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An Analysis of FEE-HELP in the Vocational Education and Training Sector

Bruce Chapman[†], Mark Rodrigues[#] and Chris Ryan[‡]*
[†] *Crawford School of Economics and Government, The Australian National University*
[#] *Australia and New Zealand Banking Group Limited*
[‡] *Social Policy Evaluation, Analysis and Research Centre, Research School of Social Sciences, The Australian National University*

Abstract

The public vocational education and training (VET) system is one of the few areas in Australia's tertiary education system where students are required to pay upfront fees without access to loan assistance. These arrangements may lead to sub-optimal educational outcomes to the extent that prospective students reject a VET education on the basis of short-term financial constraints. In this paper we analyse some of the important issues related to the adoption of FEE-HELP (a 2005 federal government financial instrument based on the Higher Education Contribution Scheme (HECS)). It is argued that income contingent loans of this kind are associated with the advantages of both default-protection and consumption smoothing. Using data from the first three waves of the Household Income and Labour Dynamics in Australia (HILDA) survey, we examine various empirical issues associated with the adoption of FEE-HELP in VET, including the extent of private salary returns to VET qualifications. As well, we explore issues related to the public subsidies inherent in the adoption of FEE-HELP in VET, and illustrate the time periods involved in loan repayments for various assumptions concerning the size of the charge and the future income of VET graduates. Administrative issues are considered, as are the implications for the Commonwealth government with respect to potential subsidies associated with the design parameters. In the 2007–08 Federal Budget, the former government announced a small extension of the FEE-HELP system into Australian VET, a reform consistent with improved tertiary funding arrangements.

1. Introduction

The 2007–08 Federal Budget announced the extension of the FEE-HELP income contingent loan scheme to parts of the vocational education and training (VET) system. This is the first time that an Australian government has promoted the use of a Higher Education Contribution Scheme (HECS)-type instrument in the sector and it should be considered a watershed in the history of tertiary financing. At the time of writing, the details of the new arrangement are not clear, but it seemed at the time of the Budget to be available only for courses which are to be given accreditation in higher education. What now follows is a broad assessment of the issues arising from a more widespread application of FEE-HELP loans to the sector as a whole.

Even given the Budget announcement, Australia's public VET system still sits in what is arguably a strange place among the nation's post-compulsory education providers. Since the introduction of FEE-HELP in 2005 and its subsequent extension to an increasing number of eligible private higher education providers and, apart from the possibilities opened up in the Budget, the public VET system is still now one of a few areas of tertiary education

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in which many students are required to pay upfront fees without access to any form of loan assistance.

The economic case for an income contingent loan scheme for the VET sector is familiar from the case for higher education, where such loans have been available since 1989. This takes the form of Commonwealth supported university courses under the guise of the Higher Education Contribution Scheme (now known as HECS-HELP) and since 2005, via FEE-HELP for non-Commonwealth funded courses at universities and eligible private higher education providers. Some might argue that the distinction in financing arrangements between VET and higher education seems somewhat arbitrary given the breadth of courses eligible for FEE-HELP. The central issue is that upfront fees, without the provision of an income contingent loan, sit uneasily with economic theory.

In this paper we evaluate VET in terms of returns to human capital investments and assess the implications for this investment of introducing a HECS-style income contingent loan in the form of FEE-HELP. To anticipate our results, we find significant private returns to the acquisition of higher level VET qualifications. This suggests that there is a potential to have contributions from students through HECS-type arrangements. Further, introducing FEE-HELP into the VET sector would be administratively straightforward given that the infrastructure is largely already in place.

The paper proceeds as follows. The next section provides a broad overview of current course fees in Australia's public VET system and summarises patterns of student participation as background for the analysis that follows. Section 3 establishes the theoretical case for income contingent loans and reviews Australia's experience with HECS. Section 4 introduces the concept of the internal rate of return to estimate the benefits of VET education, and Section 5 analyses the impact of introducing an income contingent loan into the VET sector. In Section 6 we consider how an income contingent loan might be extended to the VET sector in practical terms, and Section 7 concludes.

2. Changes in VET Fees and the Incidence of Concessions and Exemptions

With increased emphasis on the economic goals and benefits of tertiary education have come increases in tuition fees charged by TAFE institutes. In 2003 the maximum TAFE fees for Diploma programs funded by governments ranged from $500 in Victoria to $1200 in South Australia (Watson 2003). In 2005 the maximum fees for government funded programs ranged from $900 in Tasmania to $1224 in NSW. Restrictions on places funded by the government and the high cost of qualified teachers, facilities, equipment or materials in some areas have led several institutes to offer 'fee for service' or full fee paying programs. Many of these are in the 'new economy' areas where growth is fastest but the capacity to expand is lowest. Thus Brisbane's Southbank Institute offers its Diploma of Multimedia for full fees (full rate $6060, concession rate $5362) because of the very high equipment and teaching costs of the program. Charges for specific courses in other jurisdictions also run into thousands of dollars per annum.

There are no data on the extent of full fee paying programs offered by TAFE institutes, but State officials believe they are growing (Watson 2003). Student fees and charges were $197.7 million or 4.3 per cent of all Australian TAFE revenue in 2003 (NCVER 2004). All States and Territories offer fee concessions or exemptions to members of particular demographic groups. Summarising, fee concessions and exemptions are offered to three main groups: Aboriginal and Torres Strait Islanders (ATSI), recipients of AUSTUDY and the Youth Allowance (student AUSTUDY), and recipients of Commonwealth income support (pensioners). Some states exempt all members of these groups from TAFE tuition fees, while others charge a proportion of the standard fee. These arrangements are summarised in Watson (2003).

Patterns of participation by students in VET in Australia are summarised in Table 1. Data from the Household Income and Labour Dynamics in Australia (HILDA) survey, used in the regression analysis described in Section 4,

Table 1 Characteristics of Those Currently Studying for VET Qualifications

		Diplomas	*Cert III/IV*	*Cert I/II*
1	Modal age	19	20	16
		%	%	%
2	Proportion of students who are male	46.6	50.4	50.6
3	Proportion of students aged 24 years or less who are male	51.8	60.6	64.9
4	Proportion of students aged 24 years or less	29.3	40.7	40.9
5	Proportion of students without a prior post-school qualification aged 24 years or less	44.4	52.3	55.5
6	Proportion of students without Year 12 and without a prior post-school qualification	13.1	28.9	39.7
7	Proportion of students without a prior post-school qualification without Year 12	30.9	51.7	68.1
8	Proportion of students attending full-time	37.7	24.4	25.1
9	Proportion of students without a prior post-school qualification attending full-time	46.9	29.4	36.1
10	Proportion employed full-time	46.1	60.4	47.8
11	Proportion employed full-time of those without a prior post-school qualification	34.6	55.6	38.2
12	Proportion employed full-time of those aged 24 years or less	26.6	67.3	46.3
13	Proportion employed part-time	31.9	19.6	23.5
14	Proportion employed part-time of those without a prior post-school qualification	38.3	21.2	29.2
15	Proportion employed part-time of those aged 24 years or less	46.4	17.3	28.7

Source: Estimated from respondents to Wave 2 of HILDA.

are presented in Table 1 to provide a picture of those who undertake VET qualifications and the manner in which they undertake their studies. It does this for three groups of VET qualifications: Diplomas, Certificates levels III/IV, which encompass apprenticeships and traineeships, and Certificates levels I/II combined.

Key features of the VET system are captured in the data. First, while gender shares of students broadly match the population (row 2), young students tend to be male, especially Certificate level courses (row 3). Second, while VET study is most commonly undertaken when people are young, students are drawn from across most of the age range of the population—the most common age of students is 20 or younger (row 1), yet students under 25 years account for less than half the student body (row 4). Third, Year 12 is typically a prerequisite for Diplomas, but not for other VET qualifications. Consequently, students in Certificates I/II courses have lower levels of prior education than students in other courses (row 6). Among students without prior post-school qualifications, students studying for Certificates tend not to have completed Year 12 (row 7). In contrast, most students undertaking Diplomas have completed Year 12 or a previous post-school qualification. Fourth, students typically undertake VET qualifications on a part-time basis (row 8) and many have full-time jobs (row 10). Among those that do not work full-time, about half work part-time. Full-time employment rates are lower among younger students and those without prior post-school qualifications (rows 11 and 12).

3. Upfront Fees for VET and the Benefits of an Income Contingent Loan Approach

3.1 The Failure of Capital Markets

The first economic problem associated with charging upfront fees for VET is that for those

who cannot afford to pay, there is only an ineffective capital market available from which to borrow. The concern of a bank lending for human capital investments is that, unlike many other purchases from a prospective debtor, there is no saleable collateral in the event of default—such as would be the case for the housing capital market—and there is no slavery market in which to sell the human capital being developed.

The other problem for banks lending to students relates to collection costs in the event of default, an issue which assumes significant importance given the absence of collateral. Barr (2001) and Chapman (2006) stress the importance of this issue given the existence of significant uncertainties associated with investments in human capital. The essential point is that educational investments are risky, with the main areas of uncertainty being as follows (Barr 2001; Palacios 2004):

(i) Enrolling students do not know fully their capacities for (and perhaps even true interest in) the education discipline of their choice. This means they cannot be sure that they will graduate. In Australia, around 25 per cent of commencing higher education students do not complete their qualification.

(ii) Even given that completion is expected, students will not be aware of their likely relative success in the area of study. This will depend not just on their own abilities, but also on the skills of others competing for jobs in the area.

(iii) There is uncertainty concerning the future value of the investment. For example, the labour market—including the labour market for graduates in specific skill areas—is undergoing constant change. What looked like a good investment at the beginning might turn out to be a poor choice when the process is finished.

(iv) Many prospective students, particularly those from disadvantaged backgrounds, may not have much information concerning graduate incomes, due in part to a lack of contact with graduates.

These uncertainties are associated with important risks for both borrowers and lenders. If the future incomes of students turn out to be lower than expected, the individual is unable to sell part of the investment to refinance a different educational path, for example. For a prospective lender, a bank, the risk is compounded by the reality that in the event of a student borrower defaulting on the loan obligation, there is no available collateral to be sold, a fact traceable in part to the illegality of slavery. And even if it was possible for a third party to own and sell human capital, its future value might turn out to be quite low taking into account the above-noted uncertainties associated with education investments.

The governments of many countries address these problems by acting as a guarantor for student loans, and by paying the interest for the period before graduation. There are several difficulties with this approach, summarised in Chapman (2006).

The central point about access is that the high cost of participating in VET (both through direct living costs and foregone income), combined with a lack of family and capital market sources of finance, potentially creates a significant barrier for many students which is necessarily exacerbated through the imposition of upfront fees. However, schemes such as HECS, and other feasible income contingent repayment arrangements, are likely to considerably diminish these problems because they reduce the importance of the financial situation of the prospective student's family.

3.2 Income Contingent Repayment and Default Protection

Given the financing problem recognised above for VET, some policy commentators might be tempted to suggest the traditional solution of a loans system made available through the private banks with a government guarantee. However, making repayments conditional on future income has a special advantage over other typical debt repayment schemes, a point now explored.

One advantage of an income contingent repayment approach is that it avoids the basic problem of the usual type of loan offered by banks, known as a 'mortgage-style' loan. This type of loan arrangement requires repayments to be made over a specified period of time, for example, the term of a mortgage. Usually no weight is given to the consequences of low income because debt obligations have to be met within a given period of time.

The essential difference between income contingent and mortgage types of loans is that the income contingent variety serves to protect prospective students from the costs of the exigencies associated with the returns to educational investments. What HECS, for example, offers is a form of 'default insurance', such that former students do not have to bear the costs of reneging on their debt as a result of periods of low future income. This is quite different to a mortgage-style loan, in which the costs of defaulting exist and may be very high in terms of being locked out of other capital markets (most notably for housing) through damage to a person's credit reputation.

Default protection from income contingent repayments overcomes the fundamental problem for prospective borrowers inherent in other loan schemes. With income contingent approaches there is unlikely to be any concern about prospective students being unable to repay a loan or making repayment under financial duress.

It is important to emphasise that some aversion to borrowing for human capital investment is perfectly understandable. After all, the returns to such investments have a very high variance—many students enrolled in VET do not complete their courses and the income differences between VET graduates can be significant. The critical point is that when the repayment arrangements are sensitive to the personal income of the VET graduate, the default issue related to borrowing essentially disappears.

3.3 Income Contingent Repayment and Consumption Smoothing

A related problem for students with bank loans concerns possible consumption difficulties associated with fixed repayments. If the expected path of future incomes is variable, a fixed level of a debt payment increases the variance of disposable (after debt repayment) incomes. The point can be illustrated with the following simple example, with much more detail being available in Chapman (2006).

Imagine that a student incurs a debt with a constant monthly level of repayments of $500 after graduation, say, for five years. If her monthly income is expected to be a constant amount of $5000 after tax, then the debt is also a constant proportion of income, in this case 10 per cent. It is more likely to be the case that she expects her income to increase over time, as a result of promotions, for example, implying that the bank repayment would be expected to fall as a proportion of disposable income. In these cases the bank loan should not be expected to significantly affect her welfare.

But in the event of misfortune, such as job loss, or sickness, the former student's income stream might be far less stable than for the above circumstances. For example, imagine that the student gives a positive probability to a monthly after-tax income stream of $5000 for the first year, but only $1500 for the second year. In this case, her ex post loan obligations turn out to be 10 per cent of income initially, but then reach 33.3 per cent of income. The fixed loan repayment obligation is then associated with the likelihood of significant consumption hardships, which cannot be the case for a properly designed loan paid back contingent on incomes. In addition, for a bank loan the possibility of consumption hardship has a greater potential to discourage take-up from those expecting to not have access to alternative finances to help in the event of low future incomes, and these are more likely to be members of relatively disadvantaged groups.

In summary, income contingent loans offer the prospect of a solution to the financial market problems inherent in charging for VET. In contrast, the upfront fee regimes currently in place in the public VET sector can be argued to be a less favourable arrangement, for both economic and social reasons.

3.4 Australia's Experience with HECS[1]

In 1989 the Australian Federal Government reintroduced charges for undergraduate university students, with a (then) close to unique financing instrument, an income contingent loan, HECS. For a detailed analysis of the HECS system and its effects, see Chapman (2006). As noted above, HECS was extended to private sector higher education institutions in 2005, with this extension being known as FEE-HELP.

The biggest policy issue with respect to HECS has been the effect of the scheme on the access of prospective students from poor backgrounds. Several major aspects of the potential consequences of the application of FEE-HELP to VET with respect to socio-economic access come from the myriad research done on HECS, also summarised in Chapman (2006, p. 79).

The conclusions from the Australian research with respect to socio-economic mix and access are as follows.

(i) The relatively disadvantaged in Australia were less likely to attend university even when there were no student fees. This provides support for the view that a no-charge public university system (that is, financed by all taxpayers) is regressive.

(ii) The introduction of HECS was associated with aggregate increases in higher education enrolments.

(iii) HECS did not result in decreases in the participation of prospective students from relatively poor families, although the percentage point increases were higher for less disadvantaged students, especially in the middle of the wealth distribution.

(iv) There was a small decrease in the aggregate number of applications after the 1997 changes, but no apparent decreases in commencements of members of low socioeconomic groups, except perhaps for a small number of males into courses with the highest charges.

(v) The significant changes to HECS introduced in 1997 were associated generally with increases in the participation of individuals to 1999, irrespective of their family wealth. Even so, the growth in participation has slowed since then.

4. Does VET Pay?

While the intellectual case for income contingent loans is clear, its application to the VET sector has arguably previously been influenced by a belief that the incomes of VET graduates are not sufficiently high to sustain such a funding arrangement, that is, incomes would fail to rise above repayment thresholds, implying that loans would never be repaid. The case for an income contingent loan in the VET sector thus rests critically on there being reasonable (financial) returns to VET-level qualifications, an issue now explored in detail.

4.1 Data

The dataset for this study is a pooled cross-section from the first three (2002–2004) waves of the HILDA survey. Analysis is restricted to those aged 15 to 64 so as to capture individuals during their primary working years. In addition, to preserve the generality of our results, we exclude individuals whose education–earnings dynamics are thought to be significantly different from the population at large. These include individuals not in full-time employment, self-employed workers, those not born in Australia and indigenous Australians.

Summary statistics for variables used in our analysis are listed separately for men and women in Table 2. There are 6187 male and 3766 female observations in the estimation sample. In 2004 dollars men earn an average $1052 per week and work around 45 hours while women earn an average of $850 working almost 42 hours per week. Education is divided into nine binary dummy variables representing the highest qualification attained. The variable capturing those that did not complete high school is omitted in the estimations, and becomes the base for comparisons. The distribution of educational qualifications is broadly as expected with 31 per cent of men reporting no post-school qualifications, 47 per cent

Table 2 Variable Definitions and Summary Statistics

		Male		*Female*	
Variable	*Definition*	*Mean*	*Std. dev.*	*Mean*	*Std. dev.*
Dependent variable					
Wage	Log of gross weekly wage from main job, in 2004 dollars	6.83	0.51	6.65	0.44
	Gross weekly wage in 2004 dollars	$1052	$568	$850	$397
Educational variables					
Higher degree	Dummy, = 1 if highest qual is a higher degree	0.03	0.18	0.04	0.19
Postgraduate diploma	Dummy, = 1 if highest qual is a post-graduate diploma	0.05	0.21	0.09	0.28
Degree	Dummy, = 1 if highest qual is a degree	0.14	0.34	0.21	0.41
Diploma	Dummy, = 1 if highest qual is a diploma or an associate diploma	0.09	0.28	0.11	0.32
Certificate III & IV	Dummy, = 1 if highest qual is a Certificate III or IV	0.31	0.46	0.13	0.33
Certificate I & II	Dummy, = 1 if highest qual is a Certificate I or II	0.05	0.22	0.07	0.25
Certificate (level unknown)	Dummy, = 1 if highest qual is a Certificate of unknown level	0.03	0.17	0.04	0.21
Completed school	Dummy, = 1 if highest qual is Year 12	0.11	0.31	0.13	0.33
Incompleted school	Dummy, = 1 if did not complete school	0.20	0.40	0.19	0.39
Other variables					
Experience	Time in paid work in years	19.50	11.47	16.70	10.48
Hours	Hours of work per week in main job	45.48	9.42	41.77	7.75

reporting vocational qualifications and the remainder (22 per cent) reporting a university degree or higher. For women, the numbers are 32, 35 and 33 per cent, respectively. Finally, a measure of time in paid work derived in the HILDA survey is used to proxy experience. On average, men have around 19.5 years of work experience while women have around 16.5 years.

4.2 Earnings Functions

The first stage of our approach involves the use of wage equations to describe the impact of educational qualifications on earnings. We estimate by ordinary least squares (OLS) a standard wage equation of the following form:

$$\ln w_{it} = X'_{it}\beta + \varepsilon_{it} \quad (1)$$

where $i = 1, \ldots, N$ represents the number of individuals at each wave and $t = 1, \ldots, 3$ is the number of waves. X_{it} is a vector of characteristics that influence wages, including education, estimated experience and hours worked. Following Ryan (2002), we also allow experience effects to differ by level of (post-school) education by interacting university and VET-level qualifications with experience. Higher order terms are included for experience, hours and education-experience interaction terms to allow these effects to be non-linear.

The parsimony of the specification is a feature of our approach, and is intended to capture the full educational qualification effect that would otherwise be diluted by a range of control variables. For example, wage equations typically include controls for occupation and other job characteristics, thereby removing from the educational qualification effect an important private benefit of education—that is, enhanced access to a range of occupations. By excluding such controls from the specification, the educational qualification effects will include that component that reflects the improved occupational distribution available to graduates compared with non-graduates.

While the intellectual pedigree of this framework is well established, with roots in Mincer's (1974) human capital earnings

function, there remains considerable debate in the literature about the precision of estimates from a standard OLS regression. Specifically, if unobserved factors such as motivation or inherent ability affect both earnings and the amount of education acquired, then OLS estimates of the return to education will be biased. It is not our intention to contribute to that debate here. Rather, we take solace in Card's (1999, p. 1855) conclusion from his survey of the literature 'that the average return to education is not much below the estimate that emerges from a simple cross-section regression of earnings on education.' As such, we proceed on the basis that wage-experience profiles will provide a robust rate of return estimates with any biases as a result of unobserved ability likely to be small.

Interpretive statistics from the wage regressions are reported in Table 3.[2] As expected, wages are increasing in education. For example, a male who has completed school earns around 27 per cent more than one that has not completed school, a male whose highest qualification is a Diploma earns 47 per cent more, and a Bachelors degree holder more than 80 per cent more. Similarly, for women, a school graduate earns 17 per cent more than an individual that does not complete school, while Diploma and degree graduates earn 50 and 122 per cent more, respectively. Interestingly, women with post-school qualifications earn a higher wage premium (relative to women that did not complete school) than their male counterparts. For example, women with a post-graduate degree could expect to earn 150 per cent more than those without a high school certificate, while the corresponding premium for men is 106 per cent. This likely reflects diminished earnings prospects for women who do not complete school relative to their male counterparts.

Consistent with theory, the results also point to diminishing returns to experience. For example, a male VET graduate can expect a double-digit increase in wages for his first year of work experience, a 7 per cent increase for his fifth, and a less than 0.5 per cent increase as he gains his 20th year of experience. Diminishing returns to experience are evident for both sexes irrespective of educational level, although the initial returns to experience are somewhat lower for female VET and school graduates than their male counterparts.

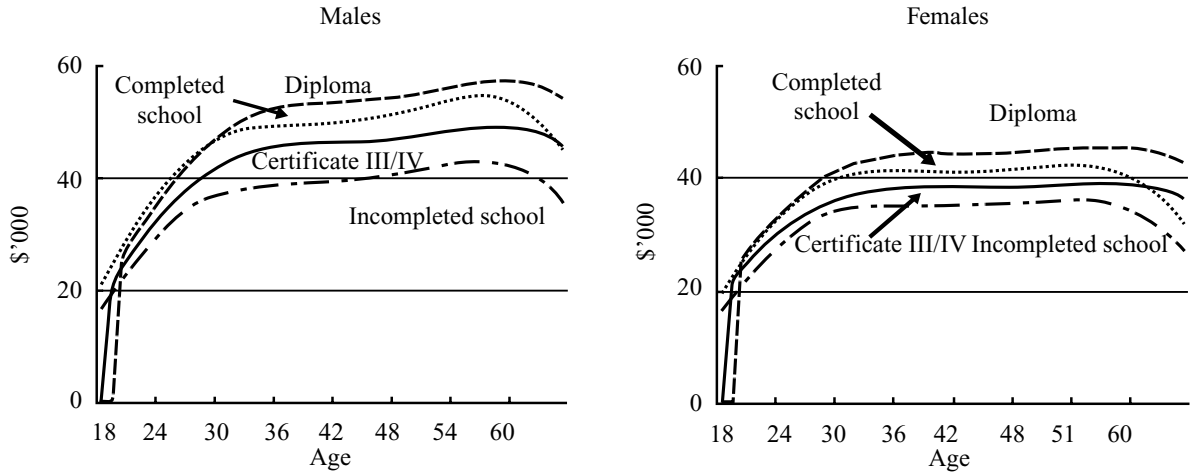
Table 3 Interpretive Statistics from First Stage Wage Regressions

	Male	*Female*
Educational attainment (% difference in wages relative to individuals that did not complete school)		
Higher degree	106	150
Postgraduate diploma	93	138
Degree	83	122
Diploma	47	50
Certificate III & IV	27	29
Certificate I & II	7	32
Certificate (level unknown)	16	38
Completed school	27	17
Experience (% change in wages for a marginal increase in experience at selected levels of experience)		
University		
1 year	10.9	12.8
3 years	8.5	9.6
5 years	6.4	7.0
10 years	2.9	2.6
20 years	0.4	−0.1
VET		
1 year	11.8	3.4
3 years	9.1	3.0
5 years	6.9	2.6
10 years	3.0	1.7
20 years	0.2	0.4
Other		
1 year	14.1	8.8
3 years	10.7	6.8
5 years	7.9	5.1
10 years	3.1	2.2
20 years	0.1	0.0

From these results we construct the age-earnings profiles shown in Figure 1. The profiles assume a full working life of 47 years, from age 18 to 65. For those undertaking post-school study, this is reduced by the amount of time it takes to complete that study. In this exercise we assume that a basic vocational Certificate (I/II) takes 6 months to complete, a skilled vocational Certificate (III/IV) one year, Associate Diplomas one and a half years, and a Diploma, two years.

It is critical to understand what the data do and do not mean with respect to the education

Figure 1 Selected Age-Earnings Profiles
(annual earnings in 2004 dollars)



category Certificates III/IV. While a significant proportion of the latter constitute trade training, particularly in TAFE, such as apprenticeships, our analysis and rate of return calculations are constructed as if these qualifications are undertaken on a full-time basis and for one year only. It follows that the analysis has little to offer with respect to apprenticeship training and traineeships and should be considered to be illustrative only of other certificates in this category.

The earnings profiles trace out the expected pattern of a steep increase in real earnings in the first part of an individual's working life, increasing more gently in the middle part, before plateauing towards the end.[3] As expected, the profiles for men are higher at all levels of educational attainment, particularly for those with post-school qualifications. That said, even the profiles for female VET graduates reach about or a little below $40 000 (in 2004 dollars), suggesting that, under reasonable repayment parameters, graduate incomes will be sufficiently high to ensure the viability of an income contingent loan (ICL) in the sector. This point is taken up more rigorously in Section 6.

4.3 Internal Rates of Return

The standard analytical tool used to estimate private rates of return to education is the internal rate of return (IRR), the discount rate that equates the benefits from a given level of education with the costs of obtaining the qualification.[4] In this framework, the benefit from study is the post-course wage differential between graduates and a selected comparison group, while the costs are forgone earnings during the period of study and the course fees.[5]

It is clear at this point that identifying an appropriate comparison group for each level of VET qualification is critical to calculations of both post-course wage differentials and forgone income. The objective is to find the group that would most closely reflect the earnings capacity of an individual if they did not undertake the course of study in question. In what follows, comparisons are made between Diploma graduates and individuals who have completed Year 12 (but without any post-school qualifications) while individuals with a Certificate III/IV qualification are compared with those who did not complete Year 12. These judgments are made on the basis that completion of Year 12 or Year 10 in conjunction with a related certificate course are common prerequisites for entry into Diploma courses. In contrast, completion of high school is often not a prerequisite for skilled vocational qualifications (even though many young people now enter skilled vocational qualifications having completed Year 12).

In addition to identifying an appropriate comparison group, the calculation of forgone income also relies heavily upon related assumptions about the mode of study and level of income support. We assume that all post-school qualifications are undertaken on a full-time basis[6] so that students do not draw an income

from employment during the period of study, although we note that skilled vocational graduates were more likely than other graduates to be working during their courses so that forgone income from undertaking their course is likely to have been minimal (Ryan 2002). All other things being equal, this will result in an overestimate of forgone income, and therefore, an underestimate of the internal rate of return (IRR) for some students. However, this effect will be ameliorated by the inclusion of income support in the calculation. The income support rate is assumed to be $8500 per annum (applied on a pro-rata basis for part-year study), based on the '18 and over, away from home' rate of Youth Allowance. Nevertheless, we emphasise again that those students who undertake their courses while working full-time, as is common in the VET sector, forgo less income and receive higher returns than the base cases in our estimates below.

Finally, we must also make some assumptions about the direct costs of courses. VET course costs vary substantially between course types, level, jurisdictions, provider types and institutions. In addition, concessional rates typically apply to individuals in receipt of social security payments such as the Youth Allowance. On the basis of an internet search of the fees charged by institutions and estimates in Borthwick (1999), fees for full-time, full-year students who pay full course costs appear to lie between $500 and $1500 per annum in 2005.[7] For completeness, we provide IRR estimates assuming course costs of $500, $1000 and $1500 per annum.

Estimates of the IRR for selected VET qualifications are presented in Table 4, and in general they appear to be high. A one-year Certificate III/IV qualification returns significantly in excess of more advanced VET qualifications because the investment (forgone income) is less: the course is shorter in duration and the chosen comparison group (individuals who did not complete Year 12) have a significantly lower earnings profile than the corresponding reference group for diploma students (individuals who did complete Year 12). In other words, the bar is set at a lower point on the education hierarchy. Even so, our results suggest the financial return is still very healthy for more advanced VET courses, with associate diplomas/diplomas yielding IRRs of between 7 and 10 per cent (real) per annum for men, and between 10 and 14 per cent for women.

Table 4 IRRs for Selected VET Qualifications

	Male (%)	*Female* (%)
Diploma (2 years)		
Course cost = $500 p.a.	7.7	10.5
Course cost = $1000 p.a.	7.6	10.3
Course cost = $1500 p.a.	7.5	10.1
Assoc diploma (1.5 years)		
Course cost = $500 p.a.	10.1	14.3
Course cost = $1000 p.a.	10.0	14.0
Course cost = $1500 p.a.	9.8	13.6
Certificate III/IV (1 year)		
Course cost = $500 p.a.	37.3	31.8
Course cost = $1000 p.a.	35.9	30.3
Course cost = $1500 p.a.	34.7	28.9

Note: The comparison group for diploma qualifications is 'completed school' while comparison group for Certificate III & IV is 'did not complete school'.

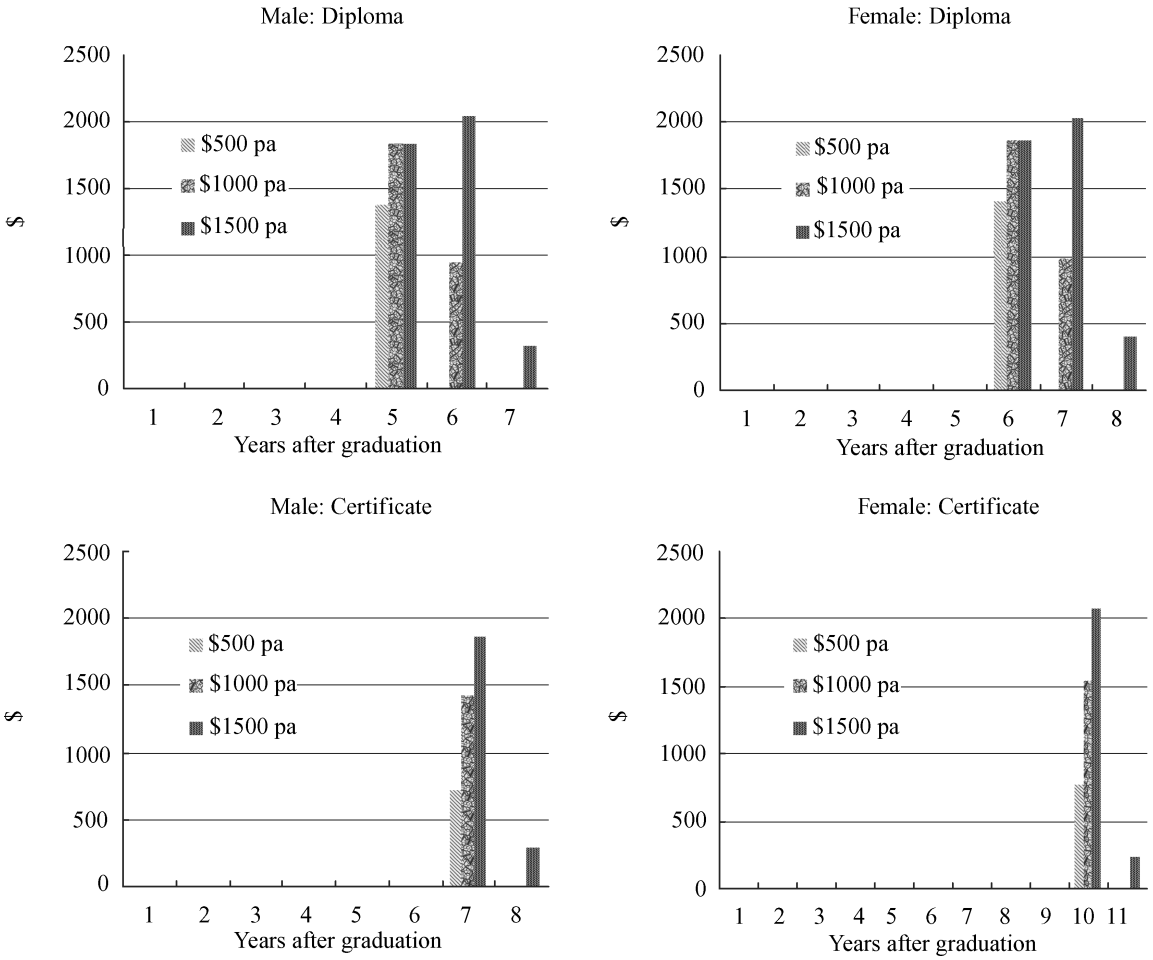
5. Introducing an Income Contingent Loan to the VET Sector

In this section we assess the implications of introducing an ICL to the VET sector. Critically, we assume the ICL will follow the template given by FEE-HELP: that is, it will be levied on a (real) interest free basis but will carry a 20 per cent loan fee and will be indexed annually for inflation.

5.1 How Long will Loans Take to be Repaid?

Using the earnings profiles for VET graduates derived in the previous section, and applying the 2004–2005 HECS repayment parameters, we are able to derive an expected repayment path for VET loans under a FEE-HELP-style regime. In deriving these repayment streams we depart from the standard approach of assuming that the earnings stream on which repayments are based is given simply by the cross-sectional earnings profiles, without any adjustment for growth in average earnings as a result of

Figure 2 Expected FEE-HELP Repayment Paths for VET Graduates



inflation or general productivity growth in the economy. Rather, since the actual repayment is determined by the nominal earnings of the individual, we adjust the earnings profile derived in Subsection 4.2 by growth in Average Weekly Earnings (AWE).[8]

Repayment scenarios for individuals undertaking a two-year Diploma course and a one-year Certificate III/IV course are shown separately for men and women in Figure 2. Male diploma graduates can expect to start repaying their loan five years after graduation, and depending on the course cost, will repay the loan in full in between one and three years. Female diploma graduates will start repaying their debt on average in their sixth year after graduation. Again, given the relatively low course fees, they can expect to have repaid the loan by their eighth year of work. On average, Certificate III/IV graduates will take longer to start repaying loans, with males commencing in their seventh year after graduation and females in their tenth year. However, given relatively low course costs, loans for both sexes are likely to be repaid in either one or two years.

5.2 Net Present Value Analysis

Due to the absence of a real rate of interest on the debt once it is incurred, the longer it takes to repay FEE-HELP the greater the subsidy or, equivalently, the cost to government of the provision of the loan. However, it is critical to note that instead of an ongoing real interest rate adjustment there is a FEE-HELP loan surcharge of 20 per cent. It follows that the extent of the subsidy/cost to government will be ameliorated, or may even be offset, by the loan fee. We now explore this issue empirically for VET graduates.

Table 5 provides the net present value of total fees for selected VET qualifications under alternative scenarios for annual fees, under both the current 'upfront fee' arrangement and

Table 5 NPV of VET Qualifications for Upfront Payment and under FEE-HELP

	Upfront NPV	*FEE-HELP NPV*[a]		*Cost to government (% of total cost)*	
		Male	*Female*	*Male*	*Female*
Diploma (2 years)					
Course cost = $500 p.a.	976	1026	1001	−5.1	−2.6
Course cost = $1000p.a.	1952	2035	1987	−4.2	−1.8
Course cost = $1500 p.a.	2929	3031	2958	−3.5	−1.0
Assoc diploma (1.5 years)					
Course cost = $500 p.a.	976	1026	1001	−5.1	−2.6
Course cost = $1000 p.a.	1952	2036	1987	−4.3	−1.8
Course cost = $1500 p.a.	2929	3038	2960	−3.7	−1.1
Certificate III/IV (1 year)					
Course cost = $500 p.a.	500	507	472	−1.4	5.7
Course cost = $1000 p.a.	1000	1014	943	−1.4	5.7
Course cost = $1500 p.a.	1500	1516	1411	−1.1	5.9

Note: (a) Includes 20 per cent loan fee.

a FEE-HELP-style regime. We assume a discount rate of 5 per cent, which is within the range that is commonly applied in this kind of analysis.[9]

In almost all cases, the 20 per cent loan fee applied under a FEE-HELP-style regime more than offsets the interest rate subsidy, such that students actually end up paying a little more in net present value terms under FEE-HELP than if they paid the course fees up front. Equivalently, the cost to government is very low and in some cases the policy may actually be revenue positive. For example, male Diploma graduates are likely to pay between 3.5 and 5.1 per cent more under a FEE-HELP regime than under current upfront arrangements, while the premium is between 1and 3 per cent for females. The only group that is likely to receive a positive subsidy under such a FEE-HELP-style regime are female Certificate III/IV graduates. In that case, the longer period of time required to repay the loan increases the value of the interest rate subsidy above the loan fee, but only to an order of around 5–6 per cent.

Overall, the assumed loan fee of 20 per cent seems to broadly offset the interest rate subsidy for VET graduates. Graduates do not end up paying any (or significantly) more under a FEE-HELP-style regime, but nevertheless receive the benefits that such an arrangement provides in terms of easing liquidity constraints; equivalently, the cost to government is minimal. Of course, the loan fee may be varied to achieve other policy objectives. A significantly lower fee, or none at all, would increase the subsidy/cost to government under a FEE-HELP-style regime, which may be appropriate if the objective is to make VET education more attractive to prospective students. Alternatively, a higher loan fee would raise additional funds for the government which could then be channelled to the nation's VET providers.

6. Towards a Contingent Loan for VET

FEE-HELP is an important innovation in Australian higher education financing and could be used to significantly extend an income contingent charging mechanism in VET. The way it might work is as follows. Students wanting to enrol in VET courses can have the costs at the point of entry met by the Commonwealth government through FEE-HELP. This means that the student commits to paying the charge through the HECS arrangements, and their debts are recorded in the Australian Tax Office in exactly the same way as if the debt was a HECS debt. In fact, FEE-HELP can be described fairly accurately as HECS with higher charges.

An interesting development is that the FEE-HELP facility has now become available to private universities, such as Bond, and some private training providers, such as

religious training institutions. Recently the Australian Council of Private Education and Training (ACPET) has called for FEE-HELP to be made available to the students of all private tertiary education institutions. If and when this happens, some parts of TAFE will be sitting in a very strange place, as the only remaining area of Australian post-compulsory education without significant access to an income contingent loan.

As implied in the 2007–08 Budget extension of FEE-HELP to VET, it would be straightforward to allow the loan scheme to be used for all TAFE Diplomas and Associate Diplomas, and would work as follows. A TAFE institution would set a fee for a course, as now happens, and the Commonwealth government would offer prospective students access to a FEE-HELP loan. If this is taken up by the student the Commonwealth government would pay the fee to the institution, and the student would commit to repaying the debt through the taxation system following HECS repayment parameters. There would be no need for there to be individual accounts, because since the initial outlay is provided through the Commonwealth it is sensible that the Commonwealth government is repaid the debt through the Tax Office. What happens to the loan repayments then is a matter for the Commonwealth government.

A final issue for policy is that while the use of the Australian Tax Office for the collection of an income contingent debt is necessary, to do so with respect to TAFE in particular raises some issues concerning federal and states/territories jurisdiction. The Commonwealth government has traditionally not been directly involved in TAFE and it would need to be satisfied that the risks associated with, for example, the level of fees being raised, have been fully thought through.

7. Conclusion

It has been argued in this paper that the student financing arrangements for VET, and TAFE specifically, sit uneasily with both economic theory and current Australian and many other countries' practice. In particular, it is well recognised that because of the incapacity of capital markets to solve problems of credit constraints for prospective students, government intervention in the form of the underwriting or provision of loans is required, but no such general intervention exists for VET students.

It has been argued further that loans taking the form of income contingent collection, such as is the case of FEE-HELP, are the most appropriate government financing instrument for all tertiary education. From other literature it seems clear that the introduction of, and changes to HECS, have had little discernible effects on private rates of return and aggregate demand for higher education. Perhaps more importantly a range of different studies has revealed that there are no apparent barriers to the poor from the introduction of and changes to HECS with respect to participation in higher education.

Our empirical analysis is motivated by the need to establish the existence and extent of private rates of return to investment in VET, since if these do not exist, the case for charging—no matter what financing arrangements are to be used—is weaker. With the use of the HILDA dataset we estimated a series of wage equations to determine the returns to VET qualifications, as measured by the holding of Diplomas, Associate Diplomas and some forms of Certificates.

With a range of hypothetical education path counterfactuals it is apparent that the internal rates of return are quite healthy at the mean (that is, as estimated with OLS) for both men and women. For example, Diplomas and Associated Diplomas are associated with internal rates of return of about 8–10 per cent per annum for men, and about 10–14 per cent per annum for women. These are roughly comparable with those usually estimated with respect to investments in undergraduate higher education degrees. Employing quantile regression techniques, we have been able to illustrate that these rates of return differ significantly across the entire wage distribution, but nevertheless remain quite robust and familiar (reported in Chapman, Rodrigues and Ryan 2007).

We then used the regression results to illustrate the extent of implicit subsidies involved in an application of current FEE-HELP arrangements for the collection of a VET debt. Our approach involved calculations of the

present value of levels of debt resulting from the imposition of different nominal charges for Diplomas, Associate Diplomas and (full-time) Certificate courses. The extent of the implicit public sector financial assistance and the associated time streams of repayments of the debt are such as to suggest that FEE-HELP would deliver acceptable, indeed minimal, levels of subsidies with respect to the budget. This part of the exercise, coupled with the compelling arguments for policy reform towards an income contingent loan for the sector, make robust the case for continuing to question the acceptability of current arrangements.

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Endnotes

1. Some of the analysis of this section follows discussion in Chapman (2006).

2. The full OLS regression results, and quantile regression results, are available in Chapman, Rodrigues and Ryan (2007). The quantile analysis provides interesting additional information but the essential findings remain the same.

3. Note that these profiles are shown in cross-section here. Income profiles used in calculations of IRRs and repayment paths under an ICL are adjusted for growth in AWE (which is assumed to be 4 per cent per annum). The implications of this are discussed in Subsection 6.1.

4. It is worth noting that the IRR provides an estimate of the return to education given the amount invested. That the IRR from some qualification exceeds that of another does not imply that it produces a higher lifetime income stream since the costs of obtaining it in terms of foregone earnings may be lower.

5. Since both the stream of benefits and costs are discounted, the greatest weight in the calculation of the IRR is given to immediate costs and benefits of the education and training.

6. This assumption should make it clear that the analysis has no relevance to many Certificate III & IV training pathways.

7. This is consistent with the levels reported in Watson (2003).

8. This is assumed to be 4 per cent per annum, reflecting average inflation of 2.5 per cent per annum and productivity growth of 1.5 per cent per annum. Note that repayment thresholds are also adjusted by AWE so that point at which repayments are made and the rate of compulsory repayment levied remains the same under both approaches.

9. The choice of discount rate is somewhat arbitrary, and a slightly higher rate could be equally justified. A higher rate would, of course, result in larger estimated subsidies from an income contingent loan.

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