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The Costs of Unpaid Higher Education Contribution Scheme Debts of Graduates Working Abroad

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Abstract

The Higher Education Contribution Scheme (HECS) is an income-contingent loan designed to collect tuition from Australian university students. The debt is collected on the basis of recorded incomes and, as a consequence, debtors living overseas will not repay. Using various data sources and assumptions, multiple scenarios are considered in order to estimate the extent of uncollected overseas debt. A conservative estimate of the amount of foregone HECS revenue for the 1989–2011 graduate cohorts working overseas is over $400 million, but it is shown that, under other plausible assumptions, the foregone revenue may be close to double this amount.

1. Introduction and Motivation

The Higher Education Contribution Scheme (HECS)[1] was introduced in Australia in 1989 as a way of facilitating the re-introduction of charges for Australian higher education undergraduate students. Important features of HECS are: loan repayments are made depending on debtors' future incomes; and the Australian Tax Office (ATO) is responsible for collection. Since the ATO has no international jurisdiction, this second issue implies that an unintended consequence of the scheme's design is that loans are unable to be collected from debtors who leave Australia.

This issue could matter significantly if a large number of graduates leave Australia permanently with unpaid debts and are subsequently never part of Australian income tax arrangements. As well, because HECS debts (once incurred) have a real interest rate of zero, there will be implicit interest rate subsidies associated with debtors leaving Australia temporarily, such as for a working-abroad holiday.

Occasionally, the issue is raised as a matter of public concern,[2] but little rigorous attention has been given to it and there is no information available to ascertain the extent to which foregone HECS repayments are adversely affecting government revenues. This article is motivated by the value to public policy discourse of finding out the extent to which this matters.

Not long after beginning this project in December 2011, it became clear why little research attention has been directed to this question. A major factor is that the data available to estimate the foregone revenue from HECS debtors going overseas is sparse,

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even by the standards that apply to most social science investigation. As a consequence, it has been necessary to impose a number of specific and varied modelling assumptions on the information that is available to allow estimates to be made of the figure. We have endeavoured to be conservative in the application of the modelling so that the reported figures can be considered to be understatements of the true foregone HECS revenue collection as a result of debtors leaving Australia.

With this caveat in place, we find that, for cohorts graduating from 1989 to 2011, a conservative estimate of the amount of foregone revenue as a result of HECS debtors going overseas is over $400 million. There is considerable variability in the results of the scenarios that are presented in this article, predominantly due to uncertainty in the rates of graduate long-term and permanent emigration; it is shown that the foregone revenue may be as high as $800 million under certain plausible assumptions. It is also shown that there is additional lost HECS revenue of $20–30 million from each new graduating cohort. Some suggestions are offered as to how the issue might be addressed.

2. Costing Lost HECS Repayments of Graduates Moving Overseas

We estimate the cost of lost HECS repayments by comparing the repayments that would have been paid by graduates who spent time working abroad with the repayments that would have instead been paid had these same graduates worked exclusively in Australia. The difference between these two values provides an estimate of lost HECS revenue due to existing policy.

Estimating the repayments requires a range of data sources and assumptions. Among other factors, it is necessary to estimate the proportion of deferred HECS debtors who have worked or will work overseas. This proportion can then be applied to each cohort of deferred HECS debtor graduates from 1989 to the present and specifically to those who have exceeded, or are expected to exceed, the minimum repayment threshold. We apply estimates of average deferred HECS debt for each cohort, and by applying income assumptions and HECS scheme rules, we generate estimates of the present value of repayments. This process requires access to multiple data sources and a number of simplifying assumptions, which are described and explained in Sections 3–5. The process of costing is explained in more detail, with examples and results given, in Section 6.

3. What Proportion of HECS Debtors Work Overseas?

Our interest is in just those HECS debtors who work overseas for extended durations, rather than those who pursue further education overseas. It is reasonable to assume that those who move overseas to study would have pursued further study in Australia had they not moved abroad and thus would have not generated sufficient income during this period to exceed the minimum HECS repayment threshold. Thus, for these graduates, moving overseas would not lead to foregone HECS repayments.[3] In contrast, we assume that those who work overseas would otherwise have worked in Australia and thus the act of moving and working overseas leads to foregone debt repayments.

To estimate how many HECS debtors move and work overseas, data are needed on travel and emigration, specifically with respect to when graduates leave Australia and how long they remain abroad. The primary data source used was the 2010 Beyond Graduation Survey (BGS), conceived by Graduate Careers Australia (GCA). This is a longitudinal survey of approximately 10,000 graduates who completed a course of study at an Australian higher education institution in 2006, with the survey recording their activities in 2007, 2008, 2009 and 2010.[4] While GCA has released a summary of the results of the survey (GCA 2011a), the data were examined to extract further information that was necessary for this article (GCA 2011b).

It was found that there were 3,343 graduates with deferred HECS debts in the BGS who were employed at some time between 2007 and

2010 and who provided responses about their activities in each of these years. Of these, 77, 162, 197 and 179 were working overseas in 2007, 2008, 2009 and 2010, respectively. To explore this further, the number of transitions to and from periods of overseas work are presented in Table 1.

Table 1 illustrates that approximately 10 per cent of 2006 graduates with deferred HECS debts had worked abroad within approximately 3.5 years of graduation. Close to 5 per cent had been working overseas for at least two different yearly reference periods, indicating extended duration of time overseas. Based on these values, the percentage of 2006 deferred HECS graduates who were working overseas for one reference date is 5.7; for two reference dates, it is 2.3; for three reference dates, it is 1.7; and for four reference dates, it is 0.8.

Because the data are limited to four periods (2007–2010 inclusive), the end duration for those still abroad is unknown (the data is right-censored). Thus, we would expect that some of those who have already worked abroad may continue to do so—this is particularly likely for those who were working overseas in 2010. As well, some unknown proportion of the 2,995 graduates who had, to that point in time, not worked overseas will do so at some future period. Consequently, assumptions have to be imposed on the data to reflect these shortcomings of the restricted survey length.

The small sample size of the BGS implies potentially considerable statistical variation. Furthermore, there is the possibility that graduates abroad may be less likely to be contactable and respond to the survey than graduates in Australia; that is, response bias may exist. A consequence is that the true proportion that works overseas may be higher than reported in Table 1.

In order to improve the credibility of our assumptions for the duration of overseas migration, emigration data were obtained from the Department of Immigration and Citizenship (DIAC) to supplement the BGS analysis. Rather than using passenger intentions,[5] we analysed actual travel behaviour through the TCD.

Table 1 2010 Beyond Graduation Survey: Activities of 2006 Deferred HECS Graduates from 2007 to 2010

Time overseas	*2007*	*2008*	*2009*	*2010*	*Number of cases*	*Proportion (%)*
Four periods overseas	OS[a]	OS	OS	OS	26	0.8
Three periods overseas	–[b]	OS	OS	OS	43	1.3
	OS	–	OS	OS	2	0.1
	OS	OS	–	OS	4	0.1
	OS	OS	OS	–	7	0.2
Two periods overseas	–	–	OS	OS	39	1.2
	–	OS	–	OS	4	0.1
	–	OS	OS	–	21	0.6
	OS	–	–	OS	2	0.1
	OS	–	OS	–	1	0.0
	OS	OS	–	–	10	0.3
One period overseas	–	–	–	OS	59	1.8
	–	–	OS	–	58	1.7
	–	OS	–	–	47	1.4
	OS	–	–	–	25	0.7
Zero period overseas	–	–	–	–	2,995[c]	89.6
Total					3,343[d]	100.0

Notes: (a) OS denotes working overseas.
(b) '–' denotes not working overseas.
(c) The figure of 2,995 is the number who worked at some period between 2007 and 2010, but who did not work overseas during this period.
(d) The total of 3,343 is the number of deferred Higher Education Contribution Scheme graduates who provided responses for 2007, 2008, 2009 and 2010 and who worked at some stage, either in Australia or abroad, during this period.

Source: Derived by the authors from the 2010 Beyond Graduation Survey (GCA 2011b).

Unit record movement data were obtained for Australian citizens between January 2004 and December 2009. We extracted those citizens who departed Australia and were considered as net overseas migrant (NOM) departures, according to DIAC definitions.[6] Because data were available only up to the last quarter of 2009, like the BGS data, the TCD suffers from right-censoring. However, there are 6 years rather than 3 years of data and the size of the dataset is substantial (the TCD consists of over 34 million movement records). Despite the size and duration of the dataset, there are limitations beyond right-censoring: the data are for all Australian citizens and not just university graduates; and we do not have information on whether the individuals studied, holidayed or were employed during their time overseas. As a consequence, rather than using the TCD to estimate the proportion of graduates who move overseas, we used it to aid in estimating the *duration spent overseas for those who moved abroad*. Specifically, we analysed the data to obtain the proportion of NOM departures of different age groups (ages 20–22, 20–25 and 20–30 years) that remained abroad for different durations. By using these data to inform our choices in this article, we are assuming that the distribution of durations spent overseas from the TCD is consistent with that experienced by HECS debtors. Furthermore, we are implicitly assuming that those who are NOM departures are not liable for HECS payments until they return to Australia as NOM arrivals. Results are given in Table 2.

Table 2 Travellers' Characteristics Database: Results from Analysis, Proportion of 2004 Net Overseas Migrant Departures Who Remained Overseas for Different Durations[a] (%)

Duration overseas (years)	*Age (years)*		
	20–30	*20–25*	*20–22*
1	16	18	21
2	27	30	32
3	11	11	10
4	7	7	6
5	5	4	3
6	1	1	1
Still abroad	33	29	27
Total	100	100	100

Note: (a) If the analysis is performed for net overseas migrant departures in later years (for example, 2005 or 2006), the proportions remaining overseas for different durations are similar to those presented in Table 2. Analysis is presented for 2004 departures only, as this allows up to 6 years of post-departure movement data.

Source: Derived by the authors from The Travellers' Characteristics Database of DIAC (2012).

There is a clear reduction in the proportion remaining abroad as one moves down Table 2 to 6 years' duration. Extrapolating from this rate of decline, it is not unreasonable to infer that the majority of the proportion that remains overseas at the end of the period of analysis will continue to do so for a substantial amount of time. Indeed, many of these may remain abroad permanently. This is supported by results of a 2002 survey of expatriates conducted by Hugo, Rudd and Harris (2003). They found that approximately 17 per cent of expatriates did not intend to return to Australia in the future, with a further 30 per cent being undecided. Furthermore, they found that, as age (and duration abroad) increased, the proportion intending to not return rose substantially.

The 2010 BGS and TCD data were used to come up with a number of plausible scenarios for transition rates to working overseas. As the analysis of the BGS data is for the direct population of interest—deferred HECS debtors—despite the survey limitations, the proportions obtained in Table 1 form the basis of all the scenarios; specifically, it is assumed that 10 per cent of graduates spend 1 or more years working overseas. Scenario 1 in Table 3 is based on the BGS data,[7] while the proportions overseas for different durations under Scenario 3 are based on the 20–25 years age group of the TCD. Scenario 2 is an average of these two scenarios. In the absence of additional information, the scenarios in Table 3 are considered to represent a reasonable range for the actual proportions of graduates working overseas. Calculating how many graduates have foregone HECS repayment due to overseas work requires multiplying these proportions by the actual number of graduates with deferred HECS debts in each graduating year.

Table 3 Scenarios for Transitions to Overseas Work (%)

Duration overseas	*Scenario 1*	*Scenario 2*	*Scenario 3*
Not overseas	90.0	90.0	90.0
1 year	4.6	3.2	1.8
2 years	2.5	2.8	3.0
3 years	1.0	1.1	1.1
4 years	0.4	0.5	0.7
5 years	0.2	0.3	0.4
6 years	0.1	0.1	0.1
Permanently	1.2	2.0	2.9
Total	100.0	100.0	100.0

4. How Many Deferred HECS Graduates from Each Cohort Exceed the Minimum HECS Repayment Threshold?

For our cost estimates, we assume that it is only graduates who are employed full-time who will exceed the minimum HECS repayment threshold and repay their debt. As reported in the 2010 BGS, not only do current full-time median graduate salaries exceed the minimum threshold, but median salary growth for graduates is considerable: between 2007 and 2010, median salary for full-time 2006 graduates had increased from $45,000 to $60,800 (an increase of 35.1 per cent over the 3 years following completion of their studies, compared to Consumer Price Index (CPI) of 9.3 per cent over the same period) (GCA 2011a). On this basis, it is not unreasonable to expect that the vast majority of graduates employed full-time will exceed the minimum threshold.

According to the report on the 2010 BGS by GCA (2011a), 74 per cent of 2006 graduates were in full-time employment, 6 per cent were available for full-time employment by 2010, 9 per cent were in full-time study and 11 per cent were not seeking full-time employment or were unavailable for work. For our calculations, we assume that 74 per cent of total deferred HECS graduates are employed full-time and will continue to be employed for a sufficient duration to pay off their debt (in the event that they remain in Australia); that is, we exclude 26 per cent of graduates from the calculations. This is a conservative assumption as it is reasonable to expect that a large proportion of the 9 per cent who are engaged in further full-time study will ultimately engage in full-time work and repay their debt. Furthermore, we might expect that some of the 6 per cent seeking full-time work will be successful and subsequently repay their debt.

Estimates of the total number of deferred HECS graduates were derived from the AGS.[8] The process of deriving the number of graduates is described in Appendix 1 and results are given in Table A1. Estimates of the number of full-time workers are given in Table A2 in Appendix 2.

5. What Is the Average Deferred HECS Debt for Graduates from Each Cohort?

To estimate the average deferred HECS debt for graduates from each cohort, we multiply the charge rates from 1989 to 2011 (see Tables A3 and A4 in Appendix 3) by degree length. For comparison, both 3- and 4-year degrees are used in the calculation of the debt. The method of calculation for average annual debt for graduates subject to differential HECS involved additional steps, which are given in Appendix 3 (the charge rates of the corresponding differential HECS bands are given in Table A4). The resulting estimates of average annual debt for a student commencing in each year are given in Table A5. This information was used to estimate the average charge for a 3- and 4-year degree for students completing their degree from 1989 to 2011. Results are given in Table A6.

6. How Much HECS Debt Has Not Been Repaid Due to Graduates Moving Overseas?

As outlined in Section 2, costing the lost HECS repayments involves undertaking a number of calculations. First, we calculate the present value of HECS repayments for the number of graduates (estimated in Section 4 and given in Table A2), using debt levels (as estimated in Section 5 and given in Table A6) and *assuming debtors had remained in Australia*. Next, we calculate the present value of repayments for the same graduates, but *assuming that the graduates spent time abroad* (using the proportions proposed in Section 3 and given in Table 3). The difference between these present values provides an estimate of the amount of HECS repayments lost due to graduates working overseas.

Further assumptions are required for these calculations, which include wage growth (assumed to be 4 per cent), CPI (2.5 per cent), loan indexation (2.5 per cent), the discount rate used when calculating the present value of the repayments (5.5 per cent, being the approximate average 10-year government bond rate), the starting graduate age (22 years) and the time working in Australia prior to the graduates moving abroad (both 1 and 2 years are considered as assumptions). In addition, HECS income thresholds and rates are used in the calculations (ATO 2012) and it is assumed that income thresholds are indexed at wage growth.

The method is illustrated for a graduate completing a 4-year degree in 2008, entering the workforce for the first time in 2009 and moving overseas for work in 2011 after working in Australia for 2 years. The assumed debt, as taken from Table A6, is $21,225. The results of the present value repayment calculations for a graduate whose income would have been at the 6 per cent threshold rate ($59,944 in 2009 and indexed with wage growth thereafter) are given in Table 4.[9] The 'present value difference' gives the lost revenue for government (in 2011 dollars) in the event that the graduate works overseas for different durations, as given in the first column of Table 4. In all cases, the results are expressed in 2011 dollars. The method used is equivalent to calculating the foregone funds when the graduate moves overseas for work and then investing these funds at 5.5 per cent (the assumed government yield) up to 2011. The accumulated value of these foregone funds at 2011 (taking into account any future repayments) is the estimated cost to the government of not seeking repayments from debtors who have moved overseas.

The information in Table 4 can be combined with the proportions proposed in Section 3 to derive an estimate for the expected present value of repayments (see Table 5); that is, we first estimate the possible range of values of lost revenue and then multiply these values by their probabilities of occurrence, thereby producing an expected value for the foregone amount. While under these assumptions, a single graduate will have lost revenue of nil, $408, $814 or another amount up to $14,372 (as given in Table 4), by applying the probabilities of occurrence (the transition probabilities from Table 3), we come up with an estimate of the average foregone amount. Therefore, the lost revenue to government is likely to be somewhere between $236 and $483 *on average* for every graduate, based on the specific assumptions used. It is important to note that the variability in results across

Table 4 Example of Foregone HECS Repayments for a Hypothetical Graduate[a]

Duration spent overseas	*Nominal repayments ($)*	*Present value repayments ($[b])*	*Present value difference (at 5.5% per annum) ($[b])*
Not overseas	22,835	22,325	–
1 year	23,222	21,916	408
2 years	23,628	21,511	814
3 years	24,054	21,108	1,217
4 years	24,463	20,742	1,583
5 years	24,881	20,386	1,939
10 years	27,127	18,752	3,572
20 years	32,502	16,107	6,218
Permanently	7,340	7,953	14,372

Notes: (a) It is assumed that the graduate completed a 4-year degree in 2008, earned income of $59,944 in 2009 (indexed to wage growth thereafter) and moved overseas for work in 2011.
(b) In 2011 dollars.

Table 5 Example of Expected Foregone HECS Repayment for a Hypothetical Graduate

Duration spent overseas	*Scenario 1 (%)*	*Expected present value difference ($[a])*	*Scenario 2 (%)*	*Expected present value difference ($[a])*	*Scenario 3 (%)*	*Expected present value difference ($[a])*
Not overseas	90.0	–	90.0	–	90.0	–
1 year	4.6	19	3.2	13	1.8	7
2 years	2.5	20	2.8	23	3.0	24
3 years	1.0	12	1.1	13	1.1	13
4 years	0.4	6	0.5	8	0.7	11
5 years	0.2	4	0.3	6	0.4	8
6 years	0.1	2	0.1	2	0.1	2
Permanently	1.2	172	2.0	287	2.9	417
Total		236		353		483

Note: (a) In 2011 dollars.

the three scenarios is due predominantly to the different assumptions about permanent emigration.

For those falling under the minimum repayment threshold, the difference between those remaining in Australia and those going overseas will be zero, since in both cases, no repayment will be made.

To estimate the overall cost, we can multiply the figures for the difference (from Table 5) by the number of 2008 deferred HECS graduates who are expected to work full-time (see Table A2).

We now calculate the total lost revenue across all graduating cohorts since 1989 under the methodology and assumptions outlined above. This is carried out for 3- and 4-year degrees and under the assumption that graduates work in Australia for 1 or 2 years full-time following graduation prior to moving overseas. The results are presented in Table 6, where the three scenarios refer to the different transition probabilities, as given in Table 3, and are just given assuming that income would have been at the 6 per cent income threshold.

The results for Scenario 2, for a 4-year degree and 2 years working in Australia before moving overseas, are plotted in Figure 1 for each year of graduation. The results are plotted separately for three different income assumptions. Cumulative results across all cohorts are given in Figure 2.

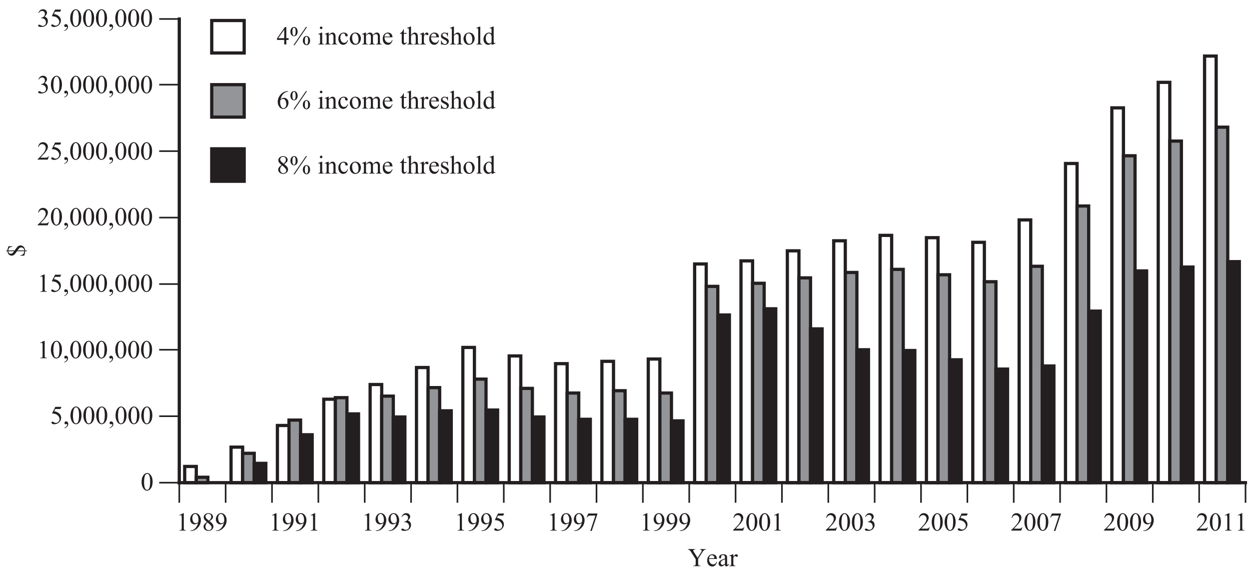
It is clear from the figures that the cost of ignoring debtors who move overseas for the early years of HECS is small, as both the amount of debt and the estimated number of full-time workers is relatively low. As HECS charges increase in the 1990s, the cost for each cohort increases. A substantial jump occurs for year 2000 graduates, since graduates commencing prior to 1997 (that is, who completed their degree before 2000) are charged substantially lower HECS fess than the differential fees faced by those commencing in or after 1997 (who completed their degree in 2000 or

Table 6 Estimates of Total Lost HECS Revenue for All Graduating Cohorts, 1989–2011[a]

Degree length (years)	*Number of years working in Australia before moving overseas*	*Scenario 1 ($m)*	*Scenario 2 ($m)*	*Scenario 3 ($m)*
3	2	210	310	430
3	1	290	440	600
4	2	300	440	610
4	1	380	570	780

Note: (a) In all scenarios, it is assumed that income would have been at the level corresponding with the 6 per cent income threshold (that is, at $48,622 for 2004 and $65,564 for 2011). Income in years prior to 2004 was approximated by discounting at actual average weekly earnings.

Figure 1 Year-by-Year Value of Foregone HECS Revenue: All Graduating Cohorts, 1989–2011



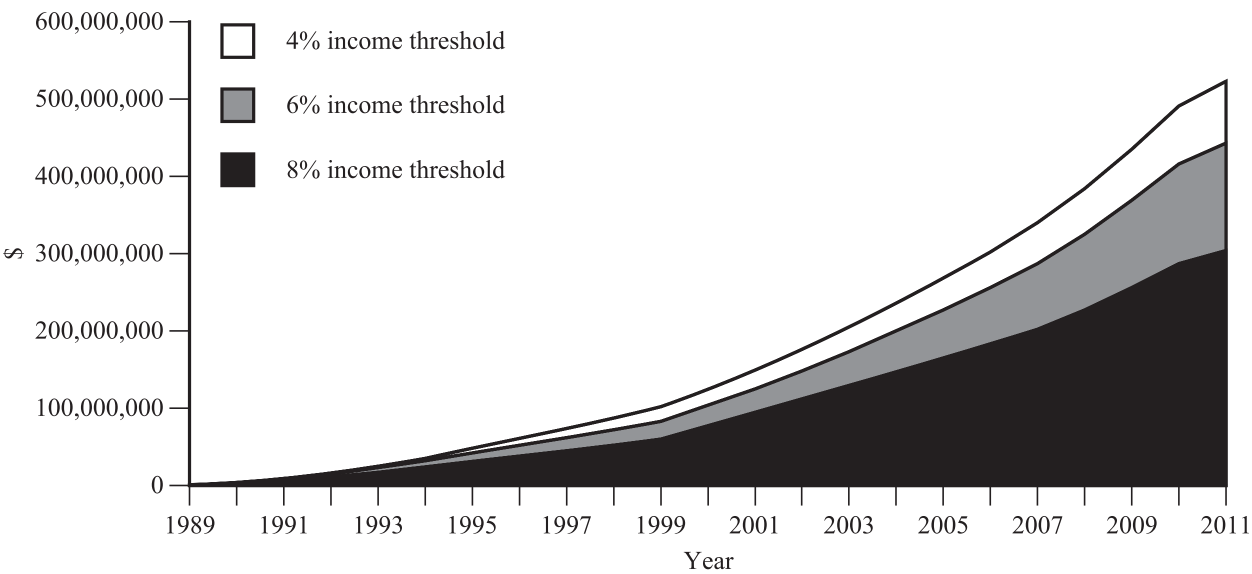
Notes: This assumes 4-year degree, 2 years of work in Australia prior to moving overseas and probabilities of transition overseas following Scenario 2. Dollar amounts are expressed in nominal terms at the date of graduation for each cohort.

thereafter). The costs for each cohort of graduates rises in 2008, as this corresponds with students commencing a 4-year degree in 2005, the first year of partial fee deregulation, resulting in substantial increases in differential HECS amounts.

The results in Table 6 suggest that an estimate of over $400 million (with a plausible upper estimate of nearly $800 million) is credible for the amount of debt foregone to date and every additional cohort of future graduates will result in this cost increasing by an amount in the order of $20–30 million.

We note that our estimates are conservative for a number of reasons:

Figure 2 The Cumulative Value of Foregone HECS Revenue: All Graduating Cohorts, 1989–2011



Notes: This assumes 4-year degree, 2 years of work in Australia prior to moving overseas and probabilities of transition overseas following Scenario 2. The foregone amount for each graduate cohort is accumulated at the assumed government yield of 5.5 per cent per annum.

(i) Postgraduates with deferred HECS debt have not been included.

(ii) It is plausible that the true proportion of HECS debtors who work overseas is greater than reported in Table 1 due to the possibility of response bias.

(iii) The number of full-time graduates used in the calculations is conservative for reasons given in Section 4.

(iv) Ex-students who had accrued HECS debts but who did not complete their studies and did not graduate have not been included in the cost estimates.

(v) Importantly, FEE-HELP[10] recipients have not been included, yet total FEE-HELP liabilities are substantial. For example, in 2009, there was a $759 million liability for 55,536 domestic FEE-HELP recipients, and since 2009, the number of FEE-HELP students has grown markedly. Furthermore, recently announced increases to VET FEE-HELP will add to the costs.

7. How Could the Debt of Future HECS Debtors Be Recovered?

The Australian Government is not the only institution that carries the cost of unpaid student loans from debtors travelling to or moving overseas, nor is this an issue confined to income-contingent loan systems such as HECS. Indeed, periods of non-repayment and defaults are a characteristic of all student loans including the bank-financed systems of the United States and Canada. However, HECS seems to be the only income-contingent loan policy which does not include any regulation designed to minimise losses for taxpayers from graduates going overseas.

The issue has been a particularly significant concern for New Zealand student loan policymakers, with different approaches having been adopted to address the issue since the introduction of the income-contingent loan policy in 1992. This attention is apparently warranted, given the strong evidence of the high costs to New Zealand taxpayers from debtors moving overseas. The following data[11] illustrate the extent of the problem for that country:

(i) In 2011, around 90 per cent of all debt with current non-repayments in excess of 5 years was attributable to overseas-based borrowers.

(ii) In 2011, overseas-based debtors made up 14 per cent of all borrowers but were 58 per cent of all borrowers with overdue payments.

(iii) The median repayment period for the 2008 student cohort is projected to be 5.5 and 12 years for borrowers who do not go overseas and borrowers who are expected to be abroad, respectively.

Barr (2001) considers in detail possible means of dealing with these costs for all countries with income-contingent loans, beginning with what he describes as a ‘minimalist’ approach. This basic step involves a government converting income-contingent loan debt into mortgage-type debt for borrowers who go overseas. This policy is a recognition that it would be extremely unlikely that other countries’ tax authorities would agree to adopt an income-contingent collection mechanism for immigrants, which is realistic particularly when it is the case that only a handful of countries have any form of income-contingent debt collection. This means that overseas-based debtors are obliged to repay part of their debt on the basis of time rather than income and this is the approach adopted for the English, Swedish and New Zealand income-contingent loans.

There are many different ways of helping to ensure that overseas-based debtors are repaying. For example, the New Zealand government has set annual repayments to be roughly 10 per cent of a borrower’s total debt and has now also made it a requirement that borrowers leaving the country leave contact details with a designated relative to allow the authorities to keep in touch with debtors. As well, since 2006, New Zealand student loans have a zero nominal rate of interest for those remaining in the country, but a nominal rate of interest of 6.4 per cent per annum for those going overseas.[12]

Barr (2001) goes on to suggest more radical ways of attempting to recover unpaid income-contingent loan debts from those leaving the country. One possibility would be for a government to come to agreements with other countries in the use of their internal revenue services to collect the debts with the use of the same income-contingent parameters that are in operation in the country of origin. But, this seems unlikely to be successful in a broadly based way, given that only Australia, England, New Zealand, Hungary and South Africa currently have income tax-based student loan collection systems, although many other countries seem likely to move in this direction over time.[13]

Ideally, and accepted by Barr (2001) as being far in the future, would be the establishment of an international agency with the capacity to distribute and collect loans on an income-contingent basis in all countries. In the meantime, the fact that the Australian Government has not enacted any policy step to address the costs of unpaid HECS debts from those going overseas is both a curiosity and a policy indictment.

We have thought through the various options for debt recovery, as outlined above, and consider there to be a workable and fairly straightforward way to at least partially address the issue. This would involve the conversion of HECS debts to time-contingent (mortgage-type) loans in the period in which debtors live overseas. The suggestion is to require (by law) that those with HECS debts planning on leaving Australia for a minimum period of (say) 6 months should commit to make payment while overseas of $2,000/year, which is around the minimum amount required of HECS debtors with incomes above the first income threshold.

It is important that the payment arrangements are seen to be the obligation of the debtor in order to minimise the administrative costs of the government. Thus, the requirement would be for the debtor to make arrangements for the payment to be made to the ATO, perhaps on a 6 monthly basis. Upon return to Australia, the usual income-contingent arrangements would resume. Possible solutions to the issue are worth considering, given that the costs reported in this article illustrate that the problem is both non-trivial and becoming increasingly significant.

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Appendix 1: Estimating the Number of Deferred HECS Graduates

We extracted the number of domestic undergraduate graduates with deferred HECS debts from the AGS surveys (GCA 2008, 2009, 2010, 2011c). Results are given in Table A1. The 'Total' column values in Table A1 are estimated by dividing the sample numbers by 61 per cent, being the approximate response rate of the survey, according to GCA.

Table A1 Estimates of Domestic Undergraduate Graduates with HECS Debts

Year after graduation	*Sample deferred HECS debtors*	*Total estimated deferred HECS debtors*
2010	60,443	99,087
2009	57,014	93,466
2008	55,440	90,885
2007	50,832	83,331

Source: Derived by the authors from the Australian Graduate Surveys of Graduate Careers Australia.

Appendix 2: Estimating the Number of HECS Debtors Engaged in Full-Time Work

While we can estimate the number of full-time workers from each cohort of graduates for 2006–2010 using the assumption of approximately 74 per cent full-time employment (see Section 4), we need additional assumptions for the earlier graduate cohorts back to 1989.

This is achieved by expressing the estimated number of full-time workers for the known cohorts (from AGS surveys) as a proportion of the average number of HECS debtors in the 4 years preceding graduation. For example, the estimated number of full-time workers that will emerge from the 2006 cohort of graduating students is 61,998.[14] Expressed as a proportion of the average number of equivalent full-time undergraduate deferred HECS debtors between 2003 and 2006, this comes to 20 per cent. Under the assumption that this proportion is consistent for earlier cohorts, this was applied to estimate the number of full-time workers for cohorts from 1989 to 2005.

The numbers of deferred HECS debtors per annum for 1999–2010 were taken from higher education statistical tables provided by DEEWR (2000–2011). Prior to these dates, figures are not available and the numbers were estimated. For years prior to 1997, estimates were obtained by dividing the deferred HECS liabilities (sourced from DEEWR 2009) by the average annual debt for students commencing in each year. Estimates of deferred HECS debtors for 1997 and 1998 were obtained by linear interpolation from the 1996 and 1999 figures. Estimates for the number of full-time workers for 2010 and 2011 were derived by applying the average annual growth rate between 2007 and 2009.

Table A2 Estimates of Full-Time Workers from Cohorts of Deferred HECS Debtors

Year after graduation	*Estimated number of full-time workers*
1990	45,484
1991	47,880
1992	50,177
1993	51,643
1994	53,942
1995	55,414
1996	55,530
1997	56,182
1998	57,485
1999	58,725
2000	60,507
2001	61,470
2002	62,566
2003	63,795
2004	64,511
2005	64,682
2006	63,422
2007	61,998
2008	67,619
2009	69,538
2010	73,721
2011	76,984
2012	80,392

Source: Derived by the authors.

Appendix 3: Estimating the Average Deferred HECS Debt

For students commencing prior to 1997, the average annual debt can be directly obtained from the HECS per annum charge rates. Students commencing after 1996 are subject to differential fee charges and transitional arrangements and therefore calculating an average annual debt requires certain assumptions. For these cohorts, annual debt was calculated as follows:

(i) The average annual debt for a student in 2002, 2003, 2004, 2008 and 2009 was estimated by dividing the corresponding deferred HECS liability by the corresponding number of deferred HECS debtors.

(ii) Due to transitional arrangements following the introduction of differential HECS in 1996 and further increases in 2005 due to fee deregulation, approach (i) could not be taken for the years 1997–2001, nor for 2005–2007. Average annual debt for each year from 1997 to 2001 was estimated by expressing the 2002–2004 average annual debt as a proportion of the average of the three differential charge bands for 2002–2004 and then applying this proportion to the average of the three charge bands for each year from 1997 to 2001. This was repeated for the 2005–2007 years by using the average proportion from the 2008 and 2009 years.

Table A3 HECS Charge Rates: 1989–1996

Year	*Per annum charge ($)*
1989	1,800
1990	1,882
1991	1,993
1992	2,250
1993	2,328
1994	2,355
1995	2,409
1996	2,442

Source: Jackson (2003).

Table A4 HECS Charge Rates[a]: 1997–2011 ($ per annum)

	Students commencing after 1996			*Students commencing prior to 1997*	*Students commencing prior to 2005 (who are not pre-1997 students)*		
Year	*Group 1*	*Group 2*	*Group 3*		*Group 1*	*Group 2*	*Group 3*
1997	3,300	4,700	5,500	2,478			
1998	3,356	4,779	5,593	2,520			
1999	3,409	4,855	5,682	2,560			
2000	3,463	4,932	5,772	2,600			
2001	3,521	5,015	5,870	2,644			
2002	3,598	5,125	5,999	2,702			
2003	3,680	5,242	6,136	2,764			
2004	3,768	5,367	6,283				
2005	4,616	6,575	7,696		3,843	5,474	6,409
2006	4,899	6,979	8,170		3,920	5,583	6,535
2007	4,996	7,118	8,333		3,998	5,694	6,665
2008	5,095	7,260	8,499		4,077	5,807	6,798
2009	5,201	7,412	8,677		5,201	7,412	8,677
2010	5,310	7,567	8,859		5,310	7,567	8,859
2011	5,442	7,756	9,080		5,442	7,756	9,080

Note: (a) See Department of Industry, Innovation, Science, Research and Tertiary Education (2012b) for a detailed description of HECS charge rates. Fees for students who commenced in 2005 were fixed at the 2005 levels for the duration of the degree. From 2005, the rates are maximum legislated amounts.

Sources: *Higher Education Support Act 2003* (Cwlth); Jackson (2003); Department of Industry, Innovation, Science, Research and Tertiary Education (2012a).

Table A5 Estimated Average Annual HECS Debt

Year of student commencement	*Average annual debt ($)*
1989	1,800
1990	1,882
1991	1,993
1992	2,250
1993	2,328
1994	2,355
1995	2,409
1996	2,442
1997	4,036
1998	4,104
1999	4,169
2000	4,235
2001	4,237
2002	4,385
2003	4,511
2004	4,617
2005	5,306
2006	5,632
2007	5,744
2008	5,989
2009	5,848

Endnotes

1. Following the deregulation of university fees in Australia in 2005, post-2005 debts became known as 'HECS-HELP' debts. HECS-Higher Education Loan Programme (HELP) follows the same principles as HECS. For the sake of brevity, when we refer to HECS in this article, we are referring to both the HECS and HECS-HELP loan schemes.

2. For example, one of the authors of this article has raised it several times in the context of parliamentary enquiries into Australian higher education policy issues.

3. This is a conservative assumption because it is not unreasonable to assume that those who study overseas develop increased opportunities for overseas work and thus the rate of longer term emigration for these graduates may be higher than for graduates without a history of overseas study.

4. The BGS involved surveys of 31 Australian higher education institutions. Graduates who completed study in 2006 and who responded to the 2007 Australian Graduate Survey (AGS), also conducted by GCA, were asked to complete the BGS online in 2010, which reported on their activities on 30 April in 2008, 2009 and 2010. This was merged with their responses to the 2007 AGS. The sample of responses to the BGS is representative of the 2008 graduate population in terms of age, sex and broad field of education (GCA 2011a).

Table A6 Estimated Average 3-Year Degree and 4-Year Degree HECS Debt[a]

Year of commencement of 3-year degree	*Year of commencement of 4-year degree*	*Last year of degree*	*Average 3-year degree debt ($)*	*Average 4-year degree debt ($)*
1987	1986	1989	1,800	1,800
1988	1987	1990	3,682	3,682
1989	1988	1991	5,675	5,675
1990	1989	1992	6,125	7,925
1991	1990	1993	6,571	8,453
1992	1991	1994	6,933	8,926
1993	1992	1995	7,092	9,342
1994	1993	1996	7,206	9,534
1995	1994	1997	7,329	9,684
1996	1995	1998	7,440	9,849
1997	1996	1999	12,309	10,000
1998	1997	2000	12,509	16,544
1999	1998	2001	12,642	16,746
2000	1999	2002	12,857	17,026
2001	2000	2003	13,132	17,368
2002	2001	2004	13,513	17,750
2003	2002	2005	13,546	17,931
2004	2003	2006	13,541	18,052
2005	2004	2007	15,918	18,137
2006	2005	2008	17,366	21,225
2007	2006	2009	17,582	23,214
2008	2007	2010	17,807	23,552
2009	2008	2011	17,937	23,927

Note: (a) Since 1989 was the first year of HECS charges, accrued debts for 3-year degree graduates in 1989 and 1990 and 4-year degree graduates in 1989, 1990 and 1991 are relatively low compared to the following years. Charge rates for pre-1997 commencers who study post-1997, for 2005 commencers and for pre-2005 commencers who study post-2005 differ due to policy changes coinciding with these dates. These charge rates are incorporated when estimating the average debts for 3-year degrees and 4-year degrees above. The 2010 and 2011 average debts were approximated by inflating the 2009 averages at 2.1 per cent to 2010 and the 2010 values at 2.5 per cent to 2011 (corresponding to the charge band inflation between 2009 and 2010 and 2010 and 2011, respectively).

5. While the number of Australian citizens who have been recorded as permanent or long-term resident departures is available (DIAC 2011), these data are obtained from outgoing passenger cards and there is a serious limitation with using passenger intention data for our purposes. For example, using The Travellers' Characteristics Database (TCD) data, Birrell and Healy (2010) show that the majority of persons intending to leave Australia for the long term or permanently return within 12 months.

6. Individuals who spend 12 months or more overseas over a 16 month period are classified as 'NOM departures'. NOM departures are classified as 'visitors' in Australia, rather than residents, if they subsequently return to Australia for only short- or medium-term durations (less than 365 days). If they return to Australia and remain in Australia for 12 months or more over a 16-month period, then they are considered as a 'NOM arrival' and return to 'resident' status under DIAC definitions.

7. Scenario 1 is generated from Table 1 by generally assuming that half of those overseas at the end of 2010 (the end of the period of observation) will continue to remain abroad in 2011, with the balance returning to Australia. For those with three consecutive periods overseas ending in 2010, it is assumed that half will remain abroad for between 3 and 6 years, with the balance remaining permanently overseas. The majority of those who had spent four consecutive periods overseas are also assumed to remain permanently abroad. For example, the value of 4.6 for '1 year overseas' under Scenario 1 is derived by taking half of 1.8 and adding this to 1.7, 1.4 and 0.7. This was rounded down to 4.6 to allow for our assumption that 90 per cent of working graduates (taken by rounding up the empirical result of 89.6 per cent from Table 1) do not spend time abroad for work.

8. The AGS is a survey of Australian graduates, conceived by GCA.

9. Under HECS, repayments are contingent on income and the proportion of income that is repaid varies discretely in 0.5 per cent intervals, from 4 per cent to 8 per cent depending on one's income. For example, in 2011, debtors with income under $47,196 were not required to repay, while those with income between $47,196 and $52,573

repaid at 4 per cent; those between $52,573 and $57,948 repaid at 4.5 per cent, etc.

10. Students who are unsuccessful in securing a Commonwealth-supported university place may be able to obtain a fee-paying place. These students may be able to obtain an income-contingent loan that follows the same principles as HECS, called FEE-HELP, to cover all or part of their fees. For vocational education and training (VET), VET FEE-HELP provides a similar loan for tuition fees.

11. All the data are taken from the most recent New Zealand government report on student loans, available from <http://www.educationcounts.govt.nz/publications/series/student_loan_scheme_annual_reports/114630>.

12. Presumably, the differential is designed to discourage debtors from leaving the country, although it seems very unlikely that this would have significant behavioural effects. It has become clear with respect to HECS, for example, that parameter changes to the scheme have invariably had no discernible consequence for student education or labour market choices (Chapman 2006).

13. For example, there are currently active debates concerning the adoption of income-contingent student loan systems in South Korea, Thailand, Malaysia, Colombia, Ireland and Scotland.

14. By 'graduating students', we mean those undergraduate students who have graduated.

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