

These parameters are designed as a balance between making the proposition sufficiently attractive for the financial institution to be involved and to leave it with enough risk so that it continues to devote appropriate resources to monitoring and managing the project and its position.¹³ The parameters would be refined with greater experience in lending in such novel circumstances.

- The government is assumed to provide \$A30,000 in the form of a contingent debt labelled 'Social Enterprise Contingent Debt' or SECD.¹⁴ While the government is happy to seed the project, it may be desirable

for it to have an ability to scrutinise both the progress of the project and the commitment of the financial institution in the first few years. Accordingly, the \$A30,000 is assumed to be paid in three equal instalments.

The real interest rate to apply on the SECD is assumed to be 8 per cent for the first five years of the project. Thereafter, it would be set at 4 per cent, which is roughly the government's cost of funds. Repayments are contingent on the operation being successful. They are assumed to be 25 per cent of earnings (after interest but before tax) as long as such earnings are positive.¹⁵

- The proponents of the project are assumed to contribute \$A20,000 of capital up-front. An equity contribution will help to align the incentive structure, although the precise level of such a contribution would be determined on a case-by-case basis and will vary depending upon the extent of public benefits.

For ease of exposition, it is assumed that the project loses money in the first year, breaks even in the second year and then makes a constant return on the initial capital thereafter (unless it goes bankrupt). Of course, successful projects will grow over time whereas others will struggle. All calculations have been carried out in today's (Australian) dollars.

To illustrate the profile of the development of the projects and the repayment streams from the government's initial outlay, the projects are assumed to fall into four 'categories':

- Category 1 – 'survival': these projects are assumed to struggle to stay afloat, generating an assumed rate of return on capital of 6 per cent, that is, just above the cost of bank finance and above the interest rate applied to SECD debt after the first five years.
- Category 2 – 'solid growth': these projects prosper and would comfortably service debt and meet various benchmarks. This situation is characterised in what follows as generating returns on a fixed initial capital of 12 per cent. Alternatively, similar results in terms of the project's ability to service debt would be achieved if a somewhat lower rate of return were assumed but with retained earnings feeding into a greater expansion in the project.
- Category 3 – 'success': these are the real (financial) success stories with an assumed rate of return on capital of 20 per cent. (Again, the results would be similar if there were a somewhat lower return on capital but with retained earnings being used to expand the project.)
- Category 4 – 'failure': those projects that are wound up within a few years without delivering any returns to the public coffers.

Key financial variables for the first three of these situations are depicted in Figures 10.1–10.3.

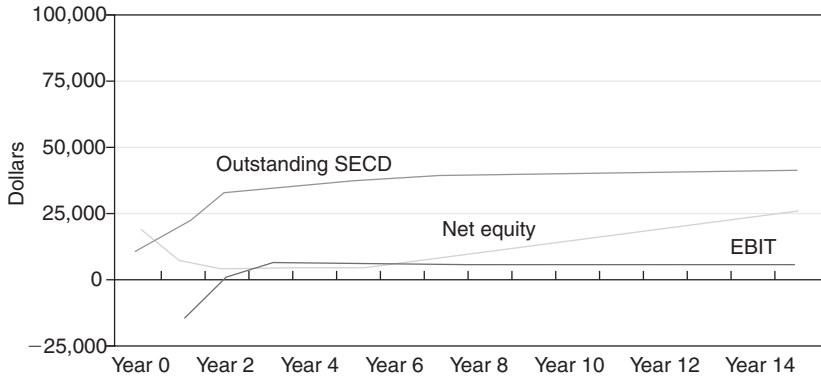


Figure 10.1 Case (A) – ‘survival’: 6 per cent return on capital (\$A).

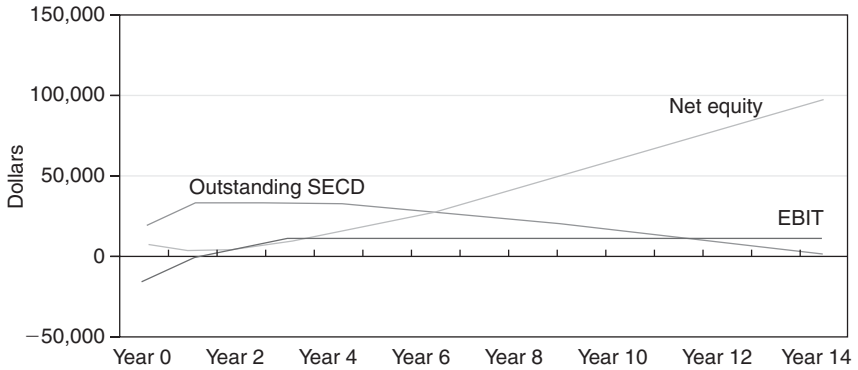


Figure 10.2 Case (A) – solid growth: 12 per cent return on capital (\$A).

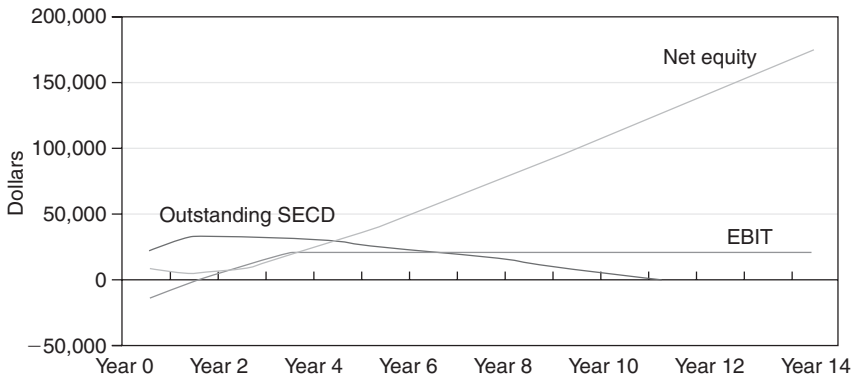


Figure 10.3 Case (A) – success: 20 per cent return on capital (\$A).

- Earnings before interest and tax (EBIT) simply reflects the assumed losses in the first few years followed by the 6 per cent return on \$A100,000 of initial capital.
- Net equity starts at \$A20,000, but is eroded in the initial years by the assumed losses plus the servicing costs on bank debt. It steadily recovers as profits are able to finance bank debt, the SECD and, after initial tax losses are offset, corporate tax. Note that net equity includes both tax losses and the (contingent) liability to the government, even though both these items will be uncertain in the initial years.
- The outstanding SECD increases in the initial years as the government's contributions are outlaid. The extent to which it is reduced in subsequent years reflects the extent to which payments exceed the assumed rate on this debt.

Note that, in the 'survival' category of businesses, the outstanding SECD liability is reduced very gradually since profits are low. A modification in some of the key parameters could bring forward the repayment stream. In addition, the project owners may wish to do so in any case.¹⁶ However, given this business is assumed to be operating near the edge, it is inevitable that the outstanding liability to the government will persist for a considerable period.

The other two groups of businesses are assumed to be more profitable and repayment occurs earlier, namely after around a decade of profitability for businesses generating 12 per cent returns and after four years of profits for businesses generating 20 per cent.

Obviously, the extent to which the entire programme will be self-financing will depend on the profile of projects that are supported. Effective selection and support from the Offices of the SEI and SEF will be critical as will the continuing monitoring by the financial institution and, in many instances, the local community.

Inevitably some businesses will not succeed. The evidence cited earlier concerning default rates for lending to SMEs (small to medium sized enterprises) suggests that this ratio may be relatively low, although the novelty of many of the projects to be supported will make the exercise more risky from a narrow financial perspective.

Figure 10.4 illustrates the overall impact of the returns to the public purse assuming 20 per cent of businesses fail, 30 per cent 'survive' (by delivering average returns of 6 per cent), 30 per cent provide 'solid' 12 per cent returns and 20 per cent are financial 'success' stories generating 20 per cent returns.

Figure 10.4 indicates that the initial \$A30,000 outlay would almost all be recovered after 15 years.¹⁷

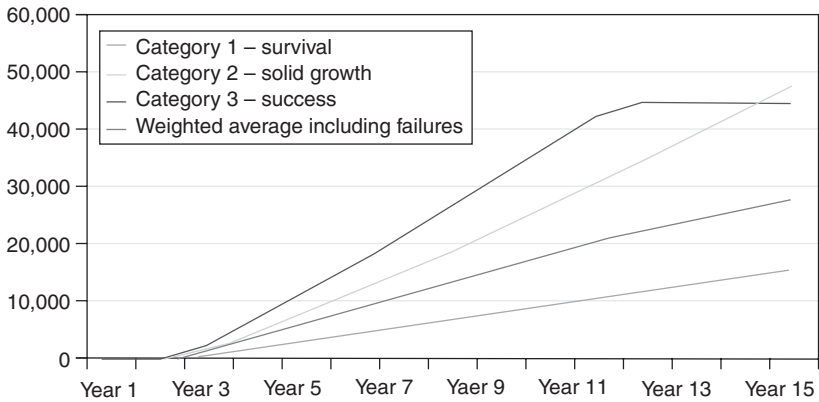


Figure 10.4 Profile of SECD repayments: Case (A) (\$A).

Case (B): a commercial venture with a need for cash flow support

The types of business envisaged in the second set are for-profit ventures that require longer gestation periods to become financially viable, as well as a need for less physical capital. Many of the businesses being envisaged would be in the services sector where reputation, brand and an innovative product are potentially cornerstones for the business.

Compared with Case (A), there would be less security available on which to support bank credit. Accordingly, the main changes when compared with Case (A) are:

- a longer period before the business becomes profitable. In the following example, break even is achieved in the fourth year and consistent profits thereafter;
- the requirement that the project proponents inject a larger amount of equity. In particular, it is assumed that the typical project would require \$A30,000 credit from a financial institution, a \$A30,000 contingent loan from the government and \$A40,000 of equity from the proponents.

The remaining parameters are the same as in Case (A). The results are qualitatively similar as illustrated in Figure 10.5.

Case (C): a not-for-profit business with high turnover¹⁸

The final two Cases relate to either not-for-profit businesses or businesses that are judged to have a strong community value but with little chance of generating significant profits. Accordingly, repayments cannot be based on

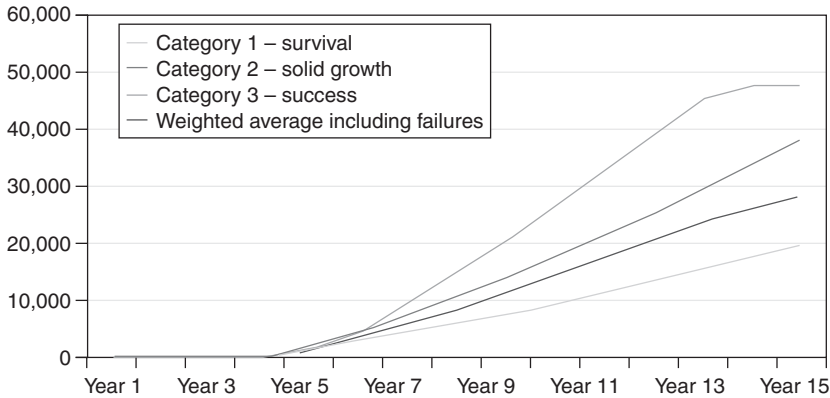


Figure 10.5 Profile of SECD repayments: Case (B) (\$A).

a direct measure of profits. Instead, it is proposed that they be based on margins as is done with the Goods and Services Tax (GST) base.

The challenge that needs to be finessed is to design a system that can cope with both:

- businesses with relatively low margins on a high turnover of goods such as in the case of businesses in the wholesale or retail industries (Case (C));
- businesses with minimal inputs of goods but where the costs largely relate to labour (Case (D)). Margins (that is, the difference between cost of goods bought and sold) will be quite large.

In each of these Cases, the parameters have been calibrated for the different extent of financial success to be roughly comparable with the four categories of success used above, namely ‘survival’, ‘solid growth’, ‘success’ and ‘failure’.

The major design characteristic that needs to be carefully selected here will be the repayment parameter. This applies to margins, that is, before operating expenses. For high turnover low margin businesses such as wholesale operations, an unduly high parameter will see the SECD being repaid promptly but at the risk of sending the business into bankruptcy.

In Case (C), we have assumed that goods are sold with an average mark-up of 36 per cent. This mark-up is used to pay operating expenses and service bank and SECD debt. We also assume that 3 per cent of the margins is used to repay SECD liabilities.¹⁹

Two features of the results are important for our discussions.

- The SECD repayment profile is not as sensitive to fluctuations in the underlying profitability of the project (that is, in comparison with the

earlier Cases where repayments were directly based on profits). Thus, in Figure 10.6, the trajectory of the repayments for the different categories of projects are more tightly bunched than for Cases (A) and (B).

- Related to this, the fate of any project in the ‘survival’ range will be sensitive to small fluctuations in some of the key parameters including the repayment rate.²⁰ It then becomes crucial that the arrangements agreed at the outset with the Office of the SEF are carefully calibrated.

Case (D): a not-for-profit business with low turnover and higher operating expenses

The final case will typically involve a service business with significant labour costs within its operating expenses. Given that operating margins (i.e. the gap between costs of goods and services bought and sold) is larger here than in Case (C), the repayment rate will need to be correspondingly lower. In Figure 10.7, a repayment rate of 1.8 per cent of the operating margin is assumed.

The above examples illustrate how a few key parameters can be adjusted to take into account the precise nature of the project involved. In each of the examples, the government can provide critical support to get what can otherwise be difficult projects off the ground. At the same time, the incentives that the project will face ensure that financial viability remains a key objective and the impact on the public purse over time is minimised.

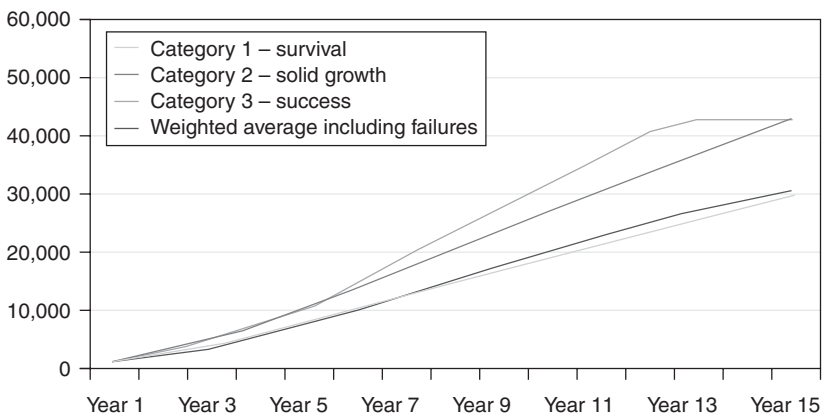


Figure 10.6 Profile of SECD repayments: Case (C) (\$A).

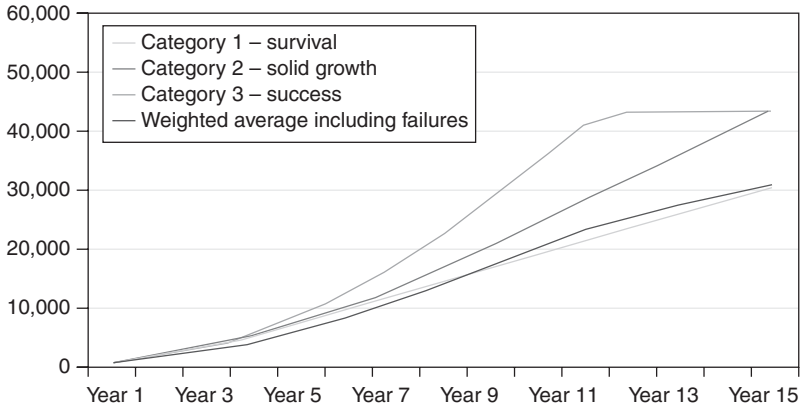


Figure 10.7 Profile of SECD repayments: Case (D) (\$A).

10.5 Conclusions

Fresh approaches are needed to channel increased financial resources in economically disadvantaged sections of the community. In Australia success stories are accumulating throughout the country with the rise of some promising social enterprises. But for such initiatives to reach a scale where substantial benefits accrue throughout the communities, the active involvement of government and financial institutions will be needed alongside local enterprises.

This chapter advocates a scheme based on profit contingent loans. The policy arrangement provides a mechanism whereby both banks and government contribute to social and other private enterprises, but where the drive and responsibility for success of individual projects rests squarely with the enterprise. Taxpayers will get a return from their investment in successful enterprises.

Because of the originality of the scheme, it is critical that there is some experimentation at the outset, perhaps through the introduction of different pilot programmes. With flexibility and the obvious potential for learning by doing, the basis for a firmer public sector commitment, and its nature, should be forthcoming.

Moreover, even as the scheme develops, the lending advocated here will entail risk. New businesses will be created and a number of them will fail. It is important not to shy away from such experimentation and natural selection. Indeed, as the OECD has emphasised, the ability to create new businesses *and* to replace poorly performing ones can be a major determinant of an economy's overall economic performance.²¹ These ideas are arguably more apt when applied to economically disadvantaged areas

where the greater vitality has the potential to bring both economic and social benefits. But it is worth reiterating that the scheme cannot work without the financial and insurance benefits of a profit contingent loan collected by government.

Notes

- 1 The chapter draws heavily on a previous version prepared for the Chifley Research Centre in late 2004. The views expressed are those of the authors only.
- 2 See especially McKinsey and Company (1994). SGS Economics and Planning (2002) provides a comprehensive review of the issues.
- 3 See Walker (2002).
- 4 See <http://www.dti.gov.uk/socialenterprise/strategy.htm#summary>.
- 5 See <http://www.dti.gov.uk/socialenterprise/documenta.pdf>><http://www.dti.gov.uk/socialenterprise/documenta.pdf>.
- 6 (Australian) Industry Commission (1991). Also around that time, the Australian House of Representatives Standing Committee on Finance and Public Administration (1991) formed similar views in a related inquiry in financial deregulation.
- 7 For example, the adequacy of bank lending has not registered as a primary concern in the Yellow Pages survey of small business over the past four years. On the other hand, Hindle and Rushworth (2002) found that while more risk capital was available, and while the high level of home ownership in Australia helped small business get finance, there were still difficulties in obtaining early stage equity finance and debt capital.
- 8 That is, the two stages will assist in the governance aspects of the public sector's involvement.
- 9 See Section 10.3 for a description of these Offices.
- 10 That is, for tax purposes, the repayments are akin to interest payments rather than a top-up to corporate taxes.
- 11 Indeed, the primary motivations for many projects may not be profit contingent and prudent financing of the project could not be realistically based on an expected stream of profits.
- 12 Botterill and Chapman (2004) suggest and explain a similar arrangement for farmers to repay some proportion of drought relief.
- 13 For example, the financial institution is likely to receive less than its \$A50,000 exposure from the sale of the physical assets in a fire-sale situation.
- 14 As outlined in the text, the government may also fund some of the initial feasibility work through the Office of the SEI. Such funding is assumed to be in the form of grants and is not included in the worked examples.
- 15 While such a payment may appear to be akin to a tax, it is best viewed as an agreed arrangement to repay debt according to the profitability of the operation. Nonetheless, the repayment parameter selected will have to recognise possible disincentive effects if it is too high. A repayment rate of 25 per cent from before-tax earnings means that the enterprise is able to retain 48 cents in the dollar of earnings after interest while the government loan is being repaid. (In practice, the enterprise in the early years is likely to have tax losses carried forward and the effective tax rate – and any resultant disincentive effects – will be lower and the amount retained higher than the 48 cents in the dollar cited here.)

- 16 In particular, the design of the system provides a modest tax incentive for early repayment given that any repayment of the debt – as with any interest charge – is tax deductible.
- 17 Assuming a real discount rate of 4 per cent, the NPV (net present value) of the repayments is around \$A21,000 after 15 years.
- 18 Note that while we are considering not-for-profit entities, this does not preclude the particular project being profitable and generating an income stream for the rest of the entity.
- 19 Note that 3 per cent of operating margins in Case (C) yield a similar repayment stream as 25 per cent of earning (after income but before tax) in Case (A).
- 20 To some extent, this sensitivity reflects the mechanical nature of the experiments conducted here. If market conditions allow the project some flexibility in adjusting margins and/or scale, the project will be able to be more robust.
- 21 See Bickerdyke *et al.* (2000) for a discussion of this point.

11 Income contingent loans for low-income households¹

Joshua S. Gans and Stephen P. King

11.1 Introduction

Homeownership is a major goal for many Australian households. For households that have low, irregular incomes, however, homeownership and even adequate rental accommodation may be unachievable. In this chapter, we consider the housing problems facing low-income households and how these households might be helped through a system of income contingent loans (ICLs) that provide a type of insurance for housing. We call this ICL system a 'housing lifeline'.

Australia has one of the world's highest levels of homeownership. In 1999–2000, there were around 7.2 million households in Australia. Approximately 70 per cent of these households lived in their own home while 26 per cent rented accommodation. While current homeownership rates are approximately 69 per cent in the United Kingdom and 67 per cent in the United States, they are only approximately 41 per cent and 51 per cent for Germany and the Netherlands respectively (Productivity Commission 2003, p. 29).

Further, by international standards, a large proportion of Australian homeowners – almost 90 per cent – live in stand-alone or separate houses. In this sense, the quality of home that is owned by most Australian households is high compared to countries where apartment living is the norm.

Traditionally, however, many low-income households in Australia have been excluded from homeownership and rely on the rental market for their housing needs. Further, these low-income households are more likely to be dependent on government housing. To give an example, if we consider households comprising an adult couple with children, approximately 79 per cent own their own house and only 20 per cent are renting. Conversely, for one-parent households, only 49 per cent are homeowners, 30 per cent rent from private landlords while 17 per cent rent from State or Territory Housing Authorities.² Of all renters, approximately one-quarter rely on housing provided by a government authority.

For both owners with a mortgage and renters, housing costs Australia-wide come to approximately 20 per cent of gross income. But housing

costs as a percentage of income vary significantly between geographic locations and between households. In particular, low-income households may find adequate housing unaffordable, particularly in high-cost areas of Australia such as Sydney and Melbourne.

Housing affordability for low-income households may be exacerbated or assisted by the interaction between different markets for housing and between housing and associated markets. As noted by Rothenberg *et al.* (1991, p. 3), '[h]ousing is not ... a single commodity but a complex of variously related commodities; the urban housing market is not one perfect market but a set of interrelated submarkets'. Housing differs substantially in terms of quality between inner-city apartments, affluent separate dwellings and outer urban public housing. For many households, housing is also a major investment asset. Indeed a house is the single largest asset most households will ever purchase.

Housing markets are inextricably linked with each other. As new high quality dwellings are built and purchased by the most affluent households, lower quality housing becomes more affordable for purchase by lower income households through a type of 'trickle down' process referred to as 'filtering'. The rental market and the market for homeownership are similarly connected through factors of supply and demand. For example, the construction and purchase of inner-city apartments in Sydney, Melbourne and Brisbane for investment purposes has driven the rental returns on these apartments down to approximately 3 per cent in 2003 (Productivity Commission 2003, p. 21).

Housing markets are also tied in with financial markets. Most households require borrowed funds to buy a house and the lack of availability of mortgage funds can limit the housing options for low-income households.

In order to design government policies to appropriately assist low-income households with their housing needs, it is important to understand both the drivers of housing affordability and the linkages between housing markets and related markets. In this chapter we will argue that government policies towards low-income housing have often been geared towards households with a long-term income problem. In other words, governments and welfare groups have concentrated on households that face long term affordability problems for housing. An obvious solution for households facing a long-term problem of housing affordability is for the government to provide on-going rent assistance for these households, or for the government to directly provide housing for these households. As we note below, such policies have been widely adopted in Australia and overseas.

While some low-income households are well served by these policies, they fail to address the needs of households who face a short-term income crisis. We argue that these households can be better served through a system of income contingent loans, similar in motivation and justification as the other ICLs examined in this book.

As we explain below, this 'housing lifeline' would not simply provide *ex post* protection for low-income households but would also increase *ex ante* accessibility to housing and related financial markets for low-income households. A system of income contingent loans for housing reduces risk for both the buyers and providers of housing services, both from bankruptcy and with respect to the payment difficulties associated with other forms of financial assistance. As well, the proposed system helps to eliminate the undesirable consequences of asymmetric information in housing markets.

11.2 Background issues and the nature of the problem

Housing affordability

Low-income households face a housing crisis if adequate housing is unaffordable. In Australia, the past decade has seen low interest rates, low unemployment and a relatively stable macroeconomic climate. These factors have resulted in a significant rise in the price of (owned) houses. Australian Bureau of Statistics figures show that over the three years from July 1998 to June 2001 the weighted average price of existing dwellings in Australia's capital cities rose by almost 8 per cent per year.³ This increase in housing prices feeds directly into rental prices, although as noted above, the rental market, for example in inner Melbourne and Sydney, has been complicated by a significant growth in apartment stocks in recent years.

While the increase in housing prices reflects general prosperity in Australia, this prosperity has not necessarily been evenly distributed over the population. In particular, a rise in general house prices can lower the affordability of housing to those households who are dependent on low incomes.

Housing affordability is often defined relative to household income. For example, the National Housing Strategy (1991) considered housing to be affordable if 'housing costs . . . leave households with a sufficient income to meet other basic needs such as food, clothing, transport, medical care and education'. Under this definition, if a household is spending more than 25 per cent (for rent) to 30 per cent (for mortgage repayments) of its income on housing, then that household is experiencing an affordability problem.

Of course, this type of definition of affordability could apply to high-income households who spend a lot on housing. Thus, this benchmark on affordability is usually only applied to households that fall into the bottom 40 per cent of the overall distribution of income. In Australia, in 2001, the affordability threshold based on 30 per cent of the second quintile of average weekly household income was only \$A141 compared with the median weekly rent in Australia of \$A183 and a median weekly mortgage repayment of \$A230.⁴ Berry and Hall (2001) determined that the proportion of private tenants in the bottom 40 per cent of the overall distribution of income paying more than 30 per cent of household income on rent is

around 70 per cent Australia-wide, with an even higher rate in Melbourne and Sydney.

A definition of housing affordability that considers housing costs as a proportion of income does not allow us to easily distinguish between a housing problem and a low-income problem *per se*. Low-income households could be experiencing problems with housing affordability for two alternative reasons. The first is that these households, because of their low income, are finding many of the essentials for daily life to be unaffordable, including housing, food and clothing. Thus, their income is low relative to the general cost of living in society and these households have an income problem rather than a specific housing problem. Alternatively, low-income households may be finding it hard to make ends meet because housing, as a specific commodity, is highly priced relative to other essentials and as a result housing eats up much of the household's disposable income. Such a family has a problem of housing affordability.

To separate between issues of housing affordability and issues of general affordability, Glaeser and Gyourko (2002) adopt an alternative approach. They argue that a housing affordability problem arises when housing is expensive relative to its fundamental costs of production, including construction, taxation and regulatory costs. For this reason, they advocate using a benchmark of the physical costs of constructing a house as a means of determining whether and where housing is too expensive.

If we believe that there is a housing crisis, then presumably the correct housing response will be to build more housing. However, the social cost of that new housing can never be lower than the cost of construction. As such, for there to be a 'social gain' from new construction it must be the case that housing is priced appreciably above the cost of new construction.

(*ibid.* p. 2)

Using this approach we can gain a sense of the affordability problem by comparing housing prices in a particular area to the construction costs in that area.

As can be seen from Figure 11.1, house prices have increased at a faster rate than the cost of building materials in Sydney. A similar pattern is evident in Melbourne in relation to house prices and construction costs in general (Figure 11.2). In other capital cities, a divergence between house price increases and construction costs is a relatively recent phenomenon (occurring in the last two years or so).

The potential divergence between construction costs and overall house prices can be seen from the following table reproduced from the Australian Consumer Association (2003). In this table, 'project houses' include the costs of housing without land while 'established homes' include both land and house prices as a package.

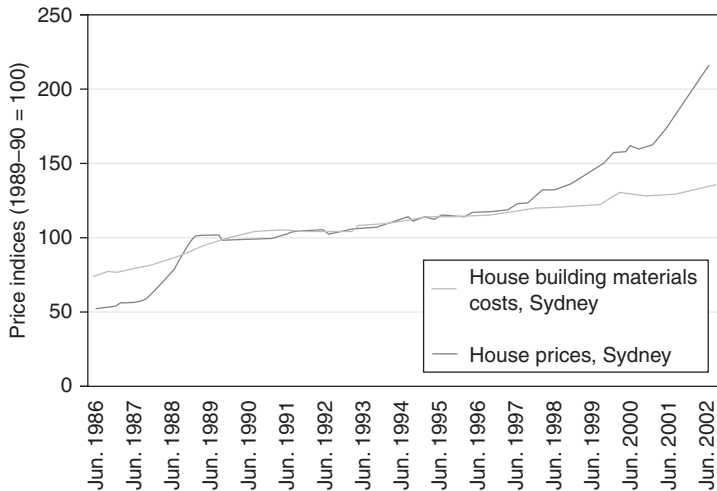


Figure 11.1 Sydney house prices and building materials costs (source: ABS 2003b, c).

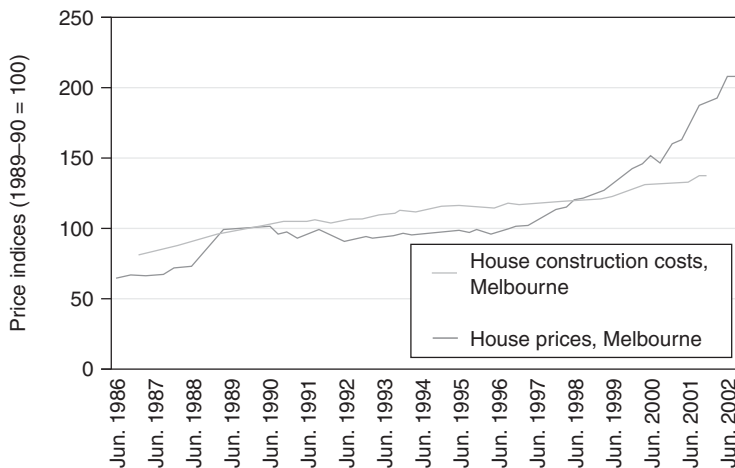


Figure 11.2 Melbourne house prices and construction costs (source: ABS (2003b) and construction costs from author calculated index releasing of data from Rider Hunt (2003)).

Notice that, in Sydney, Melbourne, Brisbane, Perth and Canberra, there is a growing divergence between construction costs and house prices. This is not evident in other cities. Indeed, in Hobart and Darwin, there is a trend in the opposite direction; suggesting an improvement in housing affordability in those cities.

Table 11.1 Real price increases (%) June 1986 to September 2002

| | <i>Project houses</i> | <i>Established homes</i> |
|--------------------|-----------------------|--------------------------|
| Sydney | 23 | 121 |
| Melbourne | 6 | 79 |
| Brisbane | 16 | 64 |
| Adelaide | -3 | 11 |
| Perth | 5 | 50 |
| Hobart | 2 | 1 |
| Darwin | 27 | 17 |
| Canberra | 9 | 31 |
| Average (weighted) | 11 | 75 |

Note

Nominal price increases deflated by CPI – statistics series available only from 1986.

To the extent that housing affordability, particularly for low-income households, has fallen in a range of Australian cities, there is scope for government assistance to low-income households. Roughly speaking, these government policies can be classified as either supply-side responses or demand-side responses.

Government housing policies for low-income households: supply-side issues

Supply-side policies around the world typically comprise a variety of public housing projects and developments. In Australia, the bulk of public funds for housing development come through the Commonwealth–State Housing Agreement. This agreement involves capital grants to State Housing Authorities who in turn provide public housing and direct aid to community housing organisations for social housing. These payments also fund crisis accommodation, and loans and grants to private investors to offset initial costs.

In the past, United States housing policies have had a similar thrust. In recent years, however, there has been a move away from supply-side to demand-side policies (Quigley, 2000).

In Britain, there is a long tradition of state-provided public housing; usually managed by local councils. This policy has undergone a revolution in the last two decades with strong moves towards owner–occupier solutions and private sector ownership. This has been achieved primarily by substitution of government funds for demand-side policies. In the Netherlands, a significant level of housing stock remains in public hands with management provided by housing associations in a largely decentralised manner.

A recent major proposal to address low-income housing affordability in Australia commissioned by the Affordable Housing National Research

Consortium (AHNRC) has focused on a supply-side response. The AHNRC is a national committee with representatives from the housing, building and development industries, trade unions and not-for-profit organisations. It commissioned the Australian Housing and Urban Research Institute (AHURI) and the Allen Consulting Group to undertake an extensive study into the nature of the affordable housing problem and the options for public policy in this regard.

Their report (AHURI 2001) advocated and costed a preferred policy response that involved the following:

- Public debt raising. The state and territory governments should raise debt through a long-term bond issue at market prices to private investors. Institutional investors were seen as potential purchasers of these bonds in the current environment of low public debt in Australia.
- State government acquisition of new and existing dwellings. Housing authorities in each state (or SHAs) would use the funds to acquire dwellings.
- Federal government subsidised rent. Those dwellings would be let out at low rents to eligible tenants. This will mean that the returns on the government dwellings will be insufficient to cover the bond financing costs (as these are at market rates) and the operating costs on the dwellings. The gap would need to be covered by the Federal government for the life of the programme.
- Progressive sale. The dwellings would not remain in public hands indefinitely but would be progressively sold off when they fell vacant. The sale would be used to repay debt.
- Sunset. Those dwellings still in government hands at the end of 20 years would be sold and the remaining debt would be retired. Sitting tenants at that time would have to be relocated. Of course, it is also possible that an SHA may decide to retain this stock in public hands. In this case, state governments would be required to bear subsidy costs.

The Consortium argues that this programme is cost effective for the Federal government because for each dollar in subsidy, \$A4.50 in housing can be acquired – that is, \$A3.50 comes from private investors. This is compared to the alternative where all \$A4.50 comes directly from the Federal government.

It is argued by the Consortium that this approach involves a public-private partnership and brings new private funds into public housing. Such a claim, however, is simply an illusion of accounting. Government expenditures on housing can and always have been met by a combination of taxation and government debt. The Consortium is arguing for an increase in debt rather than taxation to fund public housing. They

compare this to the alternative where public housing is funded totally out of taxation revenues. As Berry (2002, p. 9) notes: 'the Consortium model reinvents public borrowing for social housing'.

The AHURI proposal suffers from the presumption that those households who are not adequately served by an unfettered private housing market must be removed completely from this market. Such a presumption leads to a policy where public housing is financed, owned and managed by the government.

The fallacy underlying the above presumption was recognised by the great urban activist Jane Jacobs. When considering the housing needs of low-income households, she notes that:

these are people whose housing needs are not in themselves peculiar and thus outside the ordinary province and capability of private enterprise, like the housing needs of prisoners, sailors at sea or the insane. Perfectly ordinary housing needs can be provided for almost anybody by private enterprise. What is peculiar about these people is merely that *they cannot pay for it*.

(Jacobs 1961, pp. 323–4; italics in original)

Inadequate private provision and allocation of housing does not necessitate public provision and allocation of housing (e.g. Olsen 2001). Further, public provision and allocation of housing necessarily ignores significant aspects of individual tastes and preferences. In other words, public housing, while attempting to solve a failure of the private market, also neglects the benefits of housing allocation associated with the private market. It replaces individual and household choice with some form of bureaucratic decision making.

Government housing policies for low-income households: demand-side issues

While supply-side policies focus on government provision of housing, demand-side policies assist households to gain suitable housing through the private market. Thus, demand-side policies involve less micro-management than supply-side policies and provide greater discretion to the recipient households.

A common policy, both in Australia and overseas, is to provide low-income households with rent subsidies. This type of policy has many forms, including subsidies paid directly to low-income private tenants and direct payments to landlords to 'compensate' for the provision of housing to low-income households. The calculation of the relevant subsidies, eligibility criteria, specificity of the payments and mode of payment differ widely between jurisdictions.

In the United States, part of the Section 8 voucher programme provides

subsidies for low-income households who choose to live in a certain minimum standard of accommodation. The subsidy covers the difference between 30 per cent of the household's income and a defined 'fair market rent'. The scheme is administered through a local public housing authority which determines the 'fair rent' for the unit. The relevant household, once they rise to the top of a waiting list, can search for any dwelling that satisfies the programmes requirements.⁵ The public housing authority then pays the subsidy directly to the landlord on behalf of the tenants. The tenants pay the difference between the subsidy and the actual rent of the dwelling. Eligibility for the programme is geographically based, with relevant households having less than 50 per cent of the median income for the relevant area.

In Australia, a similar type of rental assistance is available, for example to individuals who receive a government pension or to households with dependent children who satisfy relevant criteria under the family tax benefit scheme. Payments are made to households who rent a dwelling from a private landlord and the payment is made to the household in addition to the other benefit payments being received by the household.⁶ Rent assistance is calculated at three-quarters of the rent being paid by the household above a minimum threshold, up to a maximum payment. For example, for a family with a single adult and one or two dependent children, the maximum payment in 2003 was \$A109.48 per fortnight. Rent assistance only applied if the rental bill was at least \$A109.06 per fortnight and the maximum rent (to receive the maximum payment) was \$A255.03 per fortnight. The payments do not vary across cities or regions. For this reason, it targets low nominal income rather than low real income households.

Rental assistance schemes need careful design. Because they tend to be based on current rather than lifetime income, they can easily lead to poverty traps for low-income households. These programmes may be viewed by governments as a drain on funds, and as the US experience shows, they may involve funding that only covers some and not all low-income households. Depending on the form of payment and the dwelling criteria, these schemes may distort dwelling choice. For example, the Australian scheme which has an *ad valorem* subsidy effectively reduces the marginal price of housing to low-income households once rent is above the minimum threshold and until it reaches the maximum. Such a subsidy will tend to push rental demand towards the maximum thresholds. This can involve households choosing 'too high' a level of housing relative to other inputs of equal or greater importance to family welfare (e.g. clothing, food, education, child care). It can also lead to 'bunching' in the rental market, where much rental accommodation is offered near the maximum cut-off with a reduction in more moderate housing.

The design of the US Section 8 programme leads to restrictions on the choice of housing by its users. The minimum standards condition com-

bined with a top spending limit of 40 per cent of income greatly reduces the range of quality of housing that can be selected by tenants in the programme. The minimum standards condition necessitates regular inspections by the authorities and additional upkeep by landlords. This burden would decrease the supply of properties made available by landlords for this programme.⁷

The waiting lists associated with the section 8 programme mean that it is unlikely to assist those households facing short-term, temporary distress. In addition, once a household reaches the top of the waiting list they may need to move home in order to participate in the programme, due to their current dwelling not meeting the programme minimum standard. This clearly increases the transaction costs inherent in the programme and effectively reduces the choices of participants who wish to remain in their current dwelling.

Governments may assist low-income households to purchase housing rather than rent housing through some form of 'ownership subsidy'. The first homeowner scheme in Australia represents an ownership subsidy scheme. It only applies to first homeowners and has very broad eligibility criteria. In this sense, it does not focus on low-income households, although such households also enjoy the benefits of the scheme.

The US section 8 programme includes vouchers for first homeowners. Like the rental vouchers programme, it is administered through public housing authorities and has minimum quality requirements for the dwelling. The scheme has minimum and maximum income criteria and also an employment criterion. It is generally only available to first homeowners. This said, there is no separate funding for this homeownership scheme. Public housing authorities who participate in the scheme must draw funding from other voucher arrangements and authorities do not have to participate in the scheme.

Governments may also use the tax system to implement demand-side housing policies. In the US, the Low-Income Housing Tax Credit programme provides tax relief for investors in long-term low-income housing. There is certainly scope, therefore, for governments to use tax relief to encourage investment in housing for particular types of households. However, the scope for tax relief to low-income households themselves is limited by the fact that those households usually do not incur significant levels of tax relative to housing costs.

A number of alternative demand-side policies have recently been mooted in Australia. Gavin Wood (2001) formulated a proposal that is similar to the US low-income housing tax credit. He proposed two reforms to the tax system.

- *Income tax credit.* Investors with dwellings that have rents below a certain threshold (Wood considers \$A100 per week), would receive tax credits.

- *Capital gains tax reform.* There would be relief from capital gains tax on the first \$A10,000 of capital gain for these dwellings.

As formulated by Wood, this policy would be an entitlement to any investor at the lower end of rental accommodation. The policy, at its heart, is a government subsidy, albeit that it is organised in a non-transparent way through reductions in taxation payments. The policy also raises issues of accountability relating to length of low-income tenancy, the legitimacy of tenants and the nature of the dwelling. The policy may lead to the inappropriate downgrading and degradation of some housing stock, in order to meet the programme requirements.⁸ Such a scheme would need to be carefully designed to prevent gaming by investors.

Caplin and Joye (2002) discuss the possibility of using shared equity schemes to increase housing affordability. Under this system, a lender, such as a bank, would retain an equity interest in a dwelling, reducing the amount of capital required to be borrowed by a household seeking to buy the property. A household would then be able to 'balance' its debt and equity exposure to the housing market, much as commercial businesses manage their mix of debt and equity financing.

While a shared equity scheme may assist to improve overall housing affordability, it is not geared to low-income households. As we discuss below, many of these households face significant problems when attempting to access traditional financial or rental markets, so that a share equity scheme by itself may do little to benefit low-income households.

Low-income households and market failure

The government policies discussed above tend to focus on longer-term solutions to housing affordability for low-income households. In other words, the policies are geared towards households who not only have current low income but are likely to continue to have low income for the foreseeable future.

However, housing affordability is often a problem for low-income households due to temporary distress. A low-income family might find housing affordable most of the time, but can remain vulnerable to income shocks that make housing unaffordable for short periods of time. For example, consider a low-income family whose main income earners often experience short spells of unemployment. This may reflect the nature of the jobs held by family members. While over the household's 'life cycle' it might have adequate income for housing, at particularly stages of that life cycle, housing may be temporarily unaffordable. For example, housing stress may occur when children are young, particularly if this coincides with a period of unemployment for an income earner.

Similarly, low-income households may be adversely but temporarily hit by short-term income shocks, for example due to illness or accident. These

shocks may make housing unaffordable in the short term. Government policies aimed at long-term housing relief, particularly those policies that involve moving to particular dwellings, will often be inappropriate in these circumstances. Indeed, to the extent that a household must 'lose' its current housing before it can receive government assistance or faces high effective marginal tax rates once government assistance is accessed, government policies may inadvertently change short-term housing distress into a long-term affordability problem.

In theory, financial markets should be able to deal with problems of short-term loss of income. However, it is well understood that financial markets suffer from potential problems of asymmetric information that may lead to market failures such as credit rationing.⁹ These market failures will fall most heavily on low-income households.

Credit rationing arises due to adverse selection problems in financial markets. Potential lenders may have difficulty distinguishing between individuals who would be able to make repayments and those who cannot. As a result, potential lenders may be reluctant to provide funds to customers who appear more risky; for example individuals with a lack of credit history or who are proposing more risky investments.

This problem of asymmetric information is different from a problem of risk. After all, risk accompanies all lending and, in the absence of information asymmetries, more risky borrowers would simply face higher interest rates than less risky borrowers. Rather, the problem is that the potential lender cannot adequately distinguish between high and low risk borrowers and so may be reluctant to lend any funds.

Note this problem of uncertainty is paralleled in the provision of private sector finance for higher education, as elaborated in Chapter 2, and among other possible ICL applications including for drought relief (Chapter 7) and social investment projects (Chapter 10). That is, lenders find it difficult to determine which borrowers in these contexts will be able to make repayments and which will struggle. With respect to student borrowers, for example, there is a lack of suitable collateral in the case of default, leading to the under-provision of finance.

Further, the problem of information cannot be solved by simply raising the interest rate on borrowed funds. Raising interest rates may simply act to dissuade the low risk borrowers leaving only the high risk borrowers. After all, the high risk borrowers, who know that there is a higher chance they might default on the loan, will be less influenced by interest rates. In this way, a simple interest rate charged equally to all potential borrowers, adversely selects for borrowers with a higher risk profile. To attempt to solve this problem a lender might try to ration credit; attempting to infer borrower risk through indirect means.

In the financial markets that provide loans for purchasing housing, a number of standard tools have developed to deal with adverse selection. Lenders often ration credit on the basis of income history and income

potential. Borrowers who have a steady history of income earnings or who are trained and employed in 'stable' professions are more likely to receive funds than potential borrowers with variable income histories or who are employed in less stable industries. This clearly has an undesirable effect on low-income households, particularly those with a chequered history of employment. Such households will tend to be excluded from access to housing finance.

Lenders may also deal with adverse selection by shifting risk back onto the borrower. This is most easily achieved by requiring a large deposit on a house before funds are provided. This reduces the risk that the financier will be stuck with a house that is valued at less than outstanding debt if default occurs. But again, low-income households will be most adversely affected by this solution, as they are least able to save for a significant housing deposit while at the same time paying for rental housing.

Lenders can also shift risk onto a third party, requiring potential borrowers to have a third party guarantee the loan. Again, low-income households are adversely affected by this solution as they are less likely to have 'richer' family members or friends who can act as guarantors, a point that applies also to prospective student borrowers.

Overall, we would expect that asymmetric information in housing finance markets will impact most heavily on low-income households, limiting their access to housing finance.

Similar adverse selection problems arise in rental markets. Investors are keen to rent properties to households or individuals who will be able to pay the relevant rent and who will minimise depreciation of the dwelling. But landlords cannot tell the exact risk associated with particular tenants and will try to infer this risk from other factors. Again, an obvious method used by landlords to distinguish between tenants is their employment history and their current job and income. This discriminates against low-income households who are viewed as having a higher risk by landlords.

Other common methods that have historically been used by landlords to vet tenants include the marital status of potential tenants, whether the household includes children and the number of adults in the household. While explicit use of these types of characteristics would violate current anti-discrimination laws in Australia, landlords will still be tempted to try and infer tenant risk from information they can gain about the tenant. This makes the rental prospects for low-income households less certain than those for higher income households.

The use of economic discrimination in both financial and rental markets biases those markets against low-income earners. This discrimination need not reflect any bias on the part of lenders or landlords. Rather it is simply a rational attempt by lenders and landlords to at least partially overcome information asymmetries in these markets. However, the end result may be to ration many low-income households out of the private markets for

housing. Put simply, the market imperfections can make housing unobtainable for low-income households.

These problems relate not only to low income per se, but also to income risk. If a potential borrower has inadequate income to cover repayments, then that borrower will not be lent the funds to buy a house. However, even if a potential borrower is likely to have adequate funds *on average* to cover a home loan, if that household's income is variable then the probability of default is higher and they may also be unable to access housing funds.

Income risk is something that faces all households. It can arise through a number of sources. For example, unemployment is usually associated with a significant but temporary drop in income for individuals and households. Injury or significant illness can also lead to a sudden reduction in income.

An unforeseen drop in income can lead to a large but temporary reduction in housing affordability for the relevant household. For example, if the household is renting, then it may be impossible for the household to make its regular rental payments when it suffers a sudden reduction in income. In such circumstances, the household faces eviction. Similarly, recurring mortgage payments may not be met due to a sudden income shock, leading to potential foreclosure.

Income risk, like any other form of risk, can be reduced by insurance. For example, income protection insurance is available to households. Similarly, both landlords and lenders may be willing to renegotiate agreements to overcome short-term income shocks. After all, finding new tenants or foreclosing on a mortgage and selling a property are both expensive activities. Both landlords and lenders have incentives to take actions to avoid incurring these expenses. Finally, households may self-insure against income risk, for example by keeping ahead of mortgage payments or by keeping a readily accessible pool of savings.

These solutions to reduce the cost of income risk, however, are less likely to be available to low-income households. For a household with a history of unemployment, income protection insurance is likely to be either unavailable or prohibitively expensive. The moral hazard problem facing the insurer makes such insurance unviable. Self-insurance through discretionary saving is difficult, if not impossible, for low-income earners. And renegotiation to avoid foreclosure or eviction is less likely to occur for higher risk, marginal households.

Consequently, low-income households are likely to face significant residual income risk that creates short-term housing crises for these households. Government housing policies are not geared towards dealing with income risk and short-term crisis. For example, Federal government rental assistance in Australia only becomes relevant once a household becomes eligible for other forms of benefits. In the US, Section 8 voucher programmes often involve waiting lists, meaning that they are unable to meet the needs of low-income households facing short-term distress. As a result, existing policies only tackle part of the problem of low-income housing.

11.3 Applying income contingent loans

The housing lifeline

If existing government policies geared at low-income households' housing needs are inappropriate to deal with income risk, what should be done? One approach, first considered in Gans and King (2003) involves the use of income contingent loans by the government to help households overcome short-term income fluctuations. This ICL scheme aims to increase access to financial and rental markets for low-income households, by limiting the undesirable consequences of adverse selection on landlords and lenders. It also aims to help protect low-income households from the adverse housing consequences of a short-term income shock.

The amelioration of default risks and the effect of income shocks parallel the effect of HECS on the education finance market. These motivations are also clear in the design of ICL for drought relief (Chapter 7), and for community investment projects (Chapter 10).

The 'housing lifeline' involves governments addressing the income risk associated with low-income households directly. The government would provide a form of income insurance to these households, to ensure that short-term income fluctuations do not create long-term housing problems. For example, the government might allow a household that has suffered a short-term drop in income, due to say unemployment or temporary lay-off, to draw down a payment (say up to an eventual maximum of \$A5,000 to \$A10,000) towards rental or mortgage costs. The funds would form an ICL for the household. In other words, a low-income household that chooses to draw down on the housing lifeline is not receiving a gift from the government but faces a liability for future payment. However, this future payment is related to future income, further insuring the household and avoiding long-term poverty traps.

To see how a housing lifeline would work in practice, suppose that a household suddenly finds itself facing a crisis where it is likely to be unable to meet short-term commitments for housing payments. A housing lifeline means that the household would be able to draw down a payment from the Federal government to tide it over the short-term crisis. This payment would be a loan to the household, but the loan would be automatic. In other words, the household would face few if any hurdles – perhaps no more than a simple liquid asset test – in the short term when accessing the lifeline funds. However, the household would incur a future tax liability associated with the loan. In other words, the lifeline is an income contingent loan. The liability may or may not have a reduced interest rate associated with it, depending on government policy. For example, to limit long-term government exposure to lifeline debt, the lifeline interest rate might be set equal to the long-term government bond rate. This is likely to

be substantially below equivalent interest rates available to low-income households.

Payments to a household would be capped in this scheme. The housing lifeline is designed to provide short-term relief, not to provide a permanent source of support for those households who will not have the means to adequately fund housing in the medium to long term. Thus, while the lifeline might displace other programs such as rental assistance in the short term, it does not replace other long-term welfare programmes but supplements these programmes by providing more appropriate short-term assistance to low-income households facing temporary crisis. The payments may be capped on both a weekly and a total basis. For example, it might be possible to 'borrow' up to \$A200 per week under the cap up to a total of \$A10,000. Thus, the scheme would provide up to 50 weeks (or more if less than \$A200 was drawn upon) support for a relevant household.

The maximum length of the lifeline payments might be 12 months. Even low-income households who face a crisis due to unemployment usually find new work within six months. The lifeline is designed to deal with short-term stress and it is reasonable that a household that still faces an income crisis after one year requires longer-term assistance.

The payments under a housing lifeline would be tied to housing. Thus, funds would be paid directly to a (registered) landlord or lender specified by the relevant household. This would require a contractual agreement that ensures that the funds do reduce the household's liability to landlords and lenders directly. At present, Medicare payments operate in this manner.

Drawing down the lifeline would be a choice made by the relevant household. But because this access to an instant 'line of credit' removes a substantial amount of the risk that would otherwise face lenders and landlords who provide housing solutions to low-income households, the lifeline directly addresses the problems embedded in the rental and mortgage markets. Thus, while the lifeline is designed to provide short-term housing insurance for low-income households and as such is drawn down after a crisis occurs, this insurance will increase the ability of low-income households to access housing markets. It removes some of the problems of adverse selection that otherwise face lenders and landlords.

The risk, of course, does not disappear, but it is both reduced and it is passed onto the government. The risk is reduced because the government takes on a portfolio of 'loans' to low-income households. Unlike an investor with only one or two properties, the government can pool the risk of income loss for low-income households, reducing the idiosyncratic variability of that risk.

Passing the risk onto the government also has important economic advantages. In particular, unlike a private lender or landlord, the government has the substantial advantage of ensuring appropriate repayment of any lifeline loan through the taxation system. In this sense, an ICL

provided by the government involves a lower repayment risk than an equivalent private loan. These features of the lifeline address several of the same conceptual issues as ICL schemes for education finance, drought relief, elite athlete financing, and other case studies considered in this book.

The important generic contribution of ICLs is as true in this example as it is in the other case studies. The fact that future capacity to pay defines the repayment obligation helps to eliminate the default risk inherent in standard loans for borrowers and lenders. Further, the ICL schemes reduce the need for income protection insurance from the private capital market, something difficult to obtain for both students/graduates and low-income earners.

As well, the government potentially saves some welfare expenditure through the housing lifeline. Most obviously, to the degree that a household is able to draw down the lifeline so that the household is less reliant on other government assistance, the lifeline reduces demand for short-term government assistance. More importantly, by reducing the adverse consequences of a short-term income shock, the lifeline should help low-income households from sinking into long-term poverty. Given the higher average rates of earning of graduates, this benefit is likely to be much greater under the lifeline than under HECS.

In theory the housing lifeline could be substantially self-funding. So long as the interest rate charged by the government is above the long-term bond rate on government funds and accumulated debt is eventually repaid, the government will be operating on the same funding principles as any lender.

In practice, of course, full repayment from every household will not be possible. Some households will move from temporary to long-term crisis and will be unlikely ever to gain a lifetime income that would allow repayment. In such a situation, the household can be transferred onto appropriate long-term benefits after the lifeline expires or when the long-term nature of the crisis becomes evident.

At the same time, it must be recognised that the housing lifeline will help low-income households who face short-term crisis from becoming dependent on long-term welfare. In this sense, the lifeline could be highly cost effective for the government even if it does not cover its own cost because it avoids the government paying other benefits over a longer period of time.

To see this, consider a low-income household suddenly faced with an income crisis. The household may face eviction or foreclosure. This may force them to move to alternative housing in the short term and may force them to move onto government benefits. In the medium term, the crisis will harm the household's credit standing so that it may be harder for the household to gain appropriate housing in the future. Thus, the temporary income crisis may lead to a long-term housing crisis for the household. The

timely and temporary intervention allowed by the lifeline can avoid these long-term problems (with the associated long-term government payment of benefits).

The government might also choose to subsidise the lifeline interest rate, or to apply the type of interest rate arrangement which operates with HECS, explained in Chapter 4. Subsidies would increase the cost of the lifeline for taxpayers, but also create greater protection for low-income households by limiting their lifeline debt exposure.

Implementing a housing lifeline obviously requires policy makers to address a number of important practical issues. For example, it is important to determine both the weekly draw down available under the lifeline and the maximum debt level available under the lifeline. For example, a weekly loan of around the level of current rent assistance, say \$A200 to \$A250 per week, might be appropriate under the life line. Unlike rent assistance, the lifeline would be automatic so that households would not be required pass eligibility waiting periods as is required currently under rent assistance. Alternatively, it might be felt that a slightly higher weekly draw down should be possible under the lifeline. After all, the lifeline is a loan, not an entitlement.

The example given here is Australian. However the lifeline principle would appear to be highly transferable to other countries. For example, at first glance the lifeline would appear to have a number of advantages over the US Section 8 programme. It would likely improve the range of housing choices available for affected households by allowing households to choose their own housing within their affordability constraint. Removing waiting lists and providing the lifeline to all eligible households would improve equity. The lifeline repayment criteria should increase the overall contribution rate by recipients from the current low level, and the contribution rate would be linked to future capacity to pay. Finally the current three-way contract, with the government agency and the tenant both paying the landlord, would become a series of simpler two-way contracts, with the government agency paying the household and the household paying the landlord.

As with all government programmes, the rules of the lifeline need to be carefully designed to avoid people manipulating the system. This involves issues such as potential adjustments for the number of people in the household (in particular, the number of dependents) and for different household configurations. These issues, however, must also be dealt with under the existing social security and taxation system. Lessons from these schemes can be used to implement the housing lifeline.

Critiques of the lifeline

Since the lifeline was originally proposed in Gans and King (2003) it has raised significant feedback from those interested in low-income housing

issues. While much of the feedback has been positive, some has raised questions about the usefulness of a housing lifeline. A number of these criticisms are summarised in the Productivity Commission (2003, pp. 153–4). In this section, we briefly consider some of the issues that have been raised regarding the lifeline.

One immediate question that arises with the lifeline relates to private sector financial institutions. Isn't the housing lifeline something that could be done by private financial institutions? Why can't banks and other lenders provide temporary loans to households in crisis? These questions however miss the underlying rationale of the lifeline, which is to overcome private sector market failure. Banks cannot easily distinguish between households who face short- and long-term housing crises. As they do not wish to manage the risks of loan default, they naturally shy away from lending to households precisely when they might need a loan most.

The government, however, already bears the risk associated with long-term housing crises. Therefore, while it faces funding issues associated with managing its own debt, this is not related to the particular, unknowable status of a particular household. It also has the ability to use the tax system to monitor income and repayments. In this respect, the government is in a better position than private lenders to provide a 'no questions asked' lifeline to households in crisis. They can assist those households for which the crisis is short-lived while continuing to assist those with long-term needs.

A second critique is that the housing lifeline will encourage excessive homeownership, by reducing the risks associated with taking out a home mortgage. With the lifeline, households face a reduced risk of default because of a short-term inability to meet repayments. For lenders, this reduced risk of default will change the criterion upon which they can accept loans from low-income households. In this respect, it will improve access to credit.

However, the lifeline does not explicitly encourage homeownership over renting. The lifeline payments will apply equally to owners and renters. Thus, landlords will face lower risks of non-paying tenants and, hence, there will be improved access to rental properties for low-income housing. The lifeline is designed to make housing more affordable regardless of whether housing is owner-occupied or not.

A third critique is the exact opposite of the second. The lifeline is not appropriate because it does not encourage greater homeownership. For example, it does not directly address the 'deposit gap' faced by low-income households.

We agree that the housing lifeline does not artificially bias low-income households towards homeownership as opposed to rental accommodation. Indeed, it is far from obvious to us that such a bias would be desirable although this type of 'ownership bias' seems to underpin much recent concern over housing affordability more generally. However, the criticism

also fails to understand the private sector issues that drive affordability problems for low-income households. To see this, ask a simple follow up question – why does the ‘deposit gap’ exist?

As noted above, increasing deposit requirements is one way that private sector financial institutions can attempt to overcome asymmetric information. A deposit requirement both reduces bank risk and signals to the bank that the borrower can save a reasonable sum of money *at the same time* as paying rent. In other words, the deposit requirement is designed to weed out high-risk low-income households as potential borrowers. It does this by weeding out all low-income households! A policy, such as a ‘homeowner’s grant’ that attempts to directly address the ‘deposit gap’ in fact fails to address the underlying market failure that drives this gap in the first place. In contrast, the lifeline is clearly designed to address the market failure in private financial markets. It solves the underlying problem rather than acting as a band-aid solution.

A fourth critique of ICL proposals aimed at low-income earners is based on the argument that ‘the poor don’t like debt’. The implication is that any ICL arrangement would have low rates of take-up by those with lower incomes, due to an aversion to debt, reducing the effective targeting of any such ICL scheme.

Debt aversion is linked to fear of default and subsequent damage to material standard of living and credit reputation. However a properly designed ICL addresses this very issue directly – agents cannot go bankrupt repaying the ICL, because if there is no capacity to repay then no repayment is required.

The Australian experience to date of the HECS scheme, reported in detail in Chapter 4, is strong evidence against this critique. These HECS experiences provide comfort that low-income groups would access the lifeline.

Finally, it has been noted that households use a variety of strategies to guard against periods of income stress, such as savings and income insurance. This is of course true, but again fails to consider low-income households specifically. As already discussed, these households are unlikely to be able to buy appropriate income insurance and will not be able to ‘self-insure’ through saving. Indeed, if taken seriously, this criticism could be used against all government welfare policies. After all, why have unemployment benefits when households can save to protect themselves in periods of unemployment? Why have government provided health insurance when we could all rely on private insurance?

In fact, the criticism that government intervention is not needed misses the point. The housing lifeline is not aimed at protecting the well off but rather aims to help the least well off in society. The fact that the well off have other private options available to them is good, and we would encourage the use of those options. But this does not mean that low-income households can be ignored by the government.

11.4 Summary

The housing lifeline provides a potentially powerful tool to protect low-income households against income shocks and housing loss. In so doing, the lifeline opens up financial and rental markets to low-income households. It has a number of similarities to other ICL applications in that it is based on lifetime income rather than current income, it limits the impost on government funds while providing short-term relief for relevant households, and it is a product where benefits are determined by the needs and requirements of the low-income household themselves. Unlike alternative welfare systems it avoids creating a poverty trap by treating payments as a loan rather than an entitlement that is 'lost' as income rises. Thus, a housing lifeline can retain incentives for households to take appropriate actions and risks to improve their standard of living.

Most importantly when considered in the context of this book, unlike loans that might be provided in other ways, the lifeline provides both default insurance and the capacity for consumption smoothing. This again is the main message of all ICL applications.

Notes

- 1 Thanks to Richard Hayes for excellent research assistance in preparing this chapter, and Bruce Chapman for his helpful suggestions. Parts of this chapter are drawn from Gans and King (2003; 2004a; 2004b).
- 2 The statistics referred to here are from the Australian Bureau of Statistics 2003 *Year Book Australia* (ABS, Canberra).
- 3 Australian Bureau of Statistics (2002) *Yearbook of Australia 2002: Housing prices* (ABS, Canberra). At the same time it must be recognised that changing house prices are closely tied to regional factors, particularly outside Australia's urban regions. Thus some country areas have experienced huge rises in house prices in recent years (e.g. north coast NSW) while other rural areas have seen house prices fall.
- 4 ABS figures presented in HIA (2003).
- 5 Demand for the programme significantly exceeds the available funds, leading to waiting lists of applicants.
- 6 In other words, rent assistance is a supplemental benefit that is only paid to households who are receiving a primary benefit from the Australian government.
- 7 See Steele (2001) for a fuller discussion of the effects of Section 8 programme design on the choices available to its participants.
- 8 As a simple example, an investor seeking to gain the benefits of the scheme could take a single dwelling, rented at \$A200 per week, and divide it into two dwellings, each rented at \$A100 per week. At one extreme, this may simply be done as an accounting trick – without even a change in tenants. At the other extreme, where each dwelling requires specific individual features, the division may involve costly (and possibly inappropriate) modifications to the dwelling that reduces its utility for housing.
- 9 See, for example, Stiglitz and Weiss (1981).

Part III

Income contingent loans for public policy

Reform issues and additional
potential areas

12 Summary of Part III

The final Part of this book explores two matters: the policy lessons from the case studies analysed in detail in Part II and several other potential areas for the application of ICLs.

Chapter 13 summarises the similarities and differences in the motivation for income contingent loan (ICL) policy applications so far considered. It is argued that in some cases an essential benefit of an ICL involves the replacement of public sector grants schemes which are regressive with a fairer system of assistance, such as ICLs for higher education financing and the reform of drought assistance. In other examples, improvements in the administrative efficiency of policy is a critical part of the case for change, such as with respect to the collection of fines associated with criminal activity. In all cases there is an emphasis on the benefits of an ICL approach: insurance against both default and repayment hardship.

It is suggested that for the case studies considered in Part II the suggested ICL reforms are considered in contexts in which there would be both social benefits and a clear reluctance of banks to offer commercial loans. The chapter also examines the design challenges pertinent to all ICL reforms, with these typically arising from the problems of adverse selection and moral hazard. The nature of these difficulties is considered, and solutions are offered, with respect to all of the case studies.

An epilogue, Chapter 14, examines briefly some other possible ICL public policy applications. Given the enormous potential for public sector reforms of these types the list is necessarily quite incomplete, and is offered principally to highlight the range and diversity of possibilities. The ICL policy suggestions are for: paid maternity leave; the financing of elite athletes; the development of indigenous community business activities; the encouragement of particular types and levels of immigration; and immigrant location settlement. The goal is to illustrate the significant potential for the application of the basic principles of risk-sharing ICLs with respect to quite disparate range of policies.

While it was obvious that the ICL policy applications considered in both Part 2 and below have an Australian institutional and policy context,

it is critical to recognise that the essential lessons of ICLs are generic. The reasons behind the Australia-specific orientation of the discussion are easy to understand. HECS was the first national ICL application, a consequence being that Australian researchers became aware of the potential benefits of ICLs well before others. Just as ICLs have become accepted and adopted internationally with respect to higher education financing, so too is it clear that a range of policy challenges facing many countries could be addressed with ICLs.

For instance, most countries use government grants to alleviate financial crises in agriculture, with eligibility for assistance being associated with factors idiosyncratic to particular regions. Examples include: subsidies to farmers in the UK to compensate for the destruction of livestock as a result of 'Mad Cow' disease in the 1990s and compensation paid by some US state governments for locust plagues and floods.

Similarly, while the collection of fines for both low-level criminal activity and white-collar crime have been analysed in this book in an Australian legal jurisdiction, it is clear that the default problems facing the courts from fine collection are shared in many countries. Indeed, Chapter 8 makes this clear through some reference to the criminal fine system in the UK. As well, the financing of social community investment projects, and the protection of low-income citizens from the default costs associated with the non-payment of financial housing obligations, are concerns for governments in all countries.

It should also be emphasised that the broad range of other possible ICL interventions considered briefly in Chapter 14 cover areas of possible government intervention in all countries. For example, government policy is arguably inappropriate in most countries for: paid maternity leave, research and development subsidies, and elite athlete financing. As well, the difficulties associated with the selection and placement of immigrants are standard policy challenges for many governments.

The generic advantage of government interventions of an ICL form is the major policy lesson. In this book it has been argued that such approaches are able to deliver the benefits of both default insurance and consumption smoothing for a significant range of economic and social activities. Sensibly designed ICLs, applied in the appropriate institutional context, have great potential. The broad reform lessons are now considered.

13 Similarities and differences between the income contingent loan case studies

13.1 Introduction

The case studies outlined in detail in Part II illustrate that there is a significant potential for the application of ICLs to a range of diverse activities. While the rationale behind policy actions of these types might seem to be quite different, there is a number of common motivational factors for reforms. In all applications there are also shared policy challenges. Both issues are examined in brief below.

13.2 ICL policy motivation: disparate and common characteristics

At first blush it might seem difficult to find obvious points of similarity concerning the justification for the application of ICLs to areas as diverse as drought relief, low-level criminal fine collection, profit contingent fines for collusion, social community investment financing and the provision of an income contingent housing credit for low earners. It would seem to stretch the imagination even more to draw strong connecting threads between these disparate policy applications and the essential case made in Part I for the adoption of ICLs for higher education financing.

There are however some significant points of similarity with respect to several of the proposed policy reforms. Consider, for example, the Botterill and Chapman (Chapter 7) case for replacing grants for drought relief with a top-up revenue contingent loan. As justification for an ICL reform, they highlight the apparent regressivity of financing drought relief only from general tax revenue. They emphasise that, for a given size of budget, every dollar spent in this way is a dollar that cannot be spent in other areas, such as for schools, hospitals and the reduction of poverty.

The above noted rationale for the part-replacement of grants with loans for drought is very similar to the case made in Chapter 2 for the introduction of charges for higher education. Without a contribution from students, higher education is almost entirely underwritten from the taxes of all citizens, with the majority of those taxed being far less advantaged over their

lifetimes than are typical graduates. As pointed out in Chapter 2, and an issue raised persistently by Barr (1989, 2001) and others, a higher education system financed by the taxes of all is almost certainly a regressive use of budget resources. This is also clearly the case with respect to grants based drought relief: the farmers so assisted are likely to be more advantaged over their lifetimes than the majority of taxpayers providing the finances.

On the other hand, the motivation for the case studies of Chapters 8 and 9 – concerning the collection of criminal reparations on an income contingent basis – is quite different from the tax equity rationale for both drought relief and HECS. Obviously current court approaches to criminal activity do not involve the use of taxpayer resources offered in the form of grants to the lifetime advantaged. Instead, in this case, the rationale for the adoption of criminal activity ICLs for the payment of fines is related to the administrative efficiencies, and the fairness, of collecting reparations through the tax system depending on an offender's income. Chapman *et al.* (Chapter 8) make the point that fines for low-level crimes are extremely expensive to collect in terms of court resources and the likely costs to offenders, who eventually face the possibility of imprisonment, are highly significant as well.

These themes are also taken up in Chapter 9, an analysis of the potential to use ICLs for white-collar crimes. Chapman and Denniss examine the prospects for the diminution of both insider trading and collusion in a policy context in which there are both financial rewards for whistleblowing and ICL arrangements for the recovery of penalties.

Social investment community project financing, the subject of Chapter 10, is promoted as another possible ICL intervention, essentially because government intervention of this form can be designed to encourage commercial capital market involvement in investments which are considered to have social as well as private benefits. This is similarly a motivating factor behind Gans and King's case for a housing credit (Chapter 11) to be made available to low-income earners.

The examples of possible ICL reform are very different in terms of motivation and it clearly seems to be the case that there is no single reason for the provision of ICLs across the breadth of these proposals and the additional ICL policy reforms considered below. But there are nevertheless several important shared factors as a rationale for policy intervention in all these applications: the lack of an efficient capital market response in the absence of government intervention and the delivery of social benefits in the form of insurance with an intervention of ICL form. Both are now considered.

Capital market incapacities and the insurance aspects of ICL

A first theme is that in all the proposed policy areas, including the potential extensions considered briefly in Chapter 14, is that, if left alone, there

would not be a private capital market response to the demand for finances that could deliver efficient levels of activity.

To understand why capital markets are unlikely to be associated with the right level of assistance for higher education financing and with respect to the other case studies, two issues matter. The first is that, for all the activities analysed, expected future outcomes are characterised by considerable uncertainty. The second is that these uncertainties are associated with substantial risks for either a prospective lender or a prospective borrower. The nature of these risks is explained below for each of the cases.

With respect to commercial bank borrowing to finance higher education participation, Chapter 3 examines in considerable detail the nature of the so-called 'capital market failure'. There are two issues, both related to risk.

For the bank, the expected variance of students' future incomes streams is such as to imply a real possibility of default. While repayment uncertainties are true for most bank lending, a particular problem for the bank is that in the event of default on a student loan – and unlike as is the case for lending for the purchase of a house, for example – there is no saleable collateral. This is why all commercial bank loan schemes which finance student loans (for example, those in Canada and the US) come with a government guarantee to pay the bank the remainder of a defaulting student's debt.

As explained in Chapter 3, for a student borrower there is also risk, taking two forms. The first is that of default, which is likely to be associated with damage to the borrower's credit reputation and thus access to and/or the cost of future borrowing, such as for the purchase of a house. The second risk from having a debt to be paid in a set way over time is the possibility of repayment hardships as a result of adverse future financial circumstances.

Chapter 3 makes the important point that an ICL for higher education financing solves these problems of risk for the student borrower. ICLs provide both default insurance and consumption smoothing, simply because debt obligations are determined by capacity to repay.

For drought relief there are similar risks to those involved in higher education financing, and these exist for both prospective lenders and borrowers when non-ICLs are involved. For the bank the future value of the property is uncertain, meaning that in the event of default there is the prospect of the lender being unable to recoup the full value of the outlay. And for the borrower, the farmer, there are in many cases very high costs of default and the loss of the property to the bank. Specifically, the psychic costs of the loss of a farm which has been in the family's name for many generations is very likely to be far greater than any losses faced by prospective lenders. For a farm borrower an ICL takes away the risks of both default and of repayment hardship.

With respect to criminal fines, it would be absurd to suggest that offenders could access loans from commercial banks to cover their fine payment

obligations. The risks to the bank of default would seem to be much greater than is the case for higher education financing, and the lack of saleable collateral in the event of default is very obvious. The default protection and consumption smoothing characteristics of an ICL collection are again in this case the benefits of this form of intervention. As well, these characteristics of an ICL increase substantially the prospects of the collection of a much higher proportion of the debt, meaning that fines could be set at higher levels because the default problem is removed.

Concerning social investments in community projects, in Chapter 10 it is suggested that access to ICLs have several advantages over leaving the financing only to the market. The first relates to these projects being defined in part by their presumed capacity to deliver externalities, benefits to society above and beyond what accrues directly to the parties involved. This suggests that without government intervention there will be underinvestment from a societal point of view. As well, and again because of default protection and consumption smoothing, ICLs in this case increase the likelihood of the firms and projects surviving, and thus maximise the possibility that the bank debts also associated with the projects are repaid.

Similarly, as explained by Gans and King in Chapter 11, a commercial loan market will not exist to allow low-income borrowers to cover rent or mortgage obligations in times of adversity. They focus on the role of asymmetric information as a major problem for a bank, but there are also the same risks of repayment hardship and default for prospective borrowers in a non-ICL context as is the case for students, farmers, criminal offenders and social community entrepreneurs. Thus even if banks made the loans available to those in short-term financial difficulties, an ICL is a superior instrument for borrowers because of its insurance characteristics.

13.3 ICL policy design: disparate and common characteristics

All the case studies, and ICL policies in general, have in common two major design challenges. These arise from what economists label adverse selection and moral hazard.

Adverse selection

Adverse selection is the term given to the notion that particular forms of economic instruments or policy will attract individuals most likely to benefit, and discourage the participation of those least likely to gain. A classic example is that of medical insurance, in which at any given price the potentially unhealthiest people are more likely to want to be covered, and the potentially healthiest not to be interested. Consequently, without the use of screening devices (such as age, medical background and being a smoker, for example), the schemes will be dominated by individuals most

likely to experience ill health. This can result in higher premiums and the further non-involvement of the relatively healthy.

The possibility of adverse selection with respect to ICL take-up is very real, the essential reason being that ICLs provide benefits to those who expect to perform least well financially in the future. If a student's future income is low, or a farm business does not properly recover from drought, ICL repayments are lower for members of these groups.

In some ICL applications consideration of the problem of adverse selection is not necessary. For example, for the use of the tax system to collect criminal fines, examined in Chapters 8 and 9, there is no possibility of selection issues arising since fine payment is compulsory by law. But in other possible areas the potential for adverse selection to undermine the basis of an ICL is very real, and the forms it takes are now summarised for the other examples considered above.

First, with respect to the financing of higher education, students with an ICL debt who earn very low lifetime incomes will end up repaying less than their total debt. If the first income threshold of repayment is set too high it is even possible that a significant minority of students will repay none of the debt at all. Thus a form of adverse selection might be possible with schemes such as HECS if prospective students had choices over whether or not to take the option.

This potential problem is addressed with respect to the Australian, New Zealand and UK ICLs for higher education through a simple rule: repayment is not a choice, but is compulsory for all higher education students in these countries. It is arguable that a form of adverse selection might exist in that some students might choose to pursue higher education in countries without ICL arrangements, but the marginal costs associated with studying overseas would seem to be sufficiently high as to suggest that this is not an issue.

Second, adverse selection could also be a feature of an ICL applying to drought relief. Those farm businesses not expecting to be viable in the future are also the businesses with the least to repay with an ICL. This is recognised by Botterill and Chapman in Chapter 7, and is the reason they suggested that government ICL assistance only be made available to farms also taking or extending a commercial bank loan at the same time. The reason for this is that the bank can then be used as a vetting agency, since the commercial sector would not be interested in underwriting loans in which the expected repayments are low.

Of interest for the Botterill and Chapman suggested policy design is that the potential availability of a top-up ICL would likely act to encourage bank involvement since additional finances would then be available to help in the repayment of the commercial loan. Governments would need to pay particular attention in this context to the extent of the top-up allowed.

Third, there is a clear adverse selection issue for prospective businesses

interested in ICL financing for the development of social investment community projects, discussed in Chapter 10. Without appropriate vetting procedures, prospective borrowers who expect their project to do poorly will be relatively encouraged to participate. This form of adverse selection is the reason that Chapman and Simes suggest that the financing of the projects involve initial contributions from each of three parties: the individuals themselves; a commercial bank; and the government agency providing the ICL.

The involvement of a commercial bank in some ICL proposals is motivated by the possibility of adverse selection. The reason is similar to Botterill and Chapman's bank involvement in a drought ICL: to help ensure that businesses with poor prospects do not qualify for ICL assistance. Bank involvements in both cases perform the critical role of vetting proposals determining eligibility to minimise adverse selection.

Fourth, the housing credit line of Gans and King also has a real potential to be undermined by adverse selection. The individuals gaining the most from accessing a housing ICL are those expecting to repay the least in the future, so a government would need to put in place procedures to ensure that non-repayment risks are acceptably traded-off with genuine need. The latter could be addressed through access to health and employment records, for example.

Moral hazard

The second design issue for ICLs concerns what is known as moral hazard. Moral hazard exists when there are incentives for those covered by an economic instrument to behave in unethical ways in order to avoid meeting their responsibilities. For ICLs, put simply, moral hazard is related to the possibility of assisted individuals or businesses cheating on their repayment obligations. It is an issue for all applications considered in this book, and has promoted for policy discussion the importance of policy design concerning the income basis to be used for collection purposes.

With respect to HECS, the financial basis for collection is an individual debtor's level of taxable income, and the first threshold for repayment in 2005 is around \$A36,000 per annum. Since after a HECS debt is incurred there is a real rate of interest subsidy, debtors who are able to maintain measured taxable income at below this level in effect gain financially. If this is achieved through reduced effort, and/or from tax deductions associated with self-employment, there is clearly a cost to the taxpayer. There is no evidence that this is happening however, and the fact that repayments seem to be about what was and is expected implies that empirically it has not turned out to be important.

The other form of moral hazard with respect to ICLs for higher education financing is that graduates can avoid repayments by leaving the country. While schemes such as HECS and the UK ICLs are very unlikely

to actually encourage emigration it is still the case that taxpayers pay an implicit price for the time that debtors remain overseas for any reason. Barr (2001) suggests that this could be addressed with the use of tax agreements between countries, while Chapman (2004) argues that a straightforward way to sort out the issue for HECS would be to require by law debtors to repay a minimum amount per year if they are living overseas for more than, say, six months.

A different basis has been suggested for the drought relief ICL. Botterill and Chapman recognise that the use of a farmer's taxable income would result in little of the loan being collected, since there are considerable deductions available for farm business expenses. Consequently they chose the use of a farm business' gross revenue, and show that even with very low percentage repayments (such as 2 to 5 per cent of annual gross revenue) being collected, the expected time periods or repayment would be quite reasonable from the perspective of the government.

Quite differently, Chapman *et al.* (Chapter 8) argue that low-level criminal fine repayments should not be collected with the use of the current HECS first income threshold of repayment, simply because at around \$A36,000 per annum the figure is too high to enable a high proportion of the fines to be collected. This can be traced to the fact that the majority of crimes of this kind are committed by low skilled young males, whose expected levels of taxable income are particularly low. The authors demonstrate that the use of the collection parameters of the Australian non-custodial child support scheme, where contributions are required at very low levels of income but with low rates of repayment, would result in reasonable repayment periods from the perspective of the government.

ICL collection of white-collar crimes fines, such as insider trading by individuals, or collusion by companies, also raise issues of moral hazard pertinent to the choice of the basis of collection. Chapman and Denniss (Chapter 9) identify the problem and suggest that HECS parameters would work reasonably well for offences by individuals, and for companies the solution would be to add several percentage points to profit taxes per year until a collusion debt is paid. An important general point from these exercises is the recognition that the incentives to avoid repayment of ICLs can be affected by setting the annual rates of repayment at low levels.

There are also moral hazards with the use of ICLs for social community investment projects, with Chapman and Simes suggesting in Chapter 10 that they take two forms. One, individuals with both bank and government assistance could shirk in terms of work effort, and two, businesses could minimise measured incomes to defer repayment. The authors suggest the following solutions to these separate issues.

To encourage work effort, the social investment community ICL might require the financial partnership to involve not only a bank and the government, but also to require initial contributions from the individuals involved in the project. The fact that those assisted will share the costs of

poor work effort through the potential loss of their own outlays is a design aspect of the scheme motivated by the need to avoid this form of moral hazard.

To address the revenue reporting form of moral hazard, Chapman and Simes suggest also the imposition of a high real rate of interest on the social community investment project debt. They argue that this would encourage relatively early repayments, since deferral becomes more expensive with high rates of interest.

Finally, moral hazard is relevant to the design of the housing credit line of Gans and King (Chapter 11). Those interested in assistance could, for example, encourage their own job loss, or feign ill health. While this seems very unlikely to be a significant issue given that the housing credit does not in itself increase the lifetime incomes of those assisted, Gans and King suggest a real rate of interest on the debt to help minimise the potential for both low effort and income measurement moral hazard.

The critical point following from the discussion of both adverse selection and moral hazard issues with respect to different ICL applications is that the possible solutions to both problems will likely take very different forms depending on the nature of the problem that an ICL reform is designed to redress. There are not identical solutions to those difficulties, and this promotes the importance for policy development of the clear recognition of the particular economic and institutional characteristics of each specific prospective application of an ICL.

Epilogue

14.1 Introduction

This book should be seen as a beginning of a debate, and not a final word concerning the potential, role and design of income contingent loans for public policy. Indeed, in the middle of 2005 work is progressing in a number of additional areas of potential ICL reform. Some of these are now touched on briefly.

14.2 Paid maternity leave

Of the 30 countries in the OECD all except the United States and Australia provide legislative support for paid maternity leave.¹ Paid maternity leave takes different forms and levels of contributions from taxpayers, employers and employees. In the United Kingdom, for example, employers pay their workers while on leave, which is then claimed back by employers from the Inland Revenue. In Canada, the government funded Employment Insurance Program provides maternity (and other) benefits, for up to 15 weeks.²

In the period 2001–04 Australia was involved in a robust debate concerning the financing of paid maternity leave, which at that stage did not exist outside public sector institutions. The final report of the committee exploring the options recommended that mothers should be provided with a non-means tested grant to allow for 14 weeks of leave paid at the rate of the minimum earnings for a full-time worker, or previous weekly earnings (whichever is the lower). The total costs to the government for each person would then be just over \$A6,300.

Chapman (2002c) raised the possibility of offering parents an ICL in order to help finance paid maternity leave. The starting point of his analysis is that three parties potentially benefit from paid maternity leave: the parents, the firm of employment if the parent returns to work there and society broadly. Basic economic theory would then suggest that given there are benefits to the three parties the form and incidence of paid maternity leave should include contributions from all.

The case for the provision of an ICL for those parents unable to finance their part of the arrangement should by now be familiar to readers of this book. As with higher education financing, drought relief and a housing credit line for low-income earners, and other applications, ICLs can be used to plug a financing gap that would not normally be filled from commercial lending channels. As well, ICLs for paid maternity leave, compared to using bank loans (or extending mortgages), would deliver the benefits to parents of consumption smoothing and default protection. The form of consumption smoothing is that those assisted would have access to finances at the time when household incomes are relatively low, and would pay for (part of) this privilege if and only when household incomes increased to relatively high levels. The arrangement has all the usual benefits associated with ICLs.

Chapman pointed out that with access to an ICL mothers and/or fathers would be able to extend their time of paid leave to well beyond the 14 weeks recommended in the report. It would be a policy decision by government as to the maximum level of loan available, but for discussion purposes he suggested that up to a further nine months of assistance could be provided.

A possible ICL scheme for paid maternity leave is not fully developed for the Australian debate, and there are some critical policy parameters. The possibility of adverse selection is also clear, and in this case takes the form of relatively large loans being sought by those parents expecting their future incomes to be low; in an extreme case of very low future incomes an ICL would in effect be a very large public sector grant.

With respect to the repayment arrangements the paid maternity leave ICL policy design must address the questions: should the debt be seen as an obligation of both parents (which would have the advantage of maximising repayments)?; what income thresholds and rates of repayment are appropriate? and what form and role should be given to interest rates?

14.3 The financing of elite athletes

ICL policy reform can be seen to be relevant to the financing arrangements concerning the support of elite athletes. The background is as follows.

In most developed countries governments subsidise the training of athletes. In general this takes the form of the provision of scholarships involving accommodation costs, income support, and coaching and medical assistance. The support is targeted typically on young people who have demonstrated that they have the potential to achieve unusual success in their chosen field of sport.

In a small number of cases this hope is realised: a minority of subsidised trainees become part of the sporting elite, and when this happens the members of this group earn extremely high incomes. In Australia, for

example, Stensholt (2004) shows that in 2004 there were 50 Australian sportspeople who earned over \$A1 million per year, with the highest receiving around \$A18 million (Greg Norman, golfer). To put this in context, \$A1 million per annum is over 20 times the average income of Australian workers.

While these figures are suggestive of extraordinarily high incomes for some athletes, in an international context Australians are not particularly highly paid. This is clear from data reported by Denniss and Hamilton (2003) from *Forbes* magazine, which show that ten sportspeople earned over \$US25 million in that year. Tiger Woods (US golfer) and Michael Schumacher (German Formula 1 driver) headed the list, both with incomes of around \$US80 million.

It seems to be clear that grant based systems for the financing of elite athletes are regressive, just as is fully taxpayer funded higher education and grant based drought relief: taxpayer resources are being delivered to some individuals who are or who become extremely advantaged over their lifetimes. A major theme of this book is that contemporary government financing policy in a range of areas for many countries is inequitable, and can be made more fair for taxpayers with the use of alternative funding arrangements.

An ICL has the potential to make government involvement in sports training more equitable, and could even be designed to allow more government support in the area. However, unlike most of the other case studies presented in the book, there seems to be an unusual potential with respect to elite athletes to consider the application of the variant of income-related financial instruments known as human capital contracts (HCC), explained briefly in Chapter 3 and analysed fully in Palacios (2004).

That is, with respect to financing reform for elite athletes there are two options involving income contingent repayment. The first is the usual form of an ICL in which a given level of debt would be repaid after which there are no further obligations. The second is a human capital contract in which the lender – in this case the taxpayer – collects a given percentage of future income for a set period of time. For the HCC company MyRichUncle, now in operation with student loans in Californian higher education, there is a maximum payment of 15 per cent of income, for a period of ten or 15 years.

As stressed in this book, it is always the case that ICL policy reforms must address the issues of adverse selection and moral hazard idiosyncratic to particular potential applications, and this is also the case concerning elite athlete financing. With respect to adverse selection, however, there doesn't seem to be a broadly based problem if the financing system operates in a context in which athletes are only eligible for assistance after passing a series of tests determining their potential. This is the case, for example, with respect to those obtaining scholarships admitting them to the Australian Institute of Sport.

But there is a different form of selection with athlete financing, and this relates to the nature of the sporting endeavour. Again with respect to the Australian example, there are some athletes who have little chance of ever receiving high financial returns to their training investments, such as those involved in netball, most swimmers and the majority of track and field athletes. However, a relatively significant proportion of cricketers receiving Institute of Sport scholarships can expect to have high incomes on average, and some tennis and soccer players will do extremely well in the labour market. To address this form of adverse selection it might be that income contingent instruments for elite athletes are only made available with respect to selected sports.

In this possible ICL application an obvious form of moral hazard relates to the prospect of elite athletes choosing to live outside the country in which they are trained, thus avoiding repayment obligations. To cover this prospect the initial contract could include a clause suggesting that in the event those assisted leave the country for a period exceeding six months, the athlete is required by law to repay a sum of \$AX dollars per year (where X is not too large) for a given period, or until the debt is paid off. As noted elsewhere in the book this approach could also be used to cover this form of moral hazard with respect to other debts, such as HECS.

14.4 Two income contingent instruments for immigration

The area of immigration potentially lends itself to policy intervention of an ICL or even a form of human capital contract. There are at least two possibilities: allowing additional people to immigrate contingent on them paying a sum of money through the tax system, and using an income contingent financing instrument to influence immigrants' geographic location.

With respect to the first, Hatton and Williamson (2005) argue that while immigrants are expected to gain from their relocation, some domestic residents might incur costs from immigration, such as from congestion, lower wages than might otherwise have been, or even from job loss.³ They suggest that a possible policy response to resolve these inequities could involve the government imposing a charge on immigrants. But they raise the strong point that having a fee at the point of entry would have the clear disadvantage of excluding immigrants without the capacity to pay, and with an obvious inability to borrow commercially to cover the cost.

Hatton and Williamson suggest that a solution to the above problem would be to require immigrants to pay the charge dependent on their future incomes and through the tax system. That is, they promote the use of an ICL on immigrants as a way of dissipating residents' social costs from the process. The benefit to domestic residents would take the form of higher government revenue which could be used for a range of services, or to reduce their taxes.

The problem of some immigrants being unable to pay a fee on entry,

and not being able to access commercial bank assistance, is in principle the same difficulty that faces prospective students being required to pay an up-front fee to attend higher education. As explained in Chapter 3, a lack of collateral and income risks are the two factors that promote the use of ICLs for higher education (since banks won't be involved) and they are the same issues here.

As with practically all potential ICL interventions, there are adverse selection problems in requiring a charge to be paid by immigrants depending on their future incomes. The most obvious concerns the fact that the immigrants most interested in relocating to a country in which future incomes determine in part the costs associated with the process will also be those immigrants who expect to earn the lowest future incomes. Hatton and Williamson suggest a way of handling the problem.

They argue that several countries, including Canada, New Zealand and Australia, use a so-called points system as a way of regulating the entrance of particular categories of prospective entrants, such as skilled immigration. The adverse selection issue with respect to the income contingent charge mechanism can be addressed by allowing access to ICLs only for immigrants who qualify for entrance through the points system, or who fall within a small margin of the lowest score necessary (the charge would then not apply to other immigrant categories, such as refugees). This is a very similar solution to the adverse selection issue apparent in higher education ICLs, since in this case it is only those individuals considered likely to be successful in higher education that the schemes apply to.

A second possible application of an income contingent instrument in the area of immigration involves the use of the tax system to influence the geographic location of immigrants. In some areas of a country it might be considered desirable to have fewer immigrants, for example, for reasons of excess labour supply, congestion or the cost of the provision of public services. Accordingly the government could impose an additional tax on the incomes of immigrants choosing to locate in those areas considered to be associated with relatively high immigrant supply costs.

In administrative terms an immigrant location ICL would seem to be straightforward. This is because the internal revenue service knows with some confidence the residential location of the immigrant, or at least their place of work. This suggests that at different points of time it would be fairly easy to impose or remove additional repayment obligations. Adverse selection would be dealt with through the application of the points test described above.

Both of the immigrant income contingent policy reforms suggested here could incorporate either a traditional ICL, or could involve the use of a human capital contractual arrangement as an alternative. The latter arrangement might work by requiring immigrants to repay an additional small percentage of tax for a given period overall, or for the time that they are living in areas designated to warrant a surcharge.

14.5 Further possible ICL policy reform suggestions

Apart from higher education (analysed in Part I), the five case studies dealt with in detail (in Chapters 7 to 11), and the four extra examples summarised above, there are many other prospective applications currently being examined and developed. As examples:

- i Amanda Dadd and Glenn Withers (2005) are considering ICLs for research and development financing, in an approach based in part on the suggested reforms for social community investment projects analysed in Chapter 10;
- ii Altman and Dillon (2004) have designed a scheme involving the use of profit related loans for the part-financing of Australian indigenous business and community projects;
- iii Clarke (2004) has suggested the application of ICLs for some aspects of private medical insurance;
- iv there is scope for a scheme similar to the ICL for drought for agricultural investments with favourable long-term environmental consequences; and
- v it might be possible to pay for nursing home and other age-related expenses through the proceeds associated with the sale of assets, such as houses, after those assisted have died.

Notes

- 1 See Australian Human Rights and Equal Opportunity Commission (2002).
- 2 For discussion of the systems in several countries including the UK and Canada, see the above.
- 3 Chapman and Cobb-Clark (1999) provide analysis suggesting that some unemployed residents are actually more likely to benefit from immigration through various means.

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