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Government, human capital formation and higher education

Bruce J. Chapman and David Pope

AUSTRALIA'S 520 000 university students will each be charged in nominal terms about $300 more a year in tuition fees under changes to the Higher Education Contribution Scheme (HECS) announced by the Federal Government in the 1991/92 Budget. The government introduced HECS on January 1, 1989, and its essence follows the recommendations of the Report of the Committee on Higher Education Funding (the Wran Committee Report), made public on May 5, 1988. Its terms of reference were drawn up in November 1987 by the Minister for Employment, Education and Training, the Hon. J.S. Dawkins, and emphasised the desirability of finding funding resources from the direct beneficiaries of higher education, in ways that gave due consideration to the social and educational consequences.

With this background it seems timely to reassess the history of government intervention in higher education. Our purpose in this paper is to consider this intervention in the context of the historical process by which governments have sought to extend capital investment, both *human* and *physical*, for the purposes of Australia's economic and social development.

Governments have long intervened in the economy to promote economic activity and growth. The next section of this paper (see next page) examines the nature of this public investment and the historical course of its two facets, physical and human capital formation, with education being the principal component of the latter. This is not to say that the reason for state-funded education has been economic growth alone. In the early 1970s, for instance, education was promoted by the government as an instrument for equality. However, the view that education raises individual, and with it national, productivity has long been voiced, more

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recently it has been said to provide us with a remedy for our economic ills: Australia, once 'the lucky country', must now become 'the clever country'.[1]

The third section of the paper (page 281) examines how education, specifically higher education, benefits growth, if indeed it does, and how it benefits individuals and the community at large. These questions are illuminated by human capital theory, but are directed to a very real issue, the use of the public purse in funding higher education today.

The next section (page 284) considers HECS in terms of efficiency and equity. Critical reaction to the scheme has come in two broad, opposing, forms. The first has an efficiency basis and is from those predisposed towards the imposition of up-front fees for students, because of the belief that this allows the most potent operation of market forces. The second, related to equity, has come from those philosophically against charging the users of higher education, given the presumption that all fees schemes erect important barriers to the educational advancement of the poor.

It is argued that the policy prescription was overridingly motivated by issues of equity and access, and in this context there are important conceptual questions to be addressed related to the distinction between 'cross-sectional' and 'life-cycle' income distribution. On the other hand it is apparent that HECS falls a long way short of providing an economically efficient framework for resource allocation within higher education, but we suggest that, with some modifications, schemes of this sort could be devised that pay far more attention to price signals. An essential point of our argument is that pay-later mechanisms are not by definition incompatible with arrangements promoting the role of demand and supply forces. In this light we examine a voucher scheme for higher education.

The nature and historical course of government investment

Governments have invested not only in the economy's physical capital stock but also in its human resources. Their actions have directly and indirectly affected population and workforce growth. Perhaps as many as one-half of all migrants arriving on our shores over the last century have been subsidised from the public purse. Tariffs and public works helped to absorb population in the 1920s and in the 1950s and 1960s – though this is not to convey that such policies were free of economic costs. Governments have also sought to influence the quality, not just the quantity, of Australia's human resources. They have increasingly come to provide for public health care (though not without contest) and have long invested in education, the leaven of our human capital. The quality of the stock of human resources has also been affected by

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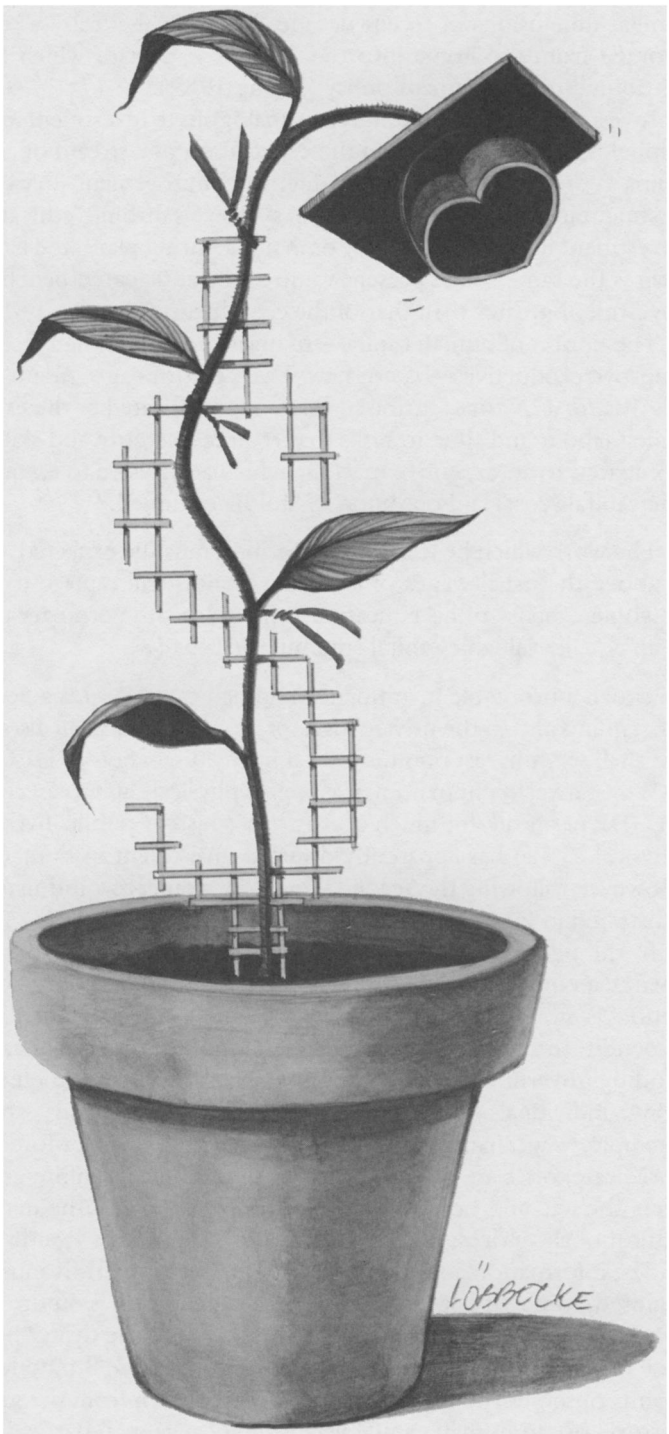

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new arrivals from overseas (Withers 1989), while an internal source of similar dimensions in recent decades has been the 'release' of skilled women from the home into the workforce, part of which has been attributed to government policy (Young 1989).

Investment in human resources is analogous to investment in physical capital. Costs are incurred in the expectation of a stream of economic gains in the future, through productivity improvement. In cases of investment in human resources, say in skill levels through education, and investment in a new machinery or manufacturing plant, the basic question is the same: is the present value of the anticipated benefits of the investment greater than that of the costs incurred?

The notion of human capital – of investment in human resources to improve productivity – is not new. Two centuries ago, Adam Smith in his *Wealth of Nations* surmised that a man educated at the expense of much labour and time to tasks that require dexterity and skill may be compared to an expensive machine which adds more to earnings than the capital (cost) laid out upon it. Smith continued:

> The work which he learns to perform, it must be expected, over and above the usual wages of common labour, will replace to him the whole expense of his education, with at least the ordinary profits of an equally valuable capital (reprint 1961: p113).

In short, a profitable investment in human capital yields a positive return in income to the private investor, but the public can also gain. As we shall see, this last point is crucial in any discussion of HECS.

Whilst investment in human as well as physical capital can contribute to GDP per head, for much of Australia's history public investment in physical capital has apparently dwarfed investment in human capital. However, following the Second World War a quiet revolution occurred, illustrated in Figure 1 (opposite).

In the figure public human capital formation is defined as government expenditure on education, health and immigration. Such a definition is not, of course, entirely free of problems. Other types of expenditure and action by government impinge on human capital, including government interventions which affect the parameters underlying individuals' decisions concerning their human capital, for example, wage fixing, industry assistance and so on. Moreover, the three categories are not independent of one another: immigration affects the age and health of the total population and the demand for educational services; and education probably affects health (via attitudes, information and the nature of jobs performed). It must be recognised, too, that part of public health expenditure is on the very old, who have passed beyond productive effort, and the dying; hence it is not strictly expenditure on human capital formation. But none of these points obscures the main conclusion to be drawn from the graph, the historic rise in human capital versus physical capital, particularly after

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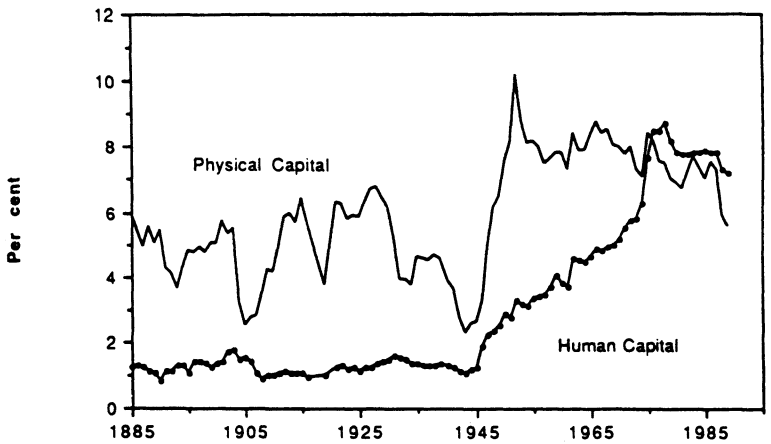
Figure 1. Government Expenditure on Human and Physical Capital Formation as % GDP



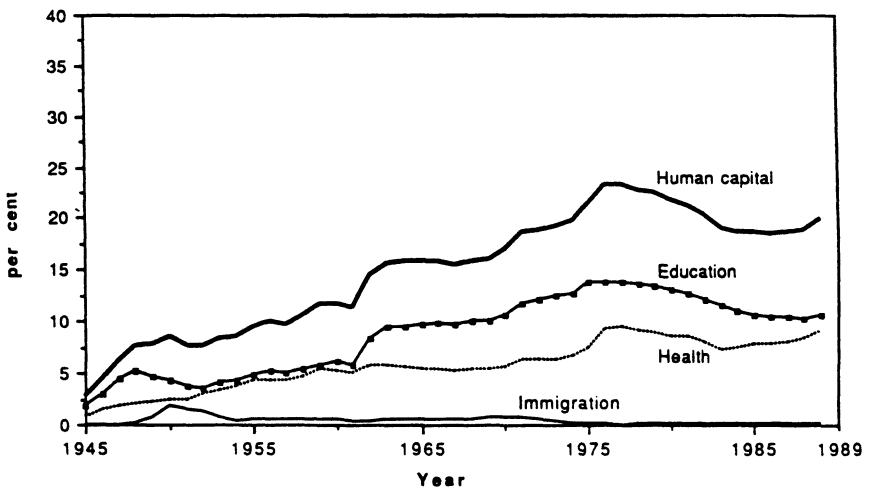
Source: Australian Economic Statistics, 1949/50-1989/90; unpublished estimates by N. G. Butlin using Colonial, State and Commonwealth *Treasurers' Statements*; 1985/86 Budget Paper no.6; Dept of Immigration & Ethnic Affairs, *Review*,(various issues); Vamplew (ed.), *Australian Historical Statistics* col.64 p133; Butlin, 'Our 200 years: Australian Wealth and progress since 1788. A Statistical Picture', pp. 229-230.

the mid-1950s.

The rise in public expenditure on human capital reflected increased spending on health and especially education, at least through most of the 1960s. Not only did spending on education rise but its share relative to health rose: See Figure 2.

A further feature is that the state has provided a greater part of the total outlays on education than in the case of health and immigration

Figure 2. Shares of Government Expenditure: Post 1945



Source: Australian Economic Statistics, 1949/50-1989/90; unpublished estimates by N. G. Butlin using Colonial, State and Commonwealth *Treasurers' Statements*; Dept of Immigration & Ethnic Affairs, Review, (various issues); Barnard 1987.

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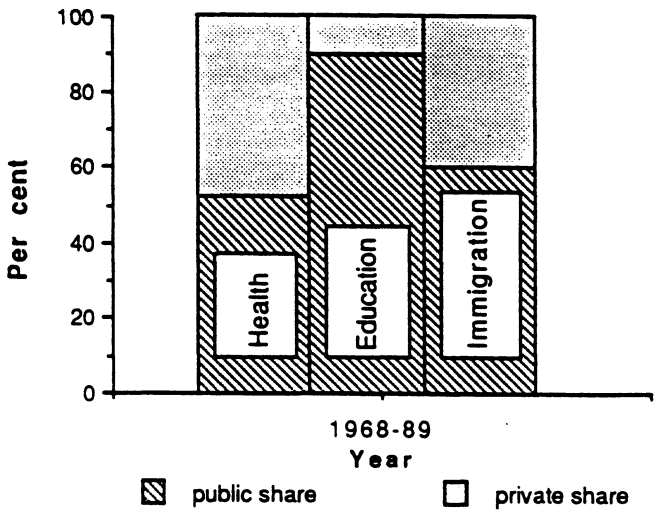
where the private sector contributions have been relatively larger, as shown now in Figure 3.

Figure 3. Public and Private Shares of Human Capital Formation



Source: Derived from unpublished estimates by N. G. Butlin using Colonial, State and Commonwealth *Treasurers' Statements*; *Year Book of Australia* (various years); ABS, *Social Indicators* (various years); *Australian Economic Statistics*, 1949/50-1989/90, RBA Occ. Paper 8, table 5.4, p. 198 & table 2.12. p.73; ABS, *Expenditure on education, Australia* (various issues); Dept of Immigration & Ethnic Affairs, *Review* (various issues).

What explains the increase in the education component of human capital in postwar Australia? First, there were the demographic pressures for education set in train by the postwar 'baby boom' and the surge in immigration. Second, incomes were rising and attitudes changing. Parents' aspirations for their children's education and governments' efforts to 'democratise' post-primary education were probably important factors increasing the education participation rates among the 15-19 year olds. In the 1970s the Whitlam government consciously promoted education as an 'instrument for equality', significantly increasing expenditure per student.

Third, the growth and diversification of the Australian economy into generally technically more demanding fields after the war increased educational demands. The most important long-term trend has been the decline of the farm sector and the rise of the professional and clerical occupations. This alone would suggest a rise in demand for the skills provided by formal education and training.

At the tertiary level a number of things were happening. Starting with the Menzies Government in the 1960s, the Commonwealth rapidly expanded the university sector – the University of New South Wales, Monash, La Trobe, Flinders, Macquarie, Deakin, Griffith, James Cook and Murdoch Universities were added to the grid and the established

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universities enlarged. Then a whole new sector, colleges of advanced education (CAEs), was developed. Still later, following the Kangan Report, came Commonwealth contributions to the development of the Technical and Further Education system. The Whitlam Government's assumption of total financial responsibility for the direct costs of all higher education underpinned the trend evident from the late 1950s of more and more federal funding. Overlaid on this long-term expansion were budget cuts by Labor (including the ARGC budget) in 1974/75 and restraints on spending under the Fraser Government.

More recently, the Hawke Labor Government has abandoned Labor's earlier principle of tertiary education without charges in favour of students contributing to the cost of their tuition through HECS – in addition to restructuring the tertiary system (Williams 1989). This does not necessarily mean that the long-term trend of increased public spending on education on a *per capita* basis, or relative to GDP or to spending on physical capital, will be reversed in the near future.

Education, growth and externalities

Next we consider the likely impact of education spending on economic growth and, as a prelude to the section starting on page 284, the policy implications of the extent of the gains to individuals from public investment in education. The latter issue involves the question of externalities (or 'spillover' effects) of education to the community at large.

Considerations of growth While the general importance of human capital has been recognised since Adam Smith's time, the systematic use of the term and its analysis date from the late 1950s (Solow, 1957). Solow noted that the largest share of economic growth in US economic history could not be attributed to the growth in physical units alone (physical capital, labour) but to unmeasured 'residual' factors, sometimes called technical progress. Human capital came to figure prominently in what constituted the residual.

Estimates of Australia's economic growth in this century are broadly consistent with this view in that the periods of high residual growth in Australia in the 1960s and 1970s correspond with rapidly rising public expenditure on education (Pope 1989: p20). Indeed, by the early 1960s the language of some Australian policymakers was quite directly that of the human capital approach. The Martin Report (1964–65: p4) stated 'Education should be regarded as an investment which yields direct and significant economic benefits through increasing the skill of the population and through accelerating technical progress'.

Although the proposition that education is a requisite for economic growth is today virtually a platitude, there remains room for caution. The high correlation between income growth and education is a tangle of cause and consequence: that both increase in step in the postwar

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period not only reflects the effect of education on the growth of GDP, but also the effect of rising income upon the demand for education. Moreover, while expenditure on education in Australia rose sharply in the 1960s and 1970s and student/teacher ratios fell, some argue that this is not evidence of higher quality educational inputs but, rather, is indicative of lower teacher productivity (Freebairn *et al.* 1987). Research in the United states demonstrates the absence of any strong or systematic relationship between school expenditure and student performance (Hanushek 1986).

A more complex point is that education is not a homogeneous service, meaning that a dollar spent on one type of educational input may yield a different result for growth than another (for instance, Latin language versus skill formation in trades or key areas where major shortages prevail). What we stress is that education can be a help to economic growth, but that economic growth is not *necessarily* the single nor the most important purpose of higher education.[2] As one economist has observed, its most important role is perhaps the nurture of a free, civilised, peaceable and cultured society in which self-government is also effective government.

'Spillovers' and the public purse Investments in human capital made by individuals and governments have attendant costs as well as benefits. The costs are incurred in the expectation of future returns through productivity and other increases. In this regard it is important to distinguish between the private and social net returns (benefits *minus* costs) to human capital. As we have seen, much of the increase in human capital, especially formal education, has been financed by the state. When individuals cannot appropriate all the benefits, some 'spillover' is enjoyed by society at large. With education the 'spillovers' or externalities include:

- the benefits of living in a more educated community, including a more cultured society with effective self-government (that is, better public decisions), lower crime rates, more considerate use of shared spaces (for example roads), etc.,
- the benefits that the educated bring to knowledge, research and technology which they cannot fully appropriate themselves in the form of high wages/salaries or other financial payments to others. In some cases more educated consumers are a prerequisite for technological innovations which are more efficient (a possible example being electronic payments systems); and
- the benefits that accrue to fellow workers of having more educated or skilled colleagues in their midst, through imitation and emulation.

The private benefits of education consist basically of the higher income received, better management of household capital (houses and consumer goods comprise 30 per cent of the nation's wealth) and the enhanced capacity to enjoy mental pursuits of one kind or another. The

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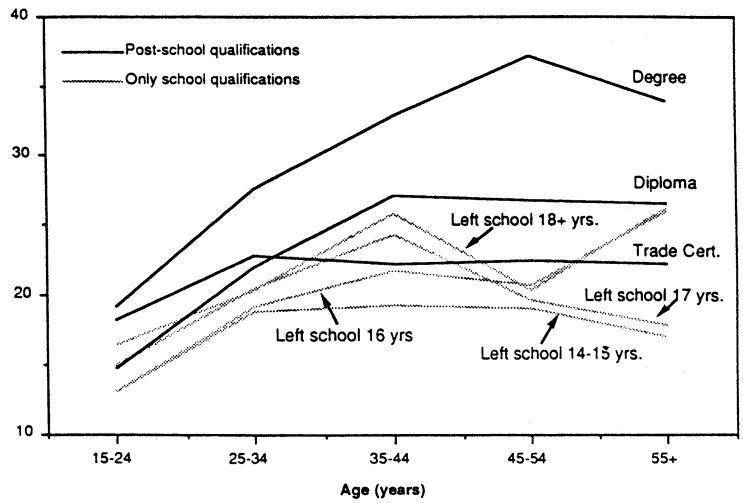
private costs are the fees paid, books, stationery and other aids purchased, and forgone income in attending classes rather than working.

It is the social net returns which are relevant from the perspective of the economy and society as a whole. One fundamental problem is that it is virtually impossible to quantify the dollar value of the social 'spillovers'. But at the same time estimates of private returns are meaningless as guides to the value of education to society at large.

Nonetheless, in assessing how much the public purse should support higher education some reckoning of private versus social returns cannot be avoided. In this context we know that individuals enjoy monetary gains from higher levels of education. This is shown graphically by the ABS 1985-86 Income Distribution Survey Figure 4. With but one exception, trade-level training, those people with post-school training earned more on average than those without qualifications. Generally, the higher the level of the qualification, the higher the income received (the trade-level category is probably biased downwards by the practice of taking cash without issuing receipts of payment).[3]

Figure 4. Pre-Tax Income by Age and Education with and without Post-School Qualifications, 1988–86 ($'000)



Source: **ABS** unpublished data.

Gross income by age is not the same thing as the private rate of return. For the right calculation we need to know the stream of income earned with educational qualifications until retirement compared with that earned without qualifications, together with the costs incurred in obtaining the qualification, the largest by far being forgone earnings. Recent work provides a number of estimates of rates of return of different levels and types of educational investment. These suggest that a university degree pays well. For instance a 1990 study (Chia) found that a university bachelor's degree returned the highest of three training

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strategies examined, with an internal rate of return of about 9–10 per cent. Thus the picture presented by gross income data and the figures of private net returns to education appears to be a consistent one. Both confirm generally the nexus between increased education and higher monetary rewards.

What implication does this result hold for using the public purse to fund part or all of individuals' education? Individuals gain through higher incomes, so they as 'users' might be asked to pay the bill directly themselves. But if there are 'spillovers' to the community at large then the state should rightly pay to obtain these. The real issue then is the correct *split*. If one believes that nearly all the benefits of an education go to the individual who receives it, as some economists apparently do (Brennan 1988), then the user, the benefactor, should pay much of the direct costs. In this context the Wran Committee's recommendation of tertiary charges equal to about 0.2 per cent of direct degree costs can be seen to represent a more generous view, namely that 80 per cent of the direct costs of education by-pass the individual who receives it and flow to the community at large. The last federal budget does not affect the tenor of this conclusion.

To summarise: a major difference between the first half of this century and the last 40 years is that government intervention in the economy targeted physical capital formation in the former, human capital formation in the latter. The recent slogan (of government ad men), 'Australia, a clever country', encapsulates the notion or hope of national productivity gains through education and training. We have seen that these views, knowingly or not, are grounded in human capital theory. There have been two quiet revolutions. The first was the ascendancy in public spending of human over physical capital. The second, less dramatic than the first, came with tighter restraints on spending and an ideological shift somewhat toward market mechanisms. In the higher education arena funding became qualified: for one thing higher education is no longer seen as completely 'free' to the individual on grounds of its social benefits to the community. The next section considers HECS in this context.

The Higher Education Contribution Scheme

A summary As we have just seen, HECS is a charge on higher education in which users, whether they graduate or not, become liable to pay additional taxes on income until they meet around 20 per cent of the cost of their higher education (that is, about $2000 per full-time year in 1991, increasing to $2144 in 1992). The requirement to pay arises only when the student's or graduate's personal annual taxable income exceeds average income, or around $25 500 in July 1991. The

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rate of repayment of the debt is 2 per cent of taxable income per year in the bottom bracket, or about $510. The rate increases to 3 per cent at around $29 000, and to 4 per cent at just over $40 000, implying that since the debt is fixed in real terms, former students on high incomes pay back the charge relatively quickly.

There are (at least) four major issues implicit in the recommendation concerning HECS. One is that requiring the majority of students to pay a particular percentage of course costs reflects a judgement concerning the division of social and private costs and benefits. In an economic theory context and as we suggested above, a charge of around 20 per cent of government outlays implies that around 80 per cent of direct expenditures on higher education benefits the community generally. For full-time students the principal cost of higher education continues to be forgone earnings, which, however, are probably around ten times greater than the HECS charge.

Second, since the charge does not vary by course type, HECS gives little weight to the specific cost of the provision of the service (the exception being that the debt is halved for a part-time year). In this sense the policy sits uneasily with traditional notions of economic efficiency which highlight the desirability of resource allocation of marginal cost pricing. Implicitly this aspect of HECS ascribes different values of social spillovers to each course, which means that the size of the government subsidy is related directly to the associated costs.

Third, while the unpaid charge is adjusted so as not to change in real terms, users of higher education with low personal incomes in any particular year are not required to pay in that year. This suggests that unlike most other loans arrangements – the scheme offers insurance for those whose personal income circumstances are not favourable in particular periods. It implies also that a cost of such an insurance arrangement is that some individuals will not fully repay their HECS charges.

Fourth, the relevant unit of payment of the charge is important. While the impact of most fees schemes is probably conditioned by the individual's family (usually parental income HECS repayments are based solely on personal capacity to pay. This means that the scheme gives relatively low weight to what might be termed 'cross-sectional' income distribution (one's circumstances at the time of enrolment) and relatively high weight to what might be termed 'life-cycle' personal income distribution (personal circumstances over time). As noted, this is manifested most clearly in individuals being required to pay only when their individual income circumstances are relatively favourable.

In short, the scheme is a hybrid. Its conceptual basis is that of a fees-with-government-financed-loans policy in which the loan repayment depends on earned income. Importantly, the tax dimension of HECS is relevant only in so far as collection of the debt is income-contingent. Given this, the obvious agency to be involved is one with access to individual income information, the Australian Tax Office. In other

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words, contrary to popular misconception, HECS as such is not analysed usefully as a tax.

The conceptual basis of HECS: Allocative efficiency

The issue of externalities has been considered briefly above. One message seems to be that on the basis of economic theory one of the least easy pricing arrangements to justify relates to having a uniform charge, since such an approach implies greater societal spillovers from higher-cost courses. Discussion of spillovers generally helps only in the sense that their existence implies that higher education students should not pay the total amount of the direct costs involved in the provision of the service. But beyond these points economic analysis has not so far been helpful in the determination of the right charge.

The Wran Committee recommended differential charges by course, which as we have seen has some justification in theory. Under the assumption that marginal spillovers are similar for courses of equivalent length, allusion to the marginal cost of courses provides some basis for determination of the structure of charges. The approximate charge of 20 per cent of average course costs assumes then that marginal spillovers do not vary in proportionate terms by course (per year), a position implying that , as suggested above, around 80 per cent of expenditures result in social gains. A further complication is the (very high) likelihood that average costs exceed marginal costs, which necessarily implies that the charge recommended is greater than 20 per cent of marginal direct costs; the complicating implication in this case is that *less* than 80 per cent of government expenditures are assumed to produce externalities.

It is important to note that HECS does not *per se* add to economic efficiency, the relevant matter being the resource reallocation consequences of the imposition of a charge. It follows that the extent of efficiency improvements from the scheme depends on the size of the relevant demand and supply responses and the overall consequences of the charge for the expansion of the system.

Resource reallocation consequences from HECS at the institutional and departmental level of higher education are likely to be substantial, given that charge revenues are not earmarked directly back to the point of service delivery. On the other hand, the government's promise to use HECS monies to expand and improve higher education is likely to move marginal social benefits and costs towards equality, if it is the case that the former currently exceed the latter. But the less the extra revenue used to expand the system, the lower will be this impact.

So in summary, compared with possible alternative schemes, HECS is not likely to generate considerable gains in economic efficiency. The charge does not in general reflect the costs, nor does it have any obvious correlation with student demand.

The obvious and implied issue relates to whether or not a scheme *could* be designed in the context of HECS, which offers also some of

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the features that appear to be desirable on pricing grounds. The most important point to make is that there need be no incompatibility between giving additional weight to pricing signals (and thus to costs and student demand) in the context of the maintenance of the access advantages of HECS.

Vouchers: Pros and cons A scheme that takes into account the access advantages of HECS (see following section), but also allows increased-economic-efficiency advantages might work as follows (see Karmel and Arthur 1991). The government provides vouchers (redeemable at any institution) to all students considered to have qualified for a higher education place, the dollar amount of which reflects the valuation of the externalities (for example $6000, but it could be zero in a full charge-no externalities-world).

In this model institutions set their own prices to reflect costs and perceptions of student demand. If a student is qualified for and wishes to buy a place in a particular course, s/he must agree to pay back through the tax system the difference between the price and the value of the voucher, adjusted for an appropriate interest rate, all of which would be done under current HECS arrangements.

The role of government finances would be two-fold. Most obviously, vouchers would be converted into cash upon presentation by the relevant academic department. And to cover the student's additional charge, most of which would be eventually recovered through the tax system, the government would need to pay the relevant department directly, in the year of enrolment.

This option has the advantage that it allows institutions price flexibility with attendant allocative-efficiency implications. These might include the increased potential for salary increments in areas of staff shortage, or the offering of additional research resources to departments or academics in high demand. Also, the existence of transferable vouchers is alleged to increase work incentives, if students are more likely than currently to 'shop around' or to expect a better service given payment.

Such a scheme has the following disadvantages. First, like all price flexibility schemes, some attention needs to be given to the fact that universities do not pay rent to the government. In the absence of reform in this area, those institutions in advantaged localities, such as the Universities of Sydney, Melbourne, Western Australia and Adelaide, would be able to set, perhaps unfairly, relatively high prices conditioned in part by an implicit government-rent subsidy.

Second, it is difficult to know *a priori* what the short-run government outlays would be to cover the expected ensuing (additional?) HECS repayments. If institutions were able to charge what they want, overall charges might exceed the current budget outlays. Further, very high charges could significantly reduce enrolments, implying that overall

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total outlays could increase or decrease. To mitigate possible problems here, in the initial stages the government could set price bands which could be broadened over time.

Thirdly, as is the case with the current HECS, not all students would eventually pay back the full amount. This is a cost of the government acting as risk-taker for individuals. Related to this and importantly, combining a voucher-pricing system with HECS pay-back arrangements allows the preservation of the access and equity advantages of the scheme, now considered.

The conceptual basis of HECS: Equity and access As we have noted, fundamental characteristics of HECS relate to issues of equity and access. This is apparent with respect to the size and pay-back mechanism of the charge, and the long-run income-distribution consequences of not charging. There are two pertinent and different sets of facts of importance here concerning the contemporary socioeconomic background of higher education users, and the lifetime income advantages of graduates.

In the first category, it is clear that those with access to the system tend to come from highly advantageous socioeconomic backgrounds. The Wran Report offers the following data: '43 per cent of children from professional families entered higher education (in 1982), while only nine per cent of children from unskilled family backgrounds entered higher education. The participation rate of those from unskilled (and semi-skilled) backgrounds would have been about 50 per cent if representing their proportionate mix in society'(p.5-6).

There are obvious reasons why this is the case, a major one being the high opportunity-costs of keeping children in upper secondary school, costs which loom relatively large for poor families (Blandy and Goldsworthy 1973). As well, it is likely that both the quantity and quality of (pre-higher) education inputs are relatively great for children from advantaged socioeconomic backgrounds. The crucial point is that arrangements in higher education in which no charge is involved seem to involve a transfer of general taxpayers' resources to those on average already socially and economically well-endowed.

A second issue related to distribution concerns the individual income benefits arising from participation in higher education. As we have noted calculations of the private rate of return to investment in higher education have resulted typically in the finding that the activity is very lucrative (Chia 1990). Several issues in this area warrant attention, however. For example, some part of the measured private rate of return to investment in higher education is a consequence of excess demand because between 20 and 30 000 currently 'eligible' students do not gain access. The one point here is that an expansion of the system, *ceteris paribus*, reduces this return.

A complication in interpretation of rate of return calculations is that

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of ability and motivation biases: those experiencing higher education are likely to be more talented, in a labour-market sense, than others, which necessarily means that the measured affect on earnings of graduation is an overstatement of the role of education as an income determinant. Overseas studies suggest that these biases are not great (Griliches 1976). But there is no doubt that higher education has provided and continues to provide handsome investment-returns to individuals.

The above implies strongly that the imposition of a charge has an equity justification in a life-cycle sense. This means that those with access to the system derive private benefits which seem to result in their being in the upper echelons of the income distribution. Since taxpayers in general underwrite the vast majority of expenditure, which tends to assist those from advantaged backgrounds, imposing a (small) charge on usage does not seem unfair. At the very least, charging in this form is highly unlikely to be regressive.

There are several other points worth making in the context of ability to repay. One is that income-contingent repayment is justified principally on equity grounds. After all, those users of higher education who choose not to participate in the labour force have used social resources and there is no compelling reason on an efficiency basis for their being exempt from paying. The income threshold of around $25 500 per annum was chosen so as to not impose a future disadvantage on those users of higher education with payment difficulties at any particular point in time. A similar justification presumably motivated the decision concerning the annual size of the levy of (what is arguably a modest) two per cent of taxable income at the lowest rate. As well, having a progressive repayment structure in the absence of a real interest rate reinforces the point that distributional issues are addressed; those paying back an interest-free loan of a given size more quickly are in essence paying a greater debt.

A second concession to ability-to-pay relates to the income unit chosen being personal, not family. One part of the reasoning behind this is straightforward, although the empirical significance of the potential problem is difficult to ascertain. The influential conjecture for the Wran Committee was that the use of family income would have resulted in a relative diminution in the participation of women, given a gender-bias against women in access to family financial resources (Edwards 1983).

These examples serve to highlight what must be patently clear to even the least perspicacious analyst of the scheme: the form of HECS is dominated by considerations of the ability of users to pay. Given a case for charging, it is difficult to construct a scheme that has fewer and less significant deleterious consequences for overall student demand and the access of the disadvantaged to higher education. Up-front fees, including schemes with means-tested family income scholarships or government subsidised loans, are less likely to satisfy these criteria. In

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part this follows from such schemes giving no weight to life-cycle distributional issues.

The bottom line seems to be that, where trade-offs exist between questions of economic efficiency and equity, HECS accords a higher weight to the latter. There is little reason to believe that HECS has injected any significant resource-allocation forces into the system. Ironically, given the weight-accorded access, the initial negative public reaction to HECS was overwhelmingly in the nature of concerns for those who would (allegedly) be disadvantaged by the scheme — concerns dealt with elsewhere (Chapman 1988).

Notes

1. Of course, Horne (1964) used the phrase to stir up debate, what Max Harris once described as saloon-bar argument. There is considerable irony in this as Horne saw Australia of the sixties as a 'victory of the anti-mind', while the phrase 'lucky country' continues in circulation with the connotation of good fortune.

2. The extent of assistance to economic growth will differ by type and level of education relative to the demands of the economy and the efficiency of application. Education is not seen to be a sufficient condition for growth. Aldcroft (1990) argues that in the case of postwar Britain problems of allocation between types of schools and of economically inefficient subject choices are largely responsible for the lack of noticeable economic benefit. (In particular he argues that too few resources were devoted to technical education and vocational training and that too much emphasis at all levels was placed on theoretical education and too little on applied work.)

3. Another issue must be mentioned. The results shown in Figure 4 may partly reflect the screening rather than cognitive or skilling functions of education. People with the capacity to earn relatively high incomes also tend to have the capacity to pass exams; they are accredited by a system which actually makes little change to their talents and skills in the process since the 'value added' by education is small. This view in our opinion is unlikely to be of overwhelming importance (Barr 1989).

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