Does HECS Deter?

Factors affecting university participation by low SES groups

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Executive summary

The participation in higher education of individuals from low socio-economic groups remains relatively low. In 1997 only 19 per cent of higher education students came from the lowest quarter of the population as measured by socio-economic status. This relatively low participation has remained largely unchanged over the past two decades despite large increases in the size of the student body in higher education. Since its introduction HECS has been identified by some groups and commentators as part of the explanation for the relatively low participation of people from such backgrounds. This report attempts to identify some of the factors that may explain this low rate of participation and in particular addresses the issue of whether the introduction of the HECS discouraged persons from low SES backgrounds from undertaking higher education.

Identifying the impact of HECS is made difficult because it has a number of elements. It does raise the cost of higher education to the individual and numerous international studies have shown that fees or cost increases do diminish demand for higher education. HECS payments, however, are deferrable and contingent upon reaching certain threshold income. Persons who were unable to pay HECS at the time of enrolment are not be prevented from entering higher education. As a consequence HECS can be paid sometime in the future, for some individuals a very long time in the future. This is likely to mute the impact of HECS on the willingness to participate in higher education.

Various methodologies are used in the report to identify the reasons underlying this low participation including attitudinal surveys, multi-variate analysis and quasi-experimental analysis. These differing approaches generally point to HECS being a very minor influence, if a factor at all, for the low participation by low SES groups. The main reasons found in this report and confirmed by international studies appear to be the attitudes and values of low SES groups towards higher education.

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1. Introduction

The decision whether or not to undertake higher education studies is influenced by a wide range of economic, social and educational reasons. Some individuals will choose not to undertake higher education studies as the other options open to them, for example in the labour market, will be more attractive. For others, for whom higher education studies may be a sound choice, real or perceived barriers may impede them in undertaking higher education. These will include inadequate financial resources, lack of family or peer support, language difficulties and cultural alienation.

Successive Australian Governments have had a commitment to removing the barriers and improving the access of disadvantaged groups to higher education. Over the past decade effort has been directed at improving the participation of students from low socio-economic status (SES) backgrounds in higher education. The participation of young people from such backgrounds remains low, however. Ever since its introduction the Higher Education Contribution Scheme (HECS) has been identified by some commentators as a contributing factor in the inequitable access to higher education. This paper attempts to identify what factors account for this low participation among low SES individuals and ascertain whether the introduction of HECS in 1989 and subsequent changes to that Scheme may have provided particular disincentives for such students.

The next section of this report sets out the development of definitions of socio-economic status used to measure the participation in higher education of persons from low SES background and describes their historically low participation. The third section describes the policy response aimed at improving the participation by low SES groups. Reasons underlying the low participation by low SES persons are canvassed in the fourth section. Various methodologies are discussed and employed to identify these reasons. These focus on whether the introduction and subsequent changes to the HECS presents a barrier to participation by low SES individuals who may be unwilling to incur a HECS debt. Each of the methodologies employed—attitudinal surveys, multi-variate analysis and quasi-experimental analysis—point to HECS only being a minor influence, if a factor at all, for the low participation by low SES individuals. Other factors, such as values and attitudes, which may affect participation in higher education are discussed in section five with concluding comments in the following section.
2. Participation in higher education by low SES groups

Socio-economic status is a measure of an individual’s or group’s rank in the community and indicative of the command over resources which affects the level of choice or control over one’s life for example, in terms of lifetime career, educational and social options. Differences in individual and family income, occupation and educational qualifications are usually seen as the three largest components of social standing as well as command over resources. The argument that the economic status of individuals and families affects the likelihood of participation in higher education derives from the view that differences in financial means implies differences in the capacity to support family members while they are undertaking their studies and also fund the direct out-of-pocket expenses associated with their studies.

It is also likely that differences in individual and family educational attainment and occupation reflect differences in career aspirations, attitudes to education which are transmitted to children and which may reflect the willingness of families to support their children with their education. In many cases differences in economic resources tends to be associated with differences in educational attainment and it is not always clear which is the prime reason behind the social differences in educational participation.

Unfortunately it is not possible to develop a long time series measuring the access to higher education of persons from low SES backgrounds. Statistical collections and definitions of low SES have varied over the past several decades. In the past measures based upon the occupations of students’ fathers have been used. The social standing of occupations was obtained largely by ascertaining the mean income and educational qualifications of persons employed in various occupations. This resulted in a ranking of occupations from professionals down through the clerical to manual occupations.

The Department of Education, Training and Youth Affairs (DETYA) currently uses a socio-economic index developed by the Australian Bureau of Statistics (ABS 1998). The ABS produces various indexes of socio-economic conditions by geographic areas—Socio-economic Indexes For Areas (SEIFA). Information has been taken from the 1996 Population Census on a broad range of social and economic characteristics of the population and used to construct these indexes. These include the Index of Relative Socio-Economic Disadvantage, the Index of Economic Resources and the Index of Education and Occupation. The variables underlying the Index of Relative Socio-Economic Disadvantage include income, educational attainment and occupational status. The Index of Economic Resources classifies regions according to the economic resources of households in the regions—this includes income and expenditure, home ownership and other assets such as number of cars and dwelling size. The Index of Education and Occupation reflects the educational, labour force status and occupational structure of households in the regions. The last two indexes are useful as they enable the effects of low SES background on participation to be separated into financial effects and
broad attitudinal or value effects associated with family educational and occupational background.

The Higher Education Student Statistical Collection held by the DETYA uses the home postal area of students to define their SES background. The socio-economic status of young people cannot be measured directly by the education, occupation and income of the young people themselves. Their family socio-economic status is employed as a measure of their status. Students from low SES backgrounds are defined as those from home postal areas which are classified within the lowest socio-economic quartile of the population as determined by the value of the ABS’s Index of Education and Occupation. That is, their home address is in a postal area which has a relatively high proportion of people without formal qualifications, unemployed or if employed then in occupations for which formal qualifications are not required eg labourers and related workers.

The use of home address postal area has the benefit of being readily collectible from students as they enrol at higher education institutions and does not require additional information about family background that some students may be reluctant or unable to provide. The use of home address postal area has been criticised as providing a poor indicator of the SES background of individuals given the socio-economic diversity within many areas. That is, students will be misclassified based on the average SES of their postal area regardless of their families particular situation. This issue has been addressed by Jones (1993), Martin (1994) and most recently by Western, et al (1998) who indicate that there could be large errors involved in using postal areas as a measure of socio-economic status at the individual level although postal areas do provide a useful measure of the socio-economic status if the sample is large for example the socio-economic status of parents of a cohort of school leavers and the policy analysis is undertaken at the national, State or institutional level. The areas based measure of SES status will be employed in this paper to infer the socio-economic status of students at the national and state level to minimise the concerns noted above.

The lack of standardised definitions of socio-economic status over the past several decades should not rule out broad impressionistic conclusions, however, as the different measures have considerable degree of commonality in the criteria used. The National Report on Australia’s Higher Education Sector (1993) indicated that university/CAE students in 1984 whose fathers were in manual occupations participated in higher education at only 40–50 percent of the proportionate or expected rate given the share of the workforce in manual occupations. Looking at longer time trends Karmel (1995) found that for individuals born in the early 1960s and 1970 there had been little change in the relationship between family background and educational attainment, that is little evidence that the inequality of educational outcomes had been reduced as a consequence of the general rise in educational attainment. Currently, around 19 per cent of 17–24 year old students come from postal areas representing the lowest SES population quartile based on occupational and educational characteristics. This implies that students from low SES are participating in higher education in 1998 at approximately 60 per cent of their proportionate share. This suggests that there has been little improvement in the social composition of students over the past several decades.

Moreover, this is an experience not limited to Australia. The OECD (1998, p32) reported that equity is seen as a common goal by member countries but despite best endeavours participation by low socio-economic groups is still relatively low.
The expansion of educational opportunities in other OECD countries has not led to significant changes in the socio-economic composition of the student bodies. Results from several countries indicate that it is only when the supply of students from higher SES groups has been exhausted that the share of students from low SES backgrounds will rise (Western at al, 1998, p1).
3. Equity policies

Inequities in participation in higher education have been recognised since the establishment of universities in Australia. Governments over the past half century have attempted to address this concern through various means including scholarships, the abolition of university fees and the introduction of means tested income support arrangements such as the Student Allowance Scheme and AUSTUDY. The design of the Higher Education Contribution Scheme (HECS) which was introduced in 1989 was undertaken with sensitivity towards its potential effects on people who may be unable to pay the contribution to the costs of their higher education. The capacity to defer payment of the contribution ensures that no potential student should be disadvantaged in their access to higher education if unable to meet the cost of their contribution at the time of enrolment.

Senator Vanstone, then Minister for Employment, Education, Training and Youth Affairs, confirmed the current Government’s commitment to achieving equity in higher education in her 1996 Budget Statement which stated:

‘The Government believes that if a person achieves the required entry standard for higher education, a disadvantaged background should not hinder their access to and successful graduation from university.’

The current Commonwealth Government provides support through its Higher Education Equity Program (HEEP) for improving the higher education participation for low SES persons as well as other disadvantaged groups. Funds are provided to assist institutions meet their targets for equity groups. Institutions are required to produce equity plans which contain strategies to improve the access to higher education of persons from low SES backgrounds and report on the progress of those plans during the annual discussions with DETYA. The Department uses data from its Higher Education Student Statistical Collection to monitor participation and performance of students from low SES backgrounds.
4. Reasons underlying the low participation of low SES groups

The low proportion of students from the lowest SES quartile has remained unchanged over the last decade. This has occurred in an environment when student numbers have increased dramatically. Between 1989 and 1998 the number of commencing non-overseas undergraduate students increased from 135,000 to 166,000 or 23 per cent. This increased student population is only partly explained by demographic pressures as the higher education participation rate increased from 2.7 per cent in 1989 to 3.5 per cent in 1997 (DEETYA 1997). For the school leaving population aged 18-19 years the higher education participation rate increased from 19 to 25 per cent over the same period. That is access in general increased over the period. Moreover the level of unmet demand for higher education places has fallen substantially since 1992 (AVCC 1996, p12). It is therefore expected that competition for places has not intensified over this period. It is unlikely then that the relatively low and stable share of low SES students is due to high and increasing competition from other social groups for limited higher education places.

It is necessary to turn to other possible explanations for their relatively poor levels of participation and assess the role HECS may have played. These explanations relate to factors which lower the capacity or willingness of persons from socially disadvantaged backgrounds to participate in higher education.

4.1 The effect of the introduction and changes to HECS

The cost to students from undertaking higher education includes the opportunity costs associated with not working, at least for most full-time students and many part-time students, tuition costs and extra living expenses they may need to be incurred. An important additional cost is HECS which was introduced in 1989 to fund in part the subsequent expansion of the higher education sector and to enable the beneficiaries of higher education to contribute to the costs of its provision. Equity considerations were seen to be met by designing HECS as a deferrable contribution. Students could pay their contribution up-front each year before the commencement of their studies or they could elect to defer their payment. The contribution of students who deferred payment would then be recouped through the taxation system when their income exceeded a certain threshold—at the time of commencement the taxation threshold was set at average weekly earnings. The capacity to defer the contribution and the income contingent nature of its repayment were designed in order that persons who did not have the financial resources to pay their contribution at the time of enrolment in their course would not be prevented from participating in higher education. The accumulated HECS
amount was indexed by the Consumer Price Index to maintain its real value but no real interest applied to the HECS accrued amount, again in response to equity concerns.

Over subsequent years there were a series of changes to the HECS arrangements such as lowering income threshold and changes to the repayment rates. In 1996 the Government indicated that while the precise balance between the private and public benefits flowing from higher education was difficult to establish the private benefits were clearly greater than that implied by HECS which represented about 23 per cent of the average course cost. Also given HECS was a flat amount its share of course costs differed widely, ranging from 36 per cent of the costs of an arts courses to 13 per cent of the costs of a medicine course.

In response HECS was increased, the income threshold which would attract repayments was lowered and a differential HECS contribution introduced. Courses were placed into three HECS Bands based upon the cost of delivering the course and the average earning potential of graduates from those disciplines. Law, medicine and veterinary science which are generally high earning and/ or high cost courses were placed in HECS Band 3 with a HECS contribution of $5,500. HECS Band 2 courses attracted a $4,700 HECS contribution and included science, engineering, agriculture, architecture and business/ economics. Courses such as arts, education and nursing were placed in HECS Band 1 with a $3,300 contribution. Courses such as nursing are high cost but have been placed in Band 1 because of their relatively low earning potential.

Notwithstanding the intent to design HECS in a manner which would have minimal impact upon people’s willingness to participate in higher education there a number of factors associated with HECS which may potentially discourage some students from undertaking higher education. Firstly, the introduction of HECS raises the costs of undertaking higher education. This will occur whether the HECS is paid up-front or deferred. As with most goods and services an increase in the cost or price of education will place some downward pressure on demand. The issue is, however, the extent to which HECS raises the costs of education and the price elasticity of demand or in other words the responsiveness of demand for education to the increase in price by potential students. Also are students from different SES backgrounds differently affected.

Overseas studies have found that increased tuition costs, where deregulated higher education fees have been a long standing feature of the funding environment, have reduced demand for higher education. Leslie and Brinkman (1987) carried out an extensive meta-analysis of the literature looking at student response to price changes in the US. Twenty five studies between the 1960s and 1980s were examined and generally found that student demand fell as the cost or price of higher education rose but that this response was inelastic, that is a one per cent rise in price produced less than a one per cent fall in educational participation.

Several studies examined by Leslie and Brinkman were aimed at determining the price responsiveness of students from different socio-economic backgrounds. These produced some mixed results but generally low income students were found to demonstrate the highest price responsiveness. An important difference between the costs or price increases examined in the US studies and the operation of HECS is that the former had to be paid up-front at the time of enrolment and the payment could not be deferred to a later time. HECS was specifically designed to mitigate
the immediate impact of cost increases to students by incorporating an option that allows for the deferral of repayment and subject to the student reaching a particular income level before such repayments commence. This is likely to have the effect that the impact of HECS will be somewhat muted as it can be paid some time in the future, for some individuals a very long time in the future. The higher discount rate on the future held by students, that is the more strongly they care about the present with less regard for the future, the less will HECS affect present behaviour to participate in higher education.

While education is undertaken by many students for its consumption value, that is as an end in itself, many other students also undertake higher education for the purpose of entering a career. Education is seen at least in part as an investment in their human capital. This approach to education allows HECS to be analysed in terms of how its added costs have affected the financial returns to higher education.

4.2 The effects of HECS: Rates of return and aggregate responses

In this regard Chapman and Chia (1989) investigated the impact of the introduction of HECS on the rate of return from undertaking higher education. Chapman (1992) reported that the research predicted that the effect of HECS on the private internal rate of return to education was such that there should have little effect on demand for higher education by full-time students and would not create barriers to access for the disadvantaged. It should be noted that the assumptions regarding HECS amounts and repayment thresholds included in the earlier Chapman report were not the same as exist under current HECS arrangements. Chapman and Salvage (1997) addressed the impact of the 1997 changes to the HECS arrangements on the financial rates of return to school leavers undertaking higher education. They found that the changes had not greatly decreased the high rates of return and were unlikely to have reduced the financial attractiveness of undertaking higher education.

Chapman and Salvage did not analyse the impact of HECS on the financial return to particular socio-economic groups. Students from low SES backgrounds could be affected by a reduction in the financial return from higher education if the perceived rate of return from higher education was lower for them than for other groups. An increase in HECS could conceivably reduce the perceived return below some threshold level that is required to attract such students to higher education. It is not known whether low SES groups have a systematically dimmer view of the financial returns to undertaking higher education.

While the work by Chapman et al estimated that the effects of HECS would not substantially reduce the financial return from undertaking higher education they did not estimate the strength of the possible responses of potential students to these economic signals. The response of individuals was analysed by Andrews (1997) who investigated the impact of HECS on the level of applications to higher education institutions. Applications from school leavers were found to be slightly reduced following the introduction of HECS in 1989 while those from mature persons were down slightly following the 1997 changes. Both falls in demand as measured by the level of applications amounted to about 5–7 per cent of total
applications. It should be noted that this does not imply that the number of enrolments also declined as the number of applications has always exceeded the number of places offered in any year; rather the level of unmet demand for places was reduced. Unfortunately, data were not available on applications by different SES groups and Andrews was unable to address the issue whether applications from persons from low SES were differentially affected by the introduction and subsequent changes to HECS.

4.3 The effects of HECS: Attitudinal surveys

Another means of evaluating the effect of HECS on individual decision-making is through attitudinal surveys. This approach has the advantage of directly canvassing the views of individuals and does not rely on attempting to estimate the financial effects and their possible responses to those financial effects. It does, however, suffer from the possibility of dissonance between what is indicated in the survey regarding attitudes and what actual behavioural responses occur. That is, HECS may be employed as a scapegoat where individuals indicate HECS was the reason for their decisions whereas other more confronting personal factors were the real reasons. Surveys do, nonetheless, offer another approach to shed light on this issue.

The Higher Education Council has monitored the effects of HECS since its introduction. The Council commissioned a survey in 1991 to examine the effects of HECS on both the aggregate and the composition of students (Higher Education Council 1992). The survey targeted disadvantaged groups among Year 12 students and adults, to maximise the number of individuals representative of those specific populations and thereby improving the reliability of the results for those groups. For school leavers HECS was found to be a low ranking factor for those deciding not to go to higher education and a middle ranking factor, ranking behind academic factors and more pressing economic factors, for those intending to undertake higher education, or still undecided whether to do so. For adults HECS was again only a middle ranking factor regarding their attitude to undertake higher education again behind academic and more pressing economic factors. The Council concluded that ‘most qualified applicants from across groups in the study would not be significantly deterred by HECS’ (Higher Education Council 1992, p21).

The Council’s conclusion broadly confirmed the findings of an earlier survey by Robertson et al (1990) which was conducted in 1989 immediately after the introduction of HECS. The survey was conducted in Victoria and Western Australia. The authors concluded that HECS had little effect on the composition of applicants and no effect on the composition of those who accepted an offer of enrolment. There was possibly an effect of HECS on the re-enrolment rates of a highly specific group—external students from a non-English speaking background with a mother with qualifications less than Year 12. The authors indicated, however, that HECS may have been suggested by a number of these students who had failed their courses that year as the reason for their non-re-enrolment when other factors may have been actual reasons.

Ramsay et al (1998, Table 6.8) undertook a survey of students who entered or were eligible to enter the University of South Australia through the University’s Special Access Scheme, or USANET. The scheme aims to address the needs of students arising from their own low socio-economic status where it is compounded by
attendance at secondary schools with significant numbers of students from similar backgrounds. The survey compared their views regarding the influence of HECS on their decision to enrol with a control group of students randomly selected from among the University’s school leaver entrants in 1996 and 1997. HECS appeared to be no more of a negative influence on the decision to enrol of USANET students and USANET eligible students than on the control group. Interestingly HECS appeared to have a more positive impact on the USANET students’ decision to enrol than the control group. Although the small sample size of the survey and its restriction to single university student body makes it difficult to draw general conclusions, two of the factors which had the strongest differential effects on USANET students, compared to the control group, were the immediate family and school teachers who both had a more positive effect on the control group.

In summary, the attitudinal information does not provide compelling support for the view that HECS has been a decisive factor in reducing the higher education participation of student from low SES backgrounds.

4.4 HECS and debt aversion

The payment of HECS is deferred by approximately three-quarters of students and so HECS to them not only represents an increase in the costs, albeit deferred, of undertaking higher education but also the acceptance of debt to be repaid. It has been suggested by the Higher Education Council (1998), Ramsey et al (1998) and the National Union of Students (1997), amongst others that some groups may be unwilling to incur a HECS debt because of a dislike of debt. Dislike of debts has two elements. One is an aversion to the risk attached to a debt, that is a borrower may be unable to undertake the repayments on a debt. The other is a aversion to debt itself. The first source of aversion should be relatively minor for HECS debts as the repayments are made on an income contingent basis, that is repayments are only made when income exceeds a certain threshold, currently $21,334. This arrangement effectively transfers to the Commonwealth Government much of the risk associated with the HECS debt since if the student does not obtain employment after completing their course (and do not have other sources of income) or if he or she obtains employment but earns less than the threshold income, the debt remains unpaid.

The other element of debt aversion relates to the unwillingness to actually incur debt. The acceptance of debt effectively enables an individual to shift their expenditure from the future to the present. The extra funds enjoyed by accumulating debt are expended in the current period and repaid through increased saving in later periods as the debt is repaid. In the context of the HECS arrangements the debt incurred is tied to the purchase of educational services from higher education institutions.

Overseas studies on the effects of student debt on access to higher education have produced somewhat problematic findings for shedding light on the possible effects of HECS on access, as the debts involved have generally been standard loans without income contingency arrangements attached to repayments. For example, the Maritime Provinces Higher Education Commission (1997) in Canada reported on the effects of student debt on higher education participation. They reported that in general there was an appreciation by students of student debt as an investment in
the future and one which had a good return. They did, however, also report that a survey of student and parents had shown the level of debt was more likely to affect the decision of students from low income households to undertake post-secondary education. Importantly they referred to the efficacy of helping students deal with debt once they had completed their studies and not necessarily reducing debt as an up-front barrier to access. It appears that it is uncertainty with regard to the ability to repay the debt once they completed their studies that most exercised the concerns of students and their parents.

It is interesting to note that those students in Australia from a low SES background who do undertake higher education studies are as least as likely as other groups to defer the up-front HECS payment and incur the HECS debt. Indeed 79 per cent of students from low SES backgrounds defer their repayment compared with 71 per cent for the wider HECS-liable student population (Higher Education Council 1998). It is understandable that in general students from low SES backgrounds will be more cash constrained than other students and more in need to defer their up-front payments but it does indicate that these students are at least as willing as other students to incur the HECS debt. This informs nothing of course regarding those persons from socially disadvantaged backgrounds who may not apply to undertake higher education studies because of unwillingness to incur a HECS debt.

One means to ascertain whether individuals in Australia have a debt aversion which affects their willingness to incur a HECS debt is to investigate their willingness to incur debt more generally. In this regard, rather than being reluctant to incur debts most households have increased the level of debt they have been willing to incur over the past decade. As Figure 1 shows the level of debt has increased from 14 per cent of personal income in 1980 to 21 per cent in 1997. Much of this increase has been driven by increased housing finance in part at least in response to increased house prices. The level of personal finance has remained fairly constant at 7 to 9 per cent over the period. Unfortunately the data cannot show the level of debt by SES group but it does indicate that for society as a whole the level of debt has increased substantially for the population as a whole over the past two decades and indicates that there is not widespread and growing debt aversion.

![Figure 1 Housing and personal finance as a percentage of household income](source: ABS, PC Ausstats Time Series Tables, Lending Finance 5071.0, Annual Estimates of National Income and Expenditure Australia—Annual 5204.0.)
While it is not possible to ascertain the level of debt incurred by socio-economic status, it is possible to gain an indication of the willingness to incur debt by various socio-economic groups employing the data base established by the Credit Reference Association of Australia. The data base carries three years of data from 1995–1997 comprising 27 million records of individual credit and loan enquiries. The data can be disaggregated according to provider and credit type, numbers of applications and the dollar amount of the application.

The records in this data base are aggregated by Census Collection District (CCD) and compared to the populations of those areas to arrive an estimation of the proportion of the population of CCD’s seeking credit or loans. A geodemographic tool, LandScape™, developed by Sharp and Anderson (1998) has clustered the CCD’s according to the lifestyle and wealth characteristics of the population into 41 distinct segments. Through this means it is possible to obtain an indication of the willingness of people to incur debt according to the SES characteristics of the geographic area they reside. Figures 2 and 3 below provides two measures of the ‘willingness to incur debt’—the level of applications measured as the percentage of the population and the level of the debt servicing measured as a proportion of disposable income over the 1995–97 period.

The average amount of debt incurred and the average rate of applications are represented by the dotted lines in each figure. Relative debt averse groups would be expected to be positioned in the lower portion of the left hand quadrant with relatively low levels of applications and relatively low levels of debt servicing. The other quadrants will contain groups who have a mixture of debt aversion/debt attraction. The population has been divided into three SES groups based upon their income, education and employment characteristics. High SES groups are defined as having above average income, working largely in professional occupations with higher education qualifications. Middle SES groups tend to have average incomes and basic or vocational education. Low SES groups tended to have below average income, high levels of unemployment and low education levels and have been split into urban and rural to reveal whether their levels of debt aversion systematically differ. This was done as rural populations tend to have lower rates of higher education participation which may be explained at least in part by differing levels of debt aversion.

The allocation of the LandScape™ geographic groupings into three SES groups is a matter of judgement and some groups could conceivably be reallocated without affecting the generality of the findings. Details of the groups and their allocation appear at Appendix A. There were a number of groups which could not be classified as insufficient information was available. These were largely groups which were dominated by retirees about whom it is difficult to obtain information about past income levels or employment patterns. Current income levels tend to be below average and unlikely to be related to SES status. These groups have been allocated to a ‘Not Classified’ category.

Two debt instruments are investigated—mortgages and personal loans. No clear or consistent pattern emerges from an inspection of Figures 2 and 3. For example, low SES groups in urban areas have above average willingness to incur mortgage debts as a proportion of their disposable income but slightly below average levels when measured by their application rate. Low SES groups in rural areas have below
average willingness on both measures. Turning to loans, low SES groups in rural areas exhibit above average willingness to incur debts as a proportion of their disposable income but below average application rates. Low SES groups in urban areas have above average willingness to incur debts on both measures. If there is any pattern it appears to relate to rurality than simply SES background.

**Figure 2** Debt aversion by SES group—mortgages

![Mortgage Aversion by SES Group](source)


**Figure 3** Debt aversion by SES group—loans

![Loan Aversion by SES Group](source)

Multi-variate analysis was employed to estimate more rigorously the effect of SES background on willingness to incur debt. Rather than five SES groupings the analysis employs 34 SES groupings developed by LandScape™ and uses the average level of disposable income for these groups as a proxy for socio-economic disadvantage. As explained above this is not a perfect indicator for SES background as most retired persons will have lower than average levels of disposable income regardless of education levels or past employment—accordingly those SES groups that contain large numbers of retired persons are excluded from the analysis to improve the association between income levels and socio-economic status. Also those SES groups which contain large numbers of students are also excluded for similar reasons as it was not possible to identify the SES background of their parents.

The analysis was restricted to employing the average disposable income of the SES groups as well as categorical variables reflecting whether the populations of the group resided predominantly in metropolitan or non-metropolitan areas and whether there was a significant migrant component to the population. The categorical variables were included in the interest of identifying the effects of other factors which may be associated with socio-economic status and which may have confounded the findings if excluded. Employing the average level of disposable income does not directly reflect the index of socio-economic disadvantage employed by DETYA which is based upon educational and occupational characteristics but given the association of income and educational and occupational characteristics it does indirectly capture similar aspects of disadvantage with respect to social and cultural capital as the Department’s measure.

The analysis revealed that the rate of applications for new mortgages did not vary by SES group but a slight effect was evident on the relative amounts of funds involved. High SES groups appeared more willing to incur larger mortgage debts as a proportion of their disposable income. Low SES groups initially appeared to display lower rates for applications for mortgages but when the effects of rural location were excluded SES status no longer was less significant in explaining the variations in the rates of application. SES appeared to have an effect on the rate of applications for personal loans with low SES groups having a higher willingness to apply for loans than other groups. Low SES groups in rural areas had a significantly lower rate of application. High SES groups tended to have larger loan amounts as a proportion of disposable income. Details of the findings are at Appendix B.

In conclusion, it appears that the SES background of groups had no strong or consistent effect on their level of debt aversion as measured by their willingness to apply for new mortgages or personal loans and on the amounts involved. This provides no support for the view that HECS deters people from low SES backgrounds because of a generalised aversion to debt. If there is an aversion to incurring a HECS debt it may relate to the nature of that debt in that it is necessarily tied to the purchase of educational services. The issue is with the nature of socio-economic groups attitudes towards higher education.
4.5 The introduction of differential HECS: A natural experiment revealing the overall effects of HECS

The time period over which the data regarding the socio-economic composition of students are consistently available is limited to the 1990s which postdates the rapid expansion of student numbers that occurred in the late 1980s and the introduction of HECS in 1989. It does, however, provide an indication of the stability of the composition of the share of students from low SES backgrounds during a period when student numbers continued to expand and substantial changes were made to the HECS repayments arrangements governing the operations of HECS (see Table 1).

Over the past decade the proportion of commencing 17-24 year old higher education students from postal areas containing the lowest SES population quartile has ranged from 19.4 to 20.3 per cent with no discernible trend. The stability in the proportion of low SES students occurred in an environment where the number of commencing non-overseas students increased by 23 per cent between 1989 and 1998. That is while the total number of students from low SES backgrounds increased over this period implying that additional opportunities were being provided this was no different than for all other students resulting in no change in the socio-economic composition of students.

As can be seen from Table 1 below students from low SES backgrounds are particularly under-represented in HECS Band 3 fields which include medicine and law with only 11–15 per cent of students from low SES backgrounds. They are represented to a greater extent in HECS Band 2 fields (eg. science, business/ economics, etc) and Band 1 fields (eg. education, nursing, arts) at 19–21 per cent. The dominance of students from high socio-economic backgrounds in Band 3 fields of study has been a long term feature of the higher educational system and certainly predates the introduction of HECS in 1989. A 1984 Commonwealth of Education survey found that over three-quarters of veterinary science and law students had fathers who worked in professional or managerial occupations (Marginson 1997, p 146).

A number of studies have analysed the influences on students course choices. Harvey-Beavis and Elsworth (1998) found that field of study choice was primarily influenced by intrinsic interest in the field. This interest was identified using a questionnaire which distinguished activities individuals derived most satisfaction eg. artistic, investigative or social. The report did not present results on the basis of socio-economic background. Later work by James et al (1999) also investigated the influences on field of study choice and found again that interest in the field to be the major factor. The primacy of this influence did not vary between social groups. An interesting issue to pursue is why students from low socio-economic backgrounds appear to have less intrinsic interest in undertaking fields of study in HECS Band 3 ie medicine and law. One possible contributing factor may be that HECS Band 3 courses generally have very high entrance score requirements. Students from low socio-economic backgrounds generally do not perform as well at school as students from high socio-economic backgrounds.

It is not possible to ascertain the effects of the introduction of HECS in 1989 on low SES individuals because of the lack of data prior to this time. The introduction of differential HECS in 1997, however, offers an opportunity of gauging the effect
Does HECS discourage them

of HECS more generally on persons from low SES backgrounds. This change to the HECS funding arrangements increased the HECS by different rates based upon the HECS Band of the field of study. For example, the HECS on Band 1 fields of study increased by approximately 30 per cent, on Band 2 fields by 90 per cent and Band 3 fields by 120 per cent. This change to the funding arrangements provides a natural experiment which can provide an indication of the effects of HECS more generally. Treating the change in HECS Band 1 fields as a numeraire allows comparison of the changes in participation of students from low SES backgrounds in the Band 2 and 3 fields. This provides a measure of the sensitivity of students to increased HECS while effectively controlling for other factors such as labour market conditions and social attitudes which may affect higher education participation. A potential but remote complicating factor with this approach is that institutional admission policies towards students from low SES backgrounds may have substantially and consistently changed in 1997 between fields of study within the three HECS Bands.

The introduction of a higher and differentiated HECS and lowering of the income repayment threshold appear to have had no effect on the shares of students from low SES backgrounds. Changes in the share of students from low SES backgrounds fluctuated between 1996 and 1998 largely within historical ranges. The share of low SES students in HECS Band 1 fields remained essentially unchanged while those in Band 2 decreased more substantially in 1997 but this was partially reversed in 1998 when their share increased. The share of such students in Band 3 increased substantially but this was reversed the following year.

This lack of effect of HECS on choice of field of study is broadly confirmed by two recent attitudinal surveys. The survey of USANET students undertaken by Ramsay et al (1998, Table 6.10) found that HECS no more affected their course or subject choice than for the control group of students. It should be noted that part of the survey was conducted in 1996 prior to the introduction of differential HECS. James et al (1999) conducted a survey of higher education applicants to identify factors which influenced their choice of course and institution. They found HECS to be a very minor influence on field of study choice but one which did vary between socio-economic groups with low socio-economic groups slightly more likely to have indicated that HECS had influenced their choice. It should be noted that the survey addressed field of study choice and not final enrolments by field of study.

In conclusion, there is no compelling evidence that the effects of the cost increases flowing from the introduction of differential HECS to support the proposition that HECS affected the socio-economic composition of students.

### Table 1 Share of commencing students from low SES backgrounds 17–24 year olds

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<tr>
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<td>20.2</td>
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Source: Higher Education Students data base
5. Attitudes and values towards higher education

It is possible to reveal some of the reasons why HECS appears to have had little, if any, effect on the social composition of higher education students. As discussed above financial considerations can reduce educational participation by socially disadvantaged persons who cannot afford the costs of higher education. Other reasons for low participation from low SES students relate to the different attitudes, expectations and support both from family and peers for those undertaking higher education.

The education service that is delivered by higher education institutions is dependent upon the attitudes and values of the customers (students). Parents of low SES students have limited education themselves in general and may be seen as less capable or willing to motivate their sons and daughters to undertake post-secondary education compared with middle class families that are greater users of higher education. This lower level of family support can arise a number of ways including through the lack of older family role models who have undertaken higher education, a depreciation of the value of higher education by the family and lack of appreciation of what practical support is required and can be given to family members undertaking higher education. Also many individuals from a low SES background also belong to other disadvantaged groups such as indigenous Australians, and migrants from particular non-English speaking backgrounds. Other concerns such as geographic distance, language difficulties as well as wider cultural differences may operate to reduce access to higher education by such individuals.

In addition to the influence of family background on the level of participation in higher education other social factors may be at work. Harris (1998) suggests that it is not the family directly that has the most lasting influence on young people but rather their peer group. Young people adapt their behaviour and values from their peers. Young people living in low SES regions tend to take on the culture of their neighbours who are less likely to finish Year 12 and undertake higher education. The more disadvantaged a region the less likely it is that young persons from that region will come into sustained contact with middle class young people and be influenced by their values towards higher education. Whether it is family background or peers that influence attitudes towards higher education participation is not possible to be disentangled using available data which is based on postal areas as both hypotheses will produce observationally equivalent results—simply that low SES areas exhibit low participation rates.

Evidence from Mukherjee (1997) suggests that the social inequalities in higher education reach back into secondary school. Mukherjee found that in 1994 despite improvements in Year 12 retention and completion rates there were still large differences between socio-economic groups. Looking at cross-sectional data comparing completion rates by socio-economic group it is apparent that for the bottom 70 per cent of socio-economic groups the completion rate is consistently around 75 per cent but for the top 20 per cent of groups the rate is between 80 and
95 per cent. Moreover those school programs which lead to higher education, such as 3 unit English and Mathematics, appear to be more likely to be taken by students from high socio-economic backgrounds. This is likely to affect the pattern of the school to higher education transition by different social groups.

Overseas studies also support the view that sociological factors have an important influence on educational participation. Leslie and Brinkman (1987, p195), commenting on US studies examining the factors which affect the levels of higher education enrolment rates, state that ‘sociological variables invariably have turned out to be the most potent; economic variables generally rank about third. In other words, college attendance is more associated with such student traits as social class and parent’s education than with college price.’ The Maritime Provinces Higher Education Commission (1997) in Canada also noted that individual personality characteristics appeared to be driving factors in a person’s decision to undertake post-secondary education. Sociological factors such as parents and peer group also had an influence on the decision to commence further studies.

It is possible to shed light on the contributions of financial and attitudinal factors on higher education participation in the Australian context. This has been undertaken by employing the higher education participation rates for some 2400 postal areas and comparing them with the socio-economic status of those areas. This provides for greater detail of analysis than was possible for that undertaken to identify loan aversion. Appendix C describes the multi-variate approach taken and detailed results. The analysis was undertaken by two broad age groups to identify any substantial differences between two major groups of students—the 17–24 year old age group which largely covers school leavers and the 25–39 year age group which in turn covers approximately 80 per cent of mature age students. It is more difficult to draw conclusions with regard to the older age group as it unclear the relationship between SES and educational participation—persons from low SES backgrounds may be participating in higher education to a greater extent than that of other groups in an attempt to address previous educational deficiencies. They have, nonetheless, been included in this analysis for completeness.

When the influence of financial and attitudinal influences derived from educational/occupational influences were separately examined it appears that attitudinal influences have the strongest effect on the participation of 17–24 year olds. Indeed financial influences were found to have an insignificant effect on educational participation when analysed in company with attitudinal factors. Financial factors were found to have an influence when analysed separately. This may be, however, the consequence of the association of educational and occupational status with income level.

It was found that higher education participation among 17–24 year olds did not increase substantially with increasing socio-economic status of their home postal area, measured by educational and occupational characteristics, until the SES background was at least in the upper 60 per cent of socio-economic groups. After this point it increased at an increasing rate (see Figure 4 below). A similar phenomenon was found for older persons aged 25–39 years. As an aside rural regions tended to show only very slightly lower higher education participation rates than other regions independently of socio-economic effects. This implies that once socio-economic characteristics are accounted for rural areas have broadly similar levels of participation as urban areas. In all the regressions dummies have been included for the State/territory in which a region is located. The differences in
participation between States range up to 4 per cent (excluding the Northern Territory), for 17-24 year olds, even after factors such as the socio-economic characteristics and degree of rurality of States are taken into account. The differences between States’ higher education participation rates for older persons only ranged up to 1 per cent (again excluding the Northern Territory).

The strength of the effect of parental education is confirmed by Long (1999) who employed data taken from the Longitudinal Survey of Australian Youth and found that the educational attainment of parents, usually measured by the mother’s educational attainment, had a positive association with higher education participation of 19 year olds. There appeared to be little consistent association with parental education and Year 12 completion rates but a more definite relationship between parental education and transition to higher education.

Figure 4 Higher Education Participation rates by SES of home postal area

Source: Higher Education Student Database; ABS SEIFA

As noted above socio-economic status as defined by financial factors and measured by the Index of Economic Resources was not found to be related to the level of higher education participation. This finding conflicts somewhat with a recent study by Long (1999) who has found that family wealth has an effect on higher education participation of 19 year olds in the mid-1990s with the wealthiest quartile having significantly higher rates of participation than other quartiles. Interestingly family wealth was not an important factor explaining differences in higher education participation between the other quartiles nor was it a factor explaining any differences in higher education participation prior to the 1990s. Family wealth appears to play a role in explaining differences in both school completion and the transition to higher education with wealthier families having higher school completion and transition rates.
With regard to older persons it was found that while attitudinal factors had a positive impact on higher education participation financial factors had a negative impact. That is, the higher the socio-economic status of an area as defined by financial factors the lower was the higher education participation rate. This may arise because individuals who have high incomes find the additional financial benefit from undertaking higher education limited as well as finding it more costly as they may need to forgo larger incomes to undertake their studies. Another explanation could be that individuals from wealthier backgrounds participated in higher education at a younger age perhaps straight from school and have less need to participate as an older student.
6. Conclusion

A number of previous studies have been discussed in this paper as well as additional data and different methodologies used to shed light on the matter of the effect of HECS on the participation of low SES groups in higher education. Each of the approaches have differing strengths—they seek attitudes towards HECS, estimate the financial effects of HECS and estimate its effects on decisions to attend higher education. Other approaches seek to gain an appreciation of how individuals respond in other areas of their life to financial considerations such as incurring debts in an attempt to gauge how individuals are likely to view a HECS debt. Each of these approaches has weaknesses associated with limited data and methodological concerns which prevent definitive conclusions from being drawn.

Notwithstanding these criticisms some strength in interpretation can be drawn if the various approaches provide findings which are broadly consistent. While students from low SES backgrounds are under-represented in higher education institutions this is a long term concern which has not worsened following the introduction and changes to HECS over the past decade. Survey findings indicate that HECS is not a main reason given by individuals for failing to participate in higher education. The financial returns to undertaking higher education remain high after the introduction and changes to HECS. HECS does not appear to have substantially affected the level of applications or enrolments of students in general although little can be said concerning students from low SES backgrounds. Given HECS is a deferrable contribution towards students’ education it is not surprising that the demand response to the cost increase associated with HECS is muted.

Some have been concerned though that as deferral of the payment of HECS implies acceptance of a debt to be repaid at a later time. Potential students from low SES backgrounds may be debt averse and abandon plans to participate in higher education. Evidence is mixed but does suggest, however, that low SES groups are not particularly debt averse compared to other socio-economic groups. Where concerns regarding debt do arise it would appear that the income contingent nature of HECS repayments addresses those concerns. Finally it appears that a possible reason why HECS appears to have had little, if any, effect on the social composition of the student population is that the primary reason underlying the low participation by low SES groups in higher education relates to values and attitudes towards higher education and not financial considerations.
Appendix A
LandScape™ segment descriptions

A1 Luxurious Living—HIGH SES
Luxurious Living neighbourhoods are populated by the most affluent sectors of the community. They comprise the wealthiest families living in the most prestigious areas within each of the urban centres. Many of these families have teenage children, most of whom attend a private school or college. The parents tend to be mature married professionals working predominantly in the financial sector.

Household and disposable incomes are the highest of all segments with the majority of household incomes averaging far in excess of $100,000. These neighbourhoods tend to have large detached owner occupied properties or expensive rented properties.

A2 Successful Executives—HIGH SES
Successful Executives are families with teenage to adult children who either own or are purchasing a large house. In the majority of families both spouses are employed working mainly in the business and the finance industry sectors. Car ownership is very high, with 66 per cent of households owning two or more vehicles. Coinciding with this, many drive their cars to work.

Annual household income is in the highest quintile ranging well over $100,000. This segment is fairly similar to Luxurious Living in many respects, the main difference being average household income, which is not quite as high.

A3 Affluent Mature Neighbourhoods—HIGH SES
People living in Affluent Mature Neighbourhoods consist mainly of two-parent families who either own or are purchasing a large home. Retired people are also prevalent indicating the stability and age of such neighbourhoods. Education levels are very high with the majority having tertiary level qualifications.

Most people are established in their current employment as managers or are in another professional capacity. This segment could also be described as ‘empty nesters’ as the children have, or are close to completing their tertiary studies and commencing their working careers. The tendency is for these neighbourhoods to comprise traditionally wealthy families who are experiencing a change in life-stage as the children move on leaving the parents in quite a large family house. This
segment also features quite high on the disposable income classification and this should increase as their family support commitments reduce over the next five years.

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**A4  New Wealth Families—HIGH SES**

Educated in the arts and physical sciences, New Wealth Families have primary to secondary school aged children and live in large four bedroom houses. Mortgage levels are high with this segment being located in well-to-do developing outer suburbs. Both parents have obtained a good education and the majority are employed in well paid jobs in a mix of government services and education.

Household incomes appear to be above average to high.

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**A5  High Living Sophisticates—HIGH SES**

These highly mobile young professionals tend to live close to the city centres, where many are employed in business as either managers or professionals. Some are still obtaining tertiary or post graduate qualifications. The majority can be described as singles and couples renting expensive high-rise apartments with this type of housing being a significant characteristic of the segment.

High Living Sophisticates is easily labelled as the predominant ‘yuppie’ and ‘dinks’ cluster. Income levels are comparable to Successful Executives, however this segment is not burdened by the costs of supporting a family. Disposable incomes are generally high (particularly among the younger professionals). This remains the case even after taking the higher rents and costs of living, which this segment brings with it, into account.

This segment also comprises a disproportionate number of older retired people, although this is reducing as the ‘yuppies’ buy up and transform the composition of these lifestyle driven neighbourhoods.

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**A6  Emerging Professionals—HIGH SES**

Emerging Professionals consist of a highly mobile mix of students and young professionals, this mobility possibly being driven by the student element. They tend to reside close to the city centres in rental properties comprising one or two storey flats or terraces. Income levels are quite diverse due to the mix of professionals and students, therefore both high and low income levels are present.

Emerging professionals are very similar to High Living Sophisticates in terms of geographic location, qualifications, age profiles and household composition, however they differ on two fronts—income and housing type. Emerging Professionals tend to live in semi detached/terrace housing and only occasionally in flats/units.
A7 Bohemian Renters—HIGH SES
This segment is made up of a mix of young and retired people. They live in relatively small houses or flats located in attractive inner city fringe areas. Education levels are high and some still attend a tertiary institution. Employment for this group tends to be in the business, finance and recreation industry sectors with household income levels being average to above average.

Rental levels are the highest of the inner city segment, with rental property representing 47 per cent of the type of occupancy; this is nearly twice the nation average. These neighbourhoods are characterised by being one of the most transient of all segments with over 55 per cent having lived elsewhere five years ago.

A8 Developing Suburbs—MEDIUM SES
Developing Suburbs are mainly located on the outskirts of the capital cities. The family structure can be described as ‘maturing’ with two to three children. They have a strong tendency towards purchasing their homes, which generally have three to four bedrooms. The mortgage commitment is above average and is possibly a reflection of the high levels of employment. The occupation for this segment tends to be clerical as well as in the retail and trade sectors.

A9 Young Homebuyers—MEDIUM SES
Young Homebuyers comprise very young families who have recently moved into and are buying their first home. They are employed across a range of industries including finance, manufacturing, retail and government services. Their family composition is skewed towards younger children aged from under one to nine years old. Car ownership is high with the majority having two cars, though this is consistent with other working segments residing in these metropolitan outskirt areas. This segment is the most akin to ‘new housing estate’ type existence or ‘prams and nappies’. Household income levels tend to be average to above average.

A10 Established Neighbourhoods—HIGH SES
This segment represents mature families with children in their twenties. These types of people tend to own large detached houses and have two or more cars. They are also well educated and speak a second language. Employment is high and concentrated around white-collar occupations, with positions being professional or advanced clerical. Similar to Affluent Mature Neighbourhoods this segment seems to be experiencing a lifestage adjustment as their traditional family moves out leaving the parents in an ‘empty nest’ situation.
A11 Comfortable Middle Australia—HIGH SES
Generally located in established, aging suburban areas, Comfortable Middle Australian neighbourhoods tend to be biased towards older families who mostly own their homes and have a slightly above average income. In addition, this segment also comprises younger couples and singles aged between twenty and thirty-nine possibly occupying the smaller flats and semi detached housing available within these areas. Qualifications are above average with a disproportionate number of people highly qualified in arts and sciences. Employment tends to be in the areas of education and government services.

A12 Stable Families—MEDIUM SES
Stable Families have a strong bias towards owning or purchasing their three to four bedroom home. Annual household incomes are moderate to above average and are used to support a teenage family. Geographically Stable Families are generally located in the outer suburban areas of the metropolitan area. Although unemployment is consistent with the national average, a disproportionate number of those with jobs tend to be associated with the retail or construction industry. Education is biased towards basic and vocational skills. These areas may be defined as traditional stable working class.

A13 Urban Lifestyle—MEDIUM SES
Urban Lifestyle comprises older communities with both couples and singles, who tend to own or are in the process of buying their home in an out-of-town location. These people left school at an early age and many have vocational skills gathered from an engineering or construction background. Household income levels are average to low and suggest that a large proportion of this segment is living off a fixed income as a result of taking early retirement. Geographically Urban Lifestyle has a tendency towards semi-holiday coastal locations.

A14 Urban Renewal—NOT CLASSIFIED
Urban Renewal neighbourhoods consist of a mix of old and young singles with a diverse ethnic background. They live in one to two storey flats and semi-detached housing. These areas are most likely to be going through a transition period in terms of the inner city refurbishment of the traditionally poor working class suburbs. Therefore, a combination of high unemployment and pockets of well-to-do educated professionals is noticeable.

Geographically Urban Renewal can be located close to the city centres in areas containing the original manufacturing industry of Australia. As this industry moves into cheaper suburban locations and continues its slow decline we expect the profile of these areas to change over the next five years. The Urban Renewal segment should provide interesting results in terms of property values over this period as the younger professionals move in to renovate.
A15 Affordable High Rise—LOW SES

Affordable High Rise immediately suggests these areas are characterised by a high penetration of low rental accommodation in the form of multi-storey flats and semi-detached housing. A disproportionate number are employed within the service, administration and recreation industries. Unemployment is quite high, however an above average percentage is still furthering their education.

Household income is heavily biased towards the average and below average levels, which goes part way to explaining the housing type and rental levels. Age profiles are interesting with twenty to twenty-nine featuring highly and sixty through to eighty plus. The older component appear to be attracted to these areas for the cost of living which is possibly driven by their reliance on fixed incomes.

A16 Low Income Transit—LOW SES

Low Income Transit comprises the highest proportion of mobile young singles, couples and one-parent families living in government supported accommodation, which tend to be flats with three or more storeys. This segment is typified by a large percentage of recent migrants, with 63 per cent born overseas and 86 per cent of these speaking another language. Despite a reasonably qualified population these areas experience high unemployment levels at over one and a half times the national average. This could be partly explained by the high proportion of new Australians who live in these neighbourhoods after migrating. It also explains the high mobility rate suggesting that upon obtaining full time employment there is a tendency to relocate.

A17 Student Communes—NOT CLASSIFIED

Student Communes represent those areas that lie predominantly in and around student campuses. They are mainly populated by young people who have never been married, are attending tertiary institutions and have some part-time work.

Accommodation often takes the form of a rented one to two bedroom unit or semi-detached houses. Interestingly, these areas are also inhabited by a large number of recent arrivals from overseas.

A18 Settled Migrants—LOW SES

Settled Migrants consist mainly of two-parent families with a Southeast European background. They live in large detached houses that are being purchased or are already owned. With a high percentage having lived at the same address for more than five years, Settled Migrants seem to have established themselves in these neighbourhoods, possibly pioneering the original housing development.

Income is moderate to above average and gained from employment in the manufacturing, communication, retail or wholesale industry. The family
composition has a tendency towards teenage and young adult children with a high percentage of houses containing five or more people.

A19 Post War Multicultural—LOW SES
Post War Multicultural as the name suggests, comprises a very large percentage of the original European settlers who were encouraged to migrate to Australia. The significant demographic attributes are that they are stable in terms of mobility and contain older mature or semi-retired families. If children are present within the family unit they tend towards the young adult age bands (twenty to twenty-nine).

Possibly due to the large percentage of people at retirement age and an above average percentage not in the labour force (high percentage of widows), household incomes appear to be average. However, home ownership is above average and with the lack of dependent children disposable income levels are average to slightly above average.

A20 High Density Blue Collar—LOW SES
High Density Blue Collar neighbourhoods are mostly made up of large families with young children. In addition the family unit may also be supporting an older dependent grandparent, which explains the significant number of households with six or more people and a slightly above average number of sixty to seventy-nine year olds.

These areas have a very strong bias towards migrants arriving in Australia from the Middle East and Asia. Qualifications are quite low. Unemployment levels are above average as is the percentage of people not in the labour force. Tendency towards the manufacturing industry is characteristic for those in employment.

This partly explains the geographical location of this segment being close to the industrial regions of the major manufacturing cities Melbourne and Sydney. Household incomes are low to average, however this is greatly impacted by those on fixed government supported incomes.

A21 Independent Young Families—MEDIUM SES
Independent Young Families are buying medium sized houses within developing fringe urban regions. Mortgage repayment levels are average coinciding with location in terms of distance form the CBD. They have basic or vocational skills and those that can find employment tend to work in the manufacturing or construction industry.

Incomes are average and the family composition seems to have a strong bias towards five to six or more people per household. These areas are distinctly characterised by the extremely high percentage of young developing families and the lack of middle aged to older people (fifty years plus). Although young and living
Does HECS discourage them in developing areas, they are not the original pioneers of these regions as they have been developing over the last two censuses (approximately eight years).

A22 Ethnically Diverse—LOW SES
Ethnically Diverse consists of large multicultural communities, many within these communities speaking little English. There are disproportionate numbers of young one-parent families with below average income levels. Education levels are low and unemployment is extremely high when compared to the national average. Accommodation costs in these areas are towards the lower end of the market with families living in a mixture of houses and flats.

There is a significant bias towards rental properties, which is driven by their lack of purchasing capacity. Housing composition is heavily skewed towards six or more people per house. When profiling these areas using the disposable income indicator it is noticed that a large percentage of this segment is bordering on negative disposable income.

A23 Subsidised Suburbia—LOW SES
Subsidised Suburbia neighbourhoods are dominated by young, one parent families living in government subsidised dwellings, which consist mainly of detached and semi-detached housing.

Education levels are very low as a result of many having left school at an early age. Unemployment levels are nearly double the national average. These areas tend to be located on the metropolitan outskirts. When calculating disposable incomes of this segment a strong bias similar to Ethnically Diverse towards the lower and negative end of the scales is noticed.

A24 Independent Retired—NOT CLASSIFIED
Older single people (sixty through to eight plus) still able to care for themselves are the Independent Retired. Paying a minimal amount of rent they tend to live in flats and semi detached housing. Living together with the retired are also a disproportionate number of younger people (twenty to twenty-nine), who consist of mainly one parent families and who appear to be attracted to these areas due to the apparent affordability of the accommodation.

Geographically these areas are found some distance from the city centre and in regional business centres. Household incomes are quite low as a result of the high percentage of people reliant on fixed incomes.
A25 Pensioner Villas and Villages—NOT CLASSIFIED
A high proportion of the population of Pensioner Villas and Villages is over sixty-five, leading to a very high degree of retired people within these areas. In addition, there is also significant representation of the very elderly, ie. eighty to over ninety year olds.

Retirement villages and other specialised accommodation for the very elderly are characteristic for this segment, most of which are occupied by only one or two people. This is the oldest profiled segment within the Landscape classification.

Interestingly incomes are split between the very low end, as a result of the percentage of fixed incomes or pensions and the very high end. The very high incomes can possibly be explained by a small percentage of well-to-do professionals that also reside close to the retirement villages.

A26 Alone and Mature—NOT CLASSIFIED
The Alone and Mature are concentrated in traditional family holiday areas, mainly coastal. Having very modest income levels and occupying predominantly small dwellings, this segment relies on low cost and sometimes subsidised housing.

These neighbourhoods comprise people who are most likely to have lost a partner and who have no dependents. They often move into specialised accommodation for the aged and have a strong sense of community and social interaction.

A27 Mining Communities—HIGH SES
The most predominant feature of the Mining Communities is employment within the mining industry or its support services and the high mobility rate. The geographically locations tend to be remote. Young families with high household incomes living in rent free accommodation are prevalent in these areas, though some houses are being purchased.

Qualifications are predominantly in the engineering sector. The high incomes and remote locations could indicate specific behaviours, such as a reliance on mail order shopping.

A28 Middle Income Families—MIDDLE SES
Middle Income Families can be distinguished by their strong representation in the middle bands of household income. They reside in or close to regional cities and employment tends to be in the mining, utilities, education, retailing and government administration sectors.

These families have at least two young children and are likely to be in the process of purchasing their home. This segment could be described as typical Australian middle class family that happens to live in regional growth areas.
A29 Aussie Battlers—LOW SES

Aussie Battlers are families with children under the age of twenty years living in three to four bedroom houses in regional towns and cities. The majority of this segment have average or below average household income levels.

Employment is mainly in the utilities, mining, retailing and education sectors and education levels tend towards skilled vocational and basic vocational levels. An important characteristic of this segment is that they are most likely to have left school at fifteen or sixteen years of age.

A30 Agriculture Enterprise—HIGH SES

Agriculture Enterprise are families with dependent children living on the outskirts of cities and large towns. This segment derives its label from being predominantly small agriculture holdings, such as turf farms, specialised breeding studs and market gardens and would also share their locales with hobby farmers.

Above average to high household incomes are characteristic for these neighbourhoods allowing them to live in large houses which they own or are purchasing. Member of this segment might sometimes be referred to as the ‘landed gentry’ or ‘country squires’.

A31 New Outlying Families—LOW SES RURAL

Located in new suburbs around regional centres this segment comprises young families with two or often more children under the age of twenty. There is a preference for buying their own home (which tends to be a three to four bedroom house) rather than renting.

Working in agriculture, construction and government services, New Outlying Families have average or just below average household incomes. Interestingly these people tend to have left school at fifteen, taking raising a family as a serious responsibility.

A32 Sparse Regions—LOW SES RURAL

Sparse Regions describe areas with a very low-level density of population that can be considered remote but some are located adjacent to metropolitan centres and regional cities.

Accommodation is either owned or rent free in form of a one bedroom house or mobile home. This may reflect a high incidence of rural workers and station hands. Household income is low and education levels are minimal. People living in these regions are either managing a small agriculture business, family farm or are labourers in the agriculture or construction sectors.
A33 Traditional Agriculture—LOW SES RURAL
Traditional Agriculture encompasses vast farming areas throughout rural Australia. Households in this segment are very much what the typical metropolitan dweller considers as ‘the bush’.

Families that reside in these areas are predominantly farmers working as either a proprietor or manager. This segment also takes in typical station hand employees. Household incomes are low, but the remoteness and lifestyle are the key characteristics.

A34 Rural Families—LOW SES RURAL
This segment represents families with young children who live in a house that they own or is being subsidised by their employer. Household income is below average or low and unemployment is a significant factor in this segment. Rural Families are made up of very early school leavers whose future would be closely linked to the strength and growth of the primary production sector, ie. the need for unskilled labourers.

A35 Satellite Communities—LOW SES RURAL
These neighbourhoods can be described as small independent communities in non-metropolitan areas that are scattered throughout Australia. The term satellite refers to the location being some distance from, but reliant upon larger population centres.

This segment comprises people across all ages who are either married or single and live in detached houses. Above average unemployment and the high percentage of people not in the labour force may be the cause for the low household income levels.

A36 Upcountry Tenements—MIDDLE SES
Upcountry Tenements is a segment with a very high level of mobility. This can be explained by the high number of people employed by the hospitality industry where movements from employer to employer are common. Education, cultural and recreational services are other sectors where people in these areas find employment.

An above average proportion of this segment is fifteen to twenty nine years old and lives in rented flats and semi-detached houses.

A37 Provincial Communities—NOT CLASSIFIED
People in Provincial Communities are mainly retired, although there are some young families. The houses and flats they live in tend to be rented at a very low cost.
or are fully owned. Employment is mainly in agriculture, utilities and support services backed by basic and vocational skills.

The household incomes range from below average to average with a high proportion of people not being in the labour force.

**A38 Regional Labourers—LOW SES RURAL**

Regional Labourers has a large proportion of young one parent families and singles on a low income. Unemployment is high and qualifications are low, many left school at an early age. People with jobs work mostly as labourers in the utilities, mining and manufacturing industry sectors. They are renting a three bedroom detached or semi-detached house at minimal cost.

**A39 Mobile Dweller—LOW SES**

This segment consists mainly of people who live in caravan parks. Most of the population are singles and couples at retirement age. Mobile Dwellers tend to work part-time in a variety of industries including mining, construction and hospitality. Their annual household incomes are below the national average.

**A40 Countryside Pensioners—NOT CLASSIFIED**

As the name suggests, Countryside Pensioners are people at retirement age living in specialised homes for the aged in scenic coastal areas. There are also some younger people who are employed in the health and community services industries to care for the aged. Due to the fixed income of a large proportion of these people household incomes are below average.

**A41 Provincial Havens—NOT CLASSIFIED**

Provincial Havens comprise people who are approaching or living in retirement. The majority of this segment is married, although some are separated or widowed. Employment is usually part time in support industries such as retail and hospitality with an above average proportion either not in the labour force or unemployed.
Appendix B
Regional SES and debt aversion

Personal Loans

Table B1.1  Application rate (number of applications per 100 persons)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>19.539*</td>
<td>29.523*</td>
</tr>
<tr>
<td>SES</td>
<td>-0.001</td>
<td>-0.001*</td>
</tr>
<tr>
<td>Rural</td>
<td>-</td>
<td>-5.583*</td>
</tr>
<tr>
<td>Migrants</td>
<td>-</td>
<td>-4.552*</td>
</tr>
</tbody>
</table>

Table B1.2  Diagnostic tests—application rate

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted $R^2$</td>
<td>0.021</td>
<td>0.195</td>
</tr>
<tr>
<td>F Statistic</td>
<td>1.719</td>
<td>3.669*</td>
</tr>
</tbody>
</table>

N=33
Note: *,** denotes significance at the 5 and 10 per cent levels respectively.

Table B2.1  Loan amount applied for as a proportion of disposable income

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-18.127</td>
<td>44.301</td>
<td>14.337</td>
</tr>
<tr>
<td>SES</td>
<td>0.006**</td>
<td>0.002</td>
<td>0.003</td>
</tr>
<tr>
<td>Rural</td>
<td>37.197*</td>
<td>-</td>
<td>27.649*</td>
</tr>
<tr>
<td>Migrant</td>
<td>25.591**</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table B2.2  Diagnostic tests—Loan amount

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted $R^2$</td>
<td>0.13</td>
<td>-0.02</td>
<td>0.085</td>
</tr>
<tr>
<td>F Statistic</td>
<td>2.637**</td>
<td>0.325</td>
<td>2.530**</td>
</tr>
</tbody>
</table>

N=33
Note: *,** denotes significance at the 5 and 10 per cent levels respectively.
### Mortgages

#### Table B3.1 Application rate (number of applications per 100 persons)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.738</td>
<td>7.667*</td>
<td>5.838**</td>
</tr>
<tr>
<td>SES</td>
<td>0.0004*</td>
<td>6.78E-05</td>
<td>0.0002</td>
</tr>
<tr>
<td>Rural</td>
<td>-</td>
<td>-3.393*</td>
<td>-2.852*</td>
</tr>
<tr>
<td>Migrant</td>
<td>-</td>
<td>-1.449</td>
<td></td>
</tr>
</tbody>
</table>

#### Table B3.2 Diagnostic tests—application rate

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted $R^2$</td>
<td>0.093</td>
<td>0.357</td>
<td>0.335</td>
</tr>
<tr>
<td>F Statistic</td>
<td>4.391*</td>
<td>7.108*</td>
<td>9.309*</td>
</tr>
</tbody>
</table>

N = 33

Note: *, ** denotes significance at the 5 and 10 per cent levels respectively.

#### Table B4.1 Mortgage amount applied for as a proportion of disposable income

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>67.620*</td>
<td>43.105**</td>
<td>35.811**</td>
</tr>
<tr>
<td>SES</td>
<td>0.002</td>
<td>0.004**</td>
<td>0.004*</td>
</tr>
<tr>
<td>Rural</td>
<td>-</td>
<td>-4.822</td>
<td></td>
</tr>
<tr>
<td>Migrant</td>
<td>-</td>
<td>34.413*</td>
<td>36.806*</td>
</tr>
</tbody>
</table>

#### Table B4.2 Diagnostic tests—mortgage amount

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted $R^2$</td>
<td>8.737E-05</td>
<td>0.286</td>
<td>0.303</td>
</tr>
<tr>
<td>F Statistic</td>
<td>4.391</td>
<td>7.108*</td>
<td>8.167*</td>
</tr>
</tbody>
</table>

N = 33

Note: *, ** denotes significance at the 5 and 10 per cent levels respectively.
Appendix C
Regional higher education participation

Table C1.1  Results from estimation of youth participation (15–24 year olds)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-5.837*</td>
<td>-14.481*</td>
<td>-14.576*</td>
</tr>
<tr>
<td>Index(E&amp;O)</td>
<td>0.020*</td>
<td>0.030*</td>
<td>0.029*</td>
</tr>
<tr>
<td>Index(E&amp;O)2</td>
<td>-0.081*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Index(E&amp;O)3</td>
<td>-0.151*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Index(E&amp;O)4</td>
<td>-0.132*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Index(E&amp;O)7</td>
<td>0.051*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Index(E&amp;O)8</td>
<td>0.073*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Index(E&amp;O)9</td>
<td>0.164*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Index(E&amp;O)10</td>
<td>0.117*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rural</td>
<td>-0.014*</td>
<td>-0.029*</td>
<td>-0.029*</td>
</tr>
<tr>
<td>NT</td>
<td>-14.280*</td>
<td>-14.481*</td>
<td>-14.631*</td>
</tr>
<tr>
<td>TAS</td>
<td>-1.803*</td>
<td>-2.441*</td>
<td>-2.428*</td>
</tr>
<tr>
<td>QLD</td>
<td>-1.640*</td>
<td>-1.994*</td>
<td>-1.999*</td>
</tr>
<tr>
<td>SA</td>
<td>-0.688**</td>
<td>0.091</td>
<td>0.105</td>
</tr>
<tr>
<td>WA</td>
<td>-2.442*</td>
<td>-2.905*</td>
<td>-2.922*</td>
</tr>
<tr>
<td>NSW</td>
<td>-3.717*</td>
<td>-3.997*</td>
<td>-3.999*</td>
</tr>
<tr>
<td>Index(Econ)</td>
<td>-</td>
<td>-</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Table C1.2  Diagnostic tests

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted $R^2$</td>
<td>0.884</td>
<td>0.858</td>
<td>0.858</td>
</tr>
<tr>
<td>F Statistic</td>
<td>1201.618*</td>
<td>1789.456*</td>
<td>1590.040*</td>
</tr>
</tbody>
</table>

N = 2370

Note: *,** denotes significance at the 5 and 10 per cent levels respectively.
Table C2.1  Results from estimation of adult participation (25–39 year olds)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-17.866*</td>
<td>-19.368*</td>
<td>-11.576*</td>
</tr>
<tr>
<td>Index(E&amp;O)</td>
<td>0.022*</td>
<td>0.023*</td>
<td>0.031*</td>
</tr>
<tr>
<td>Index(E&amp;O)^2</td>
<td>-0.011**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Index(E&amp;O)^3</td>
<td>-0.066*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Index(E&amp;O)^4</td>
<td>-0.094*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Index(E&amp;O)^6</td>
<td>-0.043*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Index(E&amp;O)^7</td>
<td>0.023*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Index(E&amp;O)^10</td>
<td>0.010*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rural</td>
<td>-0.016*</td>
<td>-0.016*</td>
<td>-0.018*</td>
</tr>
<tr>
<td>NT</td>
<td>-4.226*</td>
<td>-4.165*</td>
<td>-4.905*</td>
</tr>
<tr>
<td>TAS</td>
<td>0.694*</td>
<td>0.803*</td>
<td>0.432*</td>
</tr>
<tr>
<td>QLD</td>
<td>0.949*</td>
<td>0.870*</td>
<td>0.846*</td>
</tr>
<tr>
<td>SA</td>
<td>0.433*</td>
<td>0.486*</td>
<td>0.305*</td>
</tr>
<tr>
<td>WA</td>
<td>0.387*</td>
<td>0.368*</td>
<td>0.818*</td>
</tr>
<tr>
<td>NSW</td>
<td>-0.347*</td>
<td>-0.339*</td>
<td>-0.297*</td>
</tr>
<tr>
<td>Index(Econ)</td>
<td>-</td>
<td>-</td>
<td>-0.015*</td>
</tr>
</tbody>
</table>

Table C2.2  Diagnostic tests

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted R^2</td>
<td>0.855</td>
<td>0.850</td>
<td>0.884</td>
</tr>
<tr>
<td>F Statistic</td>
<td>998.547*</td>
<td>1683.441*</td>
<td>2017.210*</td>
</tr>
</tbody>
</table>

Note  N = 2370
*,** denotes significance at the 5 and 10 per cent levels respectively.

Where,
Index (E&O) is the ABS SEIFA-Index of Education and Occupation.
Index (E&O)^i is the ABS SEIFA-Index of Education and Occupation for the ith decile of socio-economic status.
Rural is a dummy variable signifying rural areas.
NT, etc are the state/territory dummy variables.
Index (Econ) is the ABS SEIFA-Index of Economic Resources.
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Martin L. M., (1994), 'Equity and General Performance Indicators in Higher Education— Volume 1 Equity indicators', Evaluations and Investigations Program, DEETYA.


