Private Contributions and Accessibility of Higher Education:

Experiences from Australia and the Netherlands

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1 Introduction[1]

Higher education has proven to be an attractive investment for individuals, generating a private rate of return in the order of 5%-15% in OECD countries. In addition to these substantial private benefits, society at large also profits from a well-educated population. This latter observation is a well-known and often-heard argument for public subsidization of the higher education sector. Mostly, tuition fees thus only cover a fraction of the total costs of a higher education program. Certainly across countries, but sometimes also across institutions within countries, these private contributions show large variations. No tuition fees are charged in the Scandinavian countries, in France private contributions are modest, and some of the top schools in the US charge tuition fees over $ 20,000.

In many OECD countries the costs of higher education have gradually shifted from governments, or taxpayers, to the students and their parents. This gradual shift towards private contributions is heavily debated. Both in policy circles and in the academic debate the question "how much students should contribute to their own education" has received ample attention. This question may have become even more urgent in recent years, with OECD countries witnessing an increased fiscal pressure in combination with often sharply rising participation rates in higher education (cf. Barr, 1998).

This paper addresses the topic of private contributions and accessibility of higher education by looking at experiences from Australia and the Netherlands. The Australian experience with the reintroduction of tuition fees through the Higher Education Contribution Scheme (HECS) in 1989 is of particular interest, as it provides a kind of natural experiment to explore whether higher tuition fees jeopardize accessibility of higher education.

In Section 2 we first discuss the relevant economic theory and recapitulate the arguments that have been put forward in debates on tuition fees. The Australian HECS is described in more detail and evaluated in Section 3. The Dutch system of tuition fees and student support is presented in Section 4, and we take a closer look at the impact of private contributions on student enrollment. In Section 5 we wind up, and present options for policy. We also briefly look at the French student support system in the concluding section.

2 The role of government in higher education

Government intervention in the market for higher education services is warranted for the promotion of efficiency and equity. In this section we summarize the arguments, and discuss implications for policy.

[1] This paper heavily draws on earlier work (CPB and CHEPS, 2001; Canton, 2001; Canton and De Jong, 2002). I would like to thank the participants of the seminar "Education and Redistribution" at the Council for Employment, Income and Social Cohesion (Paris, November 15 2002) for useful comments.

2.1 Efficiency arguments

From the public finance literature we know that government action is needed when markets fail. Five types of market failures have been identified in the higher education sector.

First, human capital spillovers arise when knowledge is transferred to others beyond conventional market transactions. Workers share knowledge and skills through social interaction (cf. Lucas, 1988). The benefits from a person's knowledge stock thereby partly accrue to third parties, and this reduces the private incentives to invest in education. When knowledge spillovers lead to under-investment in higher education, the government may try to restore the efficient level of investment through subsidization. Overall, the empirical case for human capital externalities is weak (cf. Acemoglu and Angrist, 1999), but in case of for instance engineering or science spillovers might be substantial. Targeted subsidies could then be considered as an efficient solution to internalize human capital spillovers.

Second, credit market imperfections become visible in the fact that students often find it difficult to get study loans from commercial banks, as these banks do not accept collateral in the form of human capital. The appropriate type of government action to correct for this problem is to make sure that students can borrow — either by issuing a bank guarantee or by direct public provision of student loans.

Third, uncertainty about future income prospects could discourage people to invest in higher education. The market imperfection is the absence of an insurance market. Government can (partly) provide such insurance by making repayments of study loans income-contingent. In that case, graduates repay only when their income exceeds some threshold. Low-income graduates (or low-income drop-outs) are thus exempted from debt repayments. They are thereby partly insured against the risk of their educational investment. A good example of such a repayment system is the Australian Higher Education Contribution Scheme (to be discussed in Section 3).

Fourth, a distortion in the human capital accumulation decision is introduced when income taxation is progressive, or when private contributions to higher education are not tax-deductible. Government subsidization may then be warranted in order to correct for the tax distortion (see van Ewijk and Tang, 2000).

Finally, society may want to preserve certain fields of study with little marketable value (the popular examples being Egyptology or cuneiform script) to protect the cultural inheritance. This would call for government subsidization.

2.2 Equity arguments

It is often asserted that the government also has a role in the higher education market from an equity-perspective. Equity arguments are more subtle than it often seems in popular debates. In fact, some

people use the equity argument to pledge for lower private contributions, while others use it to advocate tuition fee increases. In our reading of the literature, two distinct motives are put forward:

• Income re-distribution;

• Vertical social mobility.

The first motive is based on the idea that the income distribution is affected by participation in higher education. In particular, it has been argued that government support to higher education could help to reduce income disparities in the economy (cf. Goldin and Margo, 1992; Teulings, 2000). The idea is that the skill premium will be reduced when there are relatively more skilled people in the labor force. As a consequence, wages go down for skilled workers and up for unskilled workers. The resulting flatter income distribution may more closely reflect social preferences with regard to equity.

But income redistribution via this mechanism (instead of through progressive income taxation) is rather ineffective, due to the following reasons:

• Students are not very price responsive, so that substantial public support is needed to influence enrollment;

• The effect of an increase in the supply of high-skilled workers on the skill premium is not well-established. It is sometimes even claimed that there is a perverse relationship between the supply of skilled labor and the skill premium: an increase in the relative supply of high-skilled workers could be accompanied by an *increase* in the skill premium (cf. Acemoglu, 2000; Nahuis and Smulders, 2002);

• It can be questioned whether such a policy is equitable, as it implies an income transfer from the average taxpayer to tomorrow's well-off — at least in the short run, when the effects on the skill premium are not yet visible.

The second motive refers to the notion that people should have equal chances for personal development, regardless of socio-economic background. Talented people from economically disadvantaged families must be able to climb up the social ladder, and access to education helps to promote such vertical social mobility. Though this point is often mentioned as an equity argument, it is also a well-known result from the economic literature that educational production is efficient if the enrollment decision is independent of the initial allocation of resources (read: parental income). And access can also be guaranteed without expensive generic public support, e.g. by provision of a loan scheme with income-contingent repayment. Under such a scheme, public support is targeted at those who default on their debt because of unemployment, sickness or other special circumstances.

After this quick refresher of economic theory, we next turn to the Australian system of private contributions, which — as we shall argue — smartly combats some of the above-mentioned market imperfections.

3 The Higher Education Contribution Scheme in Australia

3.1 Description

The Australian Higher Education Contribution Scheme (HECS) provides an outstanding experience for analyzing the effects of introducing or raising tuition fees. First of all, the introduction of the HECS meant a sudden demand for private contributions in a situation where the individual participants in higher education did not pay any contributions at all. Second, the level of tuition fees to be paid was substantial, around 23% of the average costs of higher education programs in 1989 (when the HECS was introduced). A third argument for choosing the Australian case is that the government tried to limit the negative influences of charging tuition fees on participation in higher education. In particular, a deferred repayment scheme through the tax system was offered to those who could not or did not want to pay the tuition fees up-front. This is a rather novel system, and it has received ample international attention.

HECS applies to Australian or New Zealand students in Commonwealth funded higher education award courses which lead to degrees, diplomas, associate diplomas, graduate diplomas, graduate certificates, Master's qualifying courses, Master's courses or Ph.D.s. HECS applies to around 80% of all students enrolled in universities. Some categories of students are exempted from the HECS payments, such as TAFE-students (Technical and Further Education), students charged tuition fees by the institution, students in non-award courses, students with an Australian Postgraduate Award (scholarship), participants in enabling courses for disadvantaged students, and students with a merit-based equity scholarship. In addition, all foreign (overseas) students have to pay a cost-covering tuition rate.

The level of HECS-tuition fees is determined by the Minister of Education. The HECS rate was originally set to recover 20% of the costs of an average university program, which was $A 1,800 (€ 1,080) in 1989. The level of HECS has been indexed to the cost of living and has risen to $A 2,450 (€ 1,470) in 1996. These rates relate to full-time students. Part-time students pay proportionately less. Table 1 illustrates the development of tuition fees under the HECS-system.

Table 1: Tuition price levels under the HECS.

1989	1996	1997	1999
Uniform: $A 1,800	Uniform: $A 2,450	Low: $A 3,300	Low: $A 3,409
		Middle: $A 4,700	Middle: $A 4,855
		High: $A 5,500	High: $A 5,682

Note: $A 1 € 0.60 (January 2001).

Until 1997 tuition fees were equal for all fields of study. However, because HECS is fundamentally a cost recovery system, charging fees that reflect the differential costs of the various training programs has been strongly advocated from the beginning. As of January 1997, tuition fees were differentiated into three tariff bands: low, middle, and high (cf. Table 1).

This new differentiated tariff structure is not consistent with a pure cost recovery model. The new pricing structure is a hybrid model, in which both costs and expected future benefits from obtaining a particular degree have been given a weight. As such, the most expensive tier not only includes expensive courses like medicine, dentistry, veterinary science and engineering, but also law, which is one of the cheapest courses. Other inexpensive programs, such as economics and business, are charged at the medium level. In addition, compared to the uniform tuition level of 1996 ($A 2,450), the weighted average private contribution has increased by about 70%.

HECS payments are made on a semester basis. Normally, students have two choices in how to pay their HECS contribution:

• Pay up-front with a 25%-discount;

• Defer or partially defer their payments until after graduation.

The first alternative allows students to make their HECS contribution directly to the institution at the beginning of each semester. Because students do not use any government facilities to defer their payments, they get a 25%-discount on their payments. In the 1999/2000 situation this implies that a student enrolled in a “band 1” subject will be charged an up-front rate of $A 2,557 instead of $A 3,409. Over the years, the number of students choosing the up-front payment option has increased, up to 29% in 1997.

The second alternative, chosen by the majority of students (71% of HECS-liable students in 1997), enables students to defer payment of HECS until after graduation. In this method of deferred payments, the Commonwealth government pays the tuition price to the institutions and provides the students with a loan. An important characteristic of the HECS-loan is that no interest is charged on the outstanding debt. The total debt is only indexed annually by adjusting it in line with the cost of living on the basis of the Consumer Price Index. A combination of both payment options is also possible. Since 1998, students may choose to pay part of the fees up-front (at least $A 500) with a 25%-discount, and defer the remainder.

When students opt to defer their payment they have to give their Tax File Number to the institution. This identification number is used by the institution to report details of the debt every semester to the Australian Taxation Office (ATO), which further administrates the loans and their refunding. Repayments of the HECS-loan are collected through the tax system and are income-contingent. This implies that people repay at different rates, depending on annual income after graduation. Graduates with high earnings repay more rapidly through higher (monthly) installments than graduates with lower earnings.

The repayments only start when annual earnings exceed a certain threshold. Until 1996, this threshold was equal to the average taxable income of Australians working for pay ($A 27,675 per annum in 1996). Since 1997, the income threshold at which repayments start has been lowered (for instance, in 2000/01 it was $A 22,346). The annual repayment rate increases with the level of income. If income exceeds the minimum threshold, ATO will withdraw automatically 3% of the total taxable income as HECS-repayment. A growth in income leads to a successive gradual increase in the repayment rate up to a maximum of 6% of total taxable income. The HECS repayment thresholds are adjusted each year to reflect any change in average weekly earnings. Table 2 presents the repayment rates and income thresholds for 2000/01.

Table 2: Tariffs for income-contingent repayment of study debt in Australia.

Income ($A)	Tariff (%)
below 22,346	0
22,346-23,565	3
23,566-25,393	3.5
25,394-29,456	4
29,457-35,551	4.5
35,552-37,420	5
37,421-40,223	5.5
40,224 and above	6

Note: $A 1 € 0.60 (January 2001).

3.2 Evaluation of the HECS

The primary objective of HECS was to allow the higher education sector to expand without a substantial growth in government funding. In particular, HECS aimed to reintroduce private contributions without jeopardizing accessibility to higher education. In this section we will evaluate the HECS-system.

The introduction of tuition fees in Australia in 1989 does not seem to have had any major negative effects on student enrollment. In exploring the effects of the HECS on accessibility, several types of studies have been employed. First, some studies address the issue whether HECS affected the private rate of return to higher education. Chapman and Chia (1989) conclude that the effect of HECS would be so small that demand for higher education (even by students from disadvantaged backgrounds) would not be hampered. Also the 1997-changes to the HECS (lowering of income threshold and differentiated tuition fee rates) would hardly change the high rates of return and, as such, were unlikely to reduce the attractiveness of higher education (Chapman and Salvage, 1997).

Some other studies evaluate the effects on students from different socio-economic backgrounds. The major conclusion is that the proportions of students from different socio-economic backgrounds have hardly changed since the introduction of HECS (Chapman, 1997; Andrews, 1999).

People from lower SES groups benefited as much as other groups from the increase in student numbers (though they are still under-represented in the student population).

The effects of HECS on individual decision making have also been measured through behavioral surveys. On the basis of a survey immediately after the introduction of HECS in 1989, Robertson et al. (1990) conclude that HECS had little effect on the composition of the pool of applicants and no effect on the composition of those accepting an offer to enroll. On the request of parliament, the Higher Education Council imposed a system of monitoring the effects of the HECS, particularly for the socio-economically disadvantaged. In their first survey in 1991, executed by the consulting firm Ernst and Young, it was found that school leavers gave a low ranking to HECS for deciding not to go to higher education. School leavers who intended to go to university and adults indicated HECS as a middle-ranking factor for deciding not to enroll, after academic factors and more pressing economic factors. The Council concluded that "most qualified applicants from across groups in the study would not be significantly deterred by HECS" (Higher Education Council, 1992, p.21).

Using data from the Australian Council of Educational Research (ACER), Chapman and Chia (1993) compare the composition of 18-year-old students in higher education in 1988 and 1993. Students were distributed among three family wealth categories and then compared on the basis of their participation rates. For all three categories, participation rates had gone up by around a third between 1988 and 1993. Though the participation rate of those from wealthy backgrounds is larger, the introduction of HECS did not exert any discernible effects on the socio-economic composition of the student body.

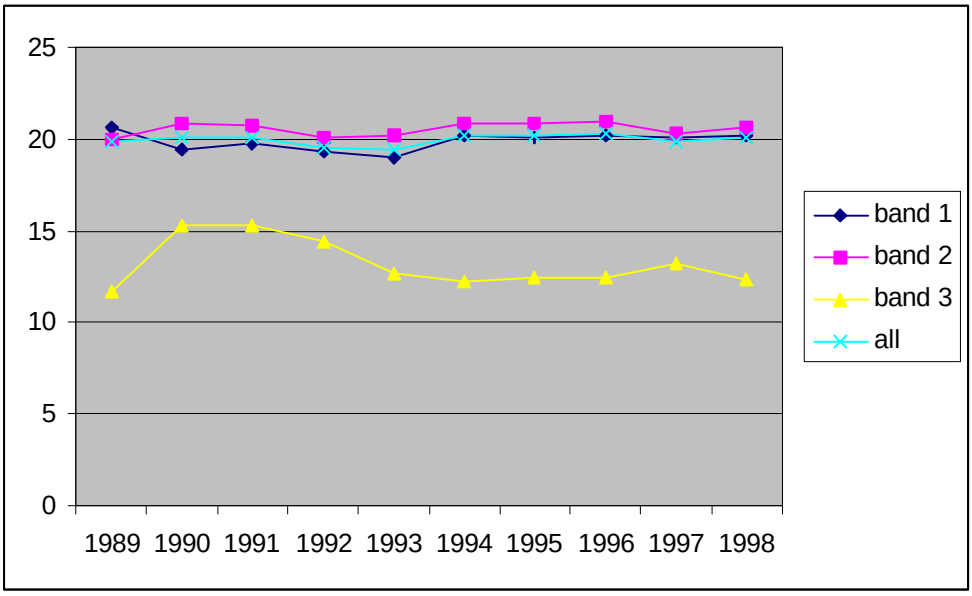
More recently, Ramsay et al. (1998) survey students eligible to enter the University of South Australia and compare the views of students from low socio-economic status entering the institution through the university's special access scheme (USANET) with the views of a control group. An interesting finding is that HECS appeared to have a more positive impact on the decision to enroll for the USANET-students than for the control group. All in all, the surveys on the attitudes of students do not support the idea that HECS erects a barrier to higher education. At the national level, Encel (2000) studies the effectiveness of a number of government programs targeted at indigenous Australians. He finds that their participation has shown a fairly steady increasing trend since 1987, though participation rates are still lower than for the non-indigenous population.

Students choosing the deferred payment option have to accept a debt. Opponents have indicated that some groups of (potential) students might be unwilling to incur a HECS-debt because they dislike debt (Andrews, 1999). This debt-aversion stems from either the aversion to the risk of being unable to repay the debt, or because it shifts expenditures from the future to the present. In an unpublished report by Sharp & Anderson Marketing Consultants, it is concluded that SES-background of people had no strong or consistent effect on debt-aversion as measured by the willingness to apply for new mortgages or personal loans and the amounts involved after graduation. All in all, there seems

to be no support that HECS deters people from low SES-backgrounds because of debt-aversion (Andrews, 1999).

A next step in the HECS arrangements was taken in 1997 when the income thresholds at which repayment through the tax system starts was lowered and when tuition prices increased substantially and fees were differentiated into three tariff bands. The question thus emerges whether low SES-students are under-represented in the three HECS-bands. Figure 1 shows the share of commencing students from low SES-backgrounds.

Figure 1: Share of commencing students from low SES-backgrounds (percent of 17-24 age cohort).



First of all, this figure shows that the proportion of commencing students from low SES-background has been stable around 20%. From the figure it also appears that low SES-students are particularly under-represented in band 3 fields (law, engineering, medicine, etc.). This situation, however, has been a long term feature which certainly prevailed before the introduction of HECS in 1989. Such inequalities have been recognized as long as universities exist in Australia. A Commonwealth Education Survey in 1984 already indicated a domination of students from high socio-economic backgrounds in veterinary science and law. However, the choice of courses does not seem to be determined by financial motives. Recent work of Harvey-Beavis and Elsworth (1998) and James et al. (1999) found that subject choice is primarily influenced by the intrinsic interest in the field. Also, under-representation of low SES-students in band 3 fields can probably be explained by the very high entrance scores required in conjunction with the relatively low performances of low SES-students at secondary school.

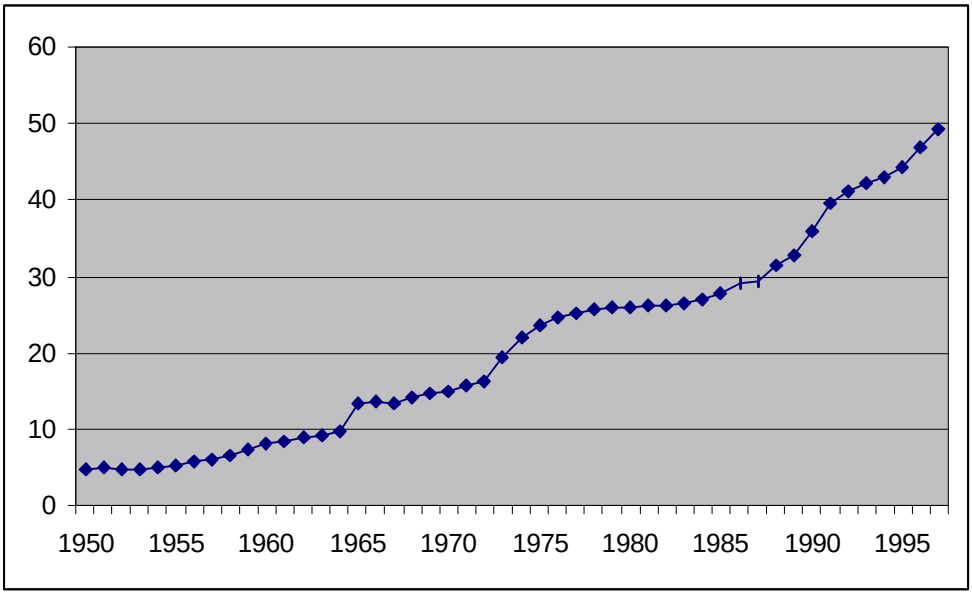
A second interesting conclusion from this figure is that the recent changes in the HECS-system (increasing and differentiating fees, lowering the income threshold) do not appear to have any

effect on the proportion of students from low SES-groups. However, because students can attend courses from differently priced programs, the price borders between the various disciplines are not fully clear. This has made the original simple HECS structure a bit less transparent.

Between 1989 and 1997 total enrollment in universities increased from 441,076 to 658,827 students. This reflects a rate of growth that never could have been funded by public means. In addition, the number of rejected applicants for higher education places has fallen substantially. Together with a stable distribution of students and new entrants over different socio-economic groups, this brings us to the conclusion that more people from all social classes benefit from the HECS-system (Andrews, 1999).

The higher education sector also witnessed a rapid expansion in terms of the percentage of people in the 20-24 age cohort enrolled in a higher education program. Figure 2 shows the historical development over the 1950-1997 period. In 1950, about 5% of the 20-24 year old people participated in some form of higher education; by 1997 this percentage has risen to 50%. The average annual growth rate in student enrollment over the 1950-1988 period was 5.3%, and over the 1989-1997 period it was 5.2% (recall that HECS was introduced in 1989). This is a negligible difference.

Figure 2: Enrollment in higher education (percent of age cohort 20-24).



Opponents of HECS complained that the new and untried arrangement would cause an enormous administrative burden. It is true that university administrators need to collect all up-front HECS payments and have to forward data about the individual debt of all persons who choose to defer their

payments. The government compensates the institutions for these administrative costs, which were estimated at about $A 12 million (in 1995). This is approximately 2% of total HECS-revenues.

The administrative burden as a result of the deferred payment option mainly stems from the additional tasks for the Australian Taxation Office (ATO), which administers the loans and collects the repayments. In addition, once the individual's income exceeds the income threshold an automatic trigger imposes the appropriate charge. It has been estimated that the administrative burden of this arrangement is about $A 5,5 million per year. This is about 1% of total HECS revenues in 1995 (Chapman, 1997).

The actual experience with HECS shows that repayment rates of the debt are high. Recent statistics on repayments through the tax system show that after its initial years of operation the total amount repaid has increased very strongly. So it can be concluded that most graduates are able to repay their HECS-debt. In fact, most of the graduates repay their debt even within ten years, as can be seen from Table 3.

Table 3: Outstanding debt in HECS-system.

Age of outstanding debt	% of total
Studied before 90/91	1
Last studied 90/91	2
Last studied 91/92	4
Last studied 92/93	7
Last studied 93/94	10
Last studied 94/95	13
Last studied 95/96	17
Last studied 96/97	46
Total	100

Winding up, the general conclusion to be drawn from all studies with a direct or indirect focus on the effects of HECS is that ever since its introduction higher education has expanded considerably without lowering the proportion of students from low SES-groups. The under-representation of low SES-individuals is mainly the result of non-financial (barely manipulable) factors such as values and attitudes. HECS is only of minor importance, if there is any influence at all. By-and-large, there is no evidence that HECS reduced accessibility of higher education (Chapman, 1997). Even the recent increase and differentiation in fee levels does not seem to have influenced applications and student enrollment. In addition, the rate of repayment by graduates who deferred their tuition payments until after graduation through the tax system appears to be considerably higher than expected. Most graduates repay their HECS-debt in full within a period of 10 years after graduation. Finally, the

administrative system collecting tuition fees up-front or after graduation through the tax system operates effectively and efficiently.

Altogether, the introduction of private contributions through HECS and its subsequent changes do not seem to have had a negative influence on the accessibility for students from lower SES groups. The socio-economic composition of the student population did not change, implying that participation in higher education also increased for low-SES students. This suggests that applicants are relatively unresponsive to changes in tuition fees. However, we do not know what the developments would have been without the introduction of HECS and its successive changes. So while the conclusion that HECS did not deter accessibility seems warranted, a skeptic may argue that higher education enrollment could have increased even more rapidly without private contributions (the counterfactual). Though we cannot refute this argument, we are inclined to conclude from the Australian case that private contributions to higher education can be introduced or increased without hampering access to higher education, as long as payment is contingent on the individual (future) income situation.

4 Private contributions and student enrollment in the Netherlands

The present student support system in the Netherlands is debated, and a commission headed by Willem Vermeend (Minister of Social Affairs under the Kok-administration) is preparing a proposal to reform the Dutch system in line with the Australian model. In this section we sketch the Dutch student support system.

4.1 Tuition fees and student support arrangements

Tuition fees for regular full-time students are centrally determined by the Minister of Education and are uniform for all subjects in higher education programs (in Dutch: *wettelijk collegegeld*). The tariff for regular students amounts to € 1,304 in 2000/01. Tuition fees as a percentage of the total direct cost of a higher education program have been fairly stable around 20%.

From September 1996 on, tuition fees for part-time students, students who have not completed their studies within the nominal length of study plus 2 years (6 or 7 years), and external candidates can be set by the institutes themselves (in Dutch: *instellingscollegegeld*). Tuition price for part-time students is relatively high at Erasmus University Rotterdam and Delft University of Technology. Most universities make some use of the room for tuition fee differentiation, though the absolute differences are small.

In 1986, a system of family allowances, tax facilities and means-tested grants was replaced by one system of direct financial student support through the introduction of the Student Finance Act.

Although this system has gone through a large number of reforms, it still consists of the following three basic provisions:

• All regular full-time students at funded and appointed institutions receive a basic grant for the nominal duration of a higher education program (4 or 5 years). As of the academic year 1996/97, the basic grant is called the "performance-related grant" because students receive it initially as a loan. If students show satisfactory academic performance, the loan becomes a grant. The amount of the basic grant depends on the housing conditions of students. As of January 2001, the basic grant amounts to € 67 per month for students who live with their parents and € 206 for students who live on their own. Students are free to take out less than the maximum grant to reduce the debt in case they do not meet the performance requirement;

• Students can apply for a supplementary grant when parental income is below some threshold (means-tested). This grant can only be received for the nominal duration of study (4 or 5 years). The supplementary grant is also subject to the performance requirements applying to the basic grant. Depending on parental income, the maximum amount of the supplementary grant is € 196 per month for students who live with their parents and € 212 for students who live on their own. Students are eligible for the maximum grant when parental income is below approximately € 23,597;

• Finally, students can voluntarily take up an interest-bearing student loan of at most € 229 per month. The loans are not means-tested.

Apart from the basic provisions, students are allowed to earn an additional annual net income of at most € 8,849. Student support is reduced when they earn more. This arrangement also comprises a subsidy-element, as other groups receiving financial support from the government are not allowed to earn additional income.

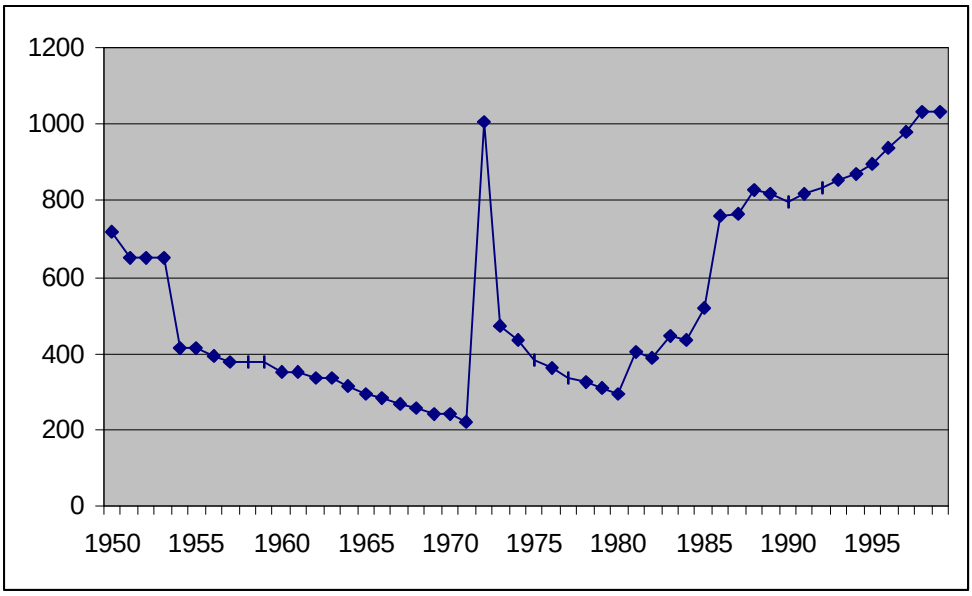
Finally, students eligible for student support also receive a public transport pass, entitling students to free public transport either on working days or in the weekends (the days public transport is not for free, the transport pass entitles them to a 40% discount on all fares).

In a worst-case scenario, students could end up with a debt of approximately € 40,840. After a grace period of 2 years, debts must be repaid within a period of 15 years with a minimum monthly installment of € 45. If graduates have difficulties in repaying their monthly installments, they can ask for an annual means-test. Based on that, monthly repayments can be reduced (even to zero). Any remaining debt after 15 years is acquitted. Loans are interest-bearing. As of January 2001, the interest rate is 5.18%.

4.2 Demand for higher education

Figure 3 shows the post-war development of real tuition fees in the Netherlands. After a gradual decrease, tuition fees were drastically increased in 1972. One year later the government halved the tuition fee. Between 1980 and 1999, real tuition fees more than tripled.

Figure 3: Real tuition fees in the Netherlands (€, in 1990-prices)



Canton and De Jong (2002) employ time-series analysis to study the effects of tuition fees and student support on university enrollment, controlling for changes in income, the college premium, opportunity costs, and the unemployment rate. Canton and De Jong (2002) conclude that the enrollment elasticity with respect to tuition fees is weak and insignificant. This small effect of tuition fees makes sense from the viewpoint of the human capital model, as this direct cost component is very small when considered against the gain in lifetime income associated with an academic degree. On the other hand, the positive contribution of financial support to student enrollment is non-trivial. Canton and De Jong (2002) find enrollment elasticities with respect to financial support in the order of 0.16-0.32 (with robustly significant estimates).

5 Discussion and policy options

What lessons can be drawn from the Australian and the Dutch experience? Despite the lack of firm econometric analysis, the Australian experience with the HECS suggests that tuition fees do not jeopardize accessibility of higher education when the government provides loans with income-contingent repayment arrangements. This HECS system is a smart solution to both credit market and insurance market imperfections. Although the Dutch student loan system also contains some kind of income-contingent repayment menu, it is less sophisticated than the Australian HECS. The econometric evidence for the Netherlands suggests that tuition fees do not discourage student enrollment.

Now let us return to the question "how much students should contribute to their own education". Does the above suggest that tuition fees should be increased? The question whether private contributions to the cost of higher education should be increased could be studied in a social cost-benefit analysis (cf. Canton, 2001). Crucial for the outcome of this exercise is the size of human capital spillovers and the price elasticity of the demand for higher education. Human capital externalities drive a wedge between private and social returns to education and the existence of these spillovers justify public subsidization of higher education programs. The quantitative importance of human capital spillovers is not well-established. While the overall case for strong externalities is weak (cf. Acemoglu and Angrist, 1999), certain programs may yield social returns substantially larger than private returns. This may call for a more targeted system of student support. While it seems natural to include engineering and science as candidates for targeted support, this choice is admittedly somewhat arbitrary and certainly more research is needed to identify programs especially important for society at large.

A natural starting point to implement a shift toward higher private contributions in the Netherlands would be to replace the grants in the student support system by loans. The common counterargument to such a policy change is that Dutch students are debt averse, and often prefer to take a part-time job instead of a student loan. This may have negative effects on study performance. However, the "debt aversion" phenomenon often vanishes into thin air once students have graduated. The observed reluctance to borrow could also be due to the characteristics of the Dutch student loan system. Recall that the repayment of student loans in the Netherlands is characterized by a grace period of two years after graduation, a minimum monthly installment of € 45, and a maximum repayment period of 15 years. Any remaining debt after 15 years is acquitted. This essentially makes the student loan system similar to a mortgage-type system, and students may perceive this as problematic. A prolongation of the repayment period may help to spread the repayment burden. As graduates will benefit from higher education during their entire life, and their salaries typically rise with age, this increased flexibility could bring the repayment system more in line with individual preferences. Automatic repayments through an income-contingent scheme administered by the tax authorities may facilitate the debt repayment. It also prevents people from falling into such "embarrassing" situations as a means test to request a temporary reduction or halt of monthly installments. Finally, payments through the tax system are not as visible as out-of-pocket payments. This characteristic might help to make loans more acceptable to students.

A final comment is in order. When the maximum repayment period is extended (to about the length of the graduate's working life) and monthly installments are income-contingent, the system has features in common with a graduate tax system (cf. Jacobs, 2002). An important difference between graduate taxes and loans with income-contingent repayment is that actual study costs do not matter for individual private contributions in the former system (when the graduate tax rate does not depend on subject), but costs do matter in the latter system (students attending an expensive program end up with

a higher debt). In addition, under a self-financing graduate tax system, solidarity is imposed between those who attend higher education: successful graduates pay for those who dropped out or are unable to repay their debt. And in the Australian student loan system with income-contingent repayments, the default risk is borne by society. But in intermediate versions of both systems, the default risk is shared between the former students and society (i.e. the taxpayers).

Applications to France

In a nutshell, the French system of tuition fees and student support can be described as follows.[2] The majority of students (about 90%) attends a public university or public higher education school. The Ministry of Education sets the level of tuition fees charged at these institutions. For the year 2002/2003, tuition fees vary from € 137 for most academic programs, to € 265 for e.g. *Diplôme d'Etudes Approfondies* and *Diplôme d'Etudes Supérieures Spécialisées*, € 352 for medicine, and € 398 for engineering. Private higher education institutions can freely choose tuition fees. These tuition prices roughly vary between € 5000 and € 10000, and are typically around € 6000 / € 7000.

The system of financial support to students mainly consists of grants, depending on family income and a number of other factors. There are six levels of grants, level 0 to level 5, where the supplementary grant ranges from € 1278 (level 1) to € 3456 (level 5; year 2001/2002). Students in level 0 are only exempted from tuition fee payments. Around 30% of students is eligible for a grant. In addition to this grant system, there are some additional arrangements such as *allocation d'études* (grants to students who experienced personal difficulties), *bourses sur critères universitaires* (higher education grants based on university performance, not depending on family income), and *prêt d'honneur* (loans that need to be repaid within 10 years after graduation).

Guille and Skalli (1999) present estimates on private returns to schooling in France. Estimated returns to schooling vary widely, somewhere between 4% and 19% with 8% as an approximate average. This roughly corresponds to estimates for the Netherlands. Tuition fees in the Netherlands are, however, substantially larger (about € 1300 in 2000/2001). The question thus arises whether introducing an Australian type of tuition fee system can yield substantial efficiency gains. Introducing higher private contributions in combination with the provision of a loan scheme with income-contingent repayments would relieve government spending on higher education without jeopardizing accessibility. Something worth considering?

[2] I would like to thank Olivier Bontout for providing information on the French higher education system.

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