

THE FUNDING OF TERTIARY EDUCATION IN NEW ZEALAND

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INTRODUCTION

Commencing in 1984, the Labour Government in New Zealand introduced sweeping macroeconomic and microeconomic reforms (a process that has been continued by the National Government who took office in the latter part of 1990). Amongst other things, protectionist import barriers were torn down, the free trade pact between Australia and New Zealand was considerably extended, the New Zealand dollar was floated, various State assets were sold, some government-owned entities were corporatised, and a programme was instituted aimed at reducing the budget deficit and the chronically high levels of international debt. Major reforms were also introduced in the entire education sector. This paper discusses the economic rationale for the changes in the funding of tertiary education.

I commence by stating briefly the major changes that have recently been introduced in tertiary education in New Zealand. Thereafter, I examine the economic rationale underpinning the reforms in tertiary education. Attention is given to the following aspects seriatim in the remainder of the paper: division of costs between individuals and society; the issue of variable subsidies across courses; differential subsidies for younger and older students; the funding of living allowances; and student loans. A short conclusion follows.

MAJOR CHANGES IN TERTIARY EDUCATION

The Hawke Report (1988) proposed a number of far-reaching changes in tertiary education, and many of these proposals were implemented (New Zealand Government, 1989). One major departure from past practice recommended in that report was that students should pay fees (previously, fees were miniscule and amounted to only an

administration charge). In

1990, the annual fee at tertiary institutions was set at NZ\$1,250; in 1991, it was \$1,300; and in 1992, the standard tuition fee imposed by the government was abolished and institutions were left free to set their own fees. The abolition of a centrally imposed fee was part of National's "Study Right" programme.

The "Study Right" policy was implemented from the beginning of 1992. All students aged under 22 on enrolment are eligible for Study Right assistance for three years. The Study Right subsidy is 95% of the estimated tuition costs for undergraduate study. For subsequent years of undergraduate study (and for those who are aged or older on first enrolment), a lower subsidy is paid. This policy discriminates on the basis of age, and has been very controversial. While it has been indicated by the government that the lower non-Study Right subsidy will fall to 75% of estimated course costs over the next few years, it was set at 85% for 1992. Some domestic purposes beneficiaries and long term unemployment beneficiaries, however, are eligible for full Study Right assistance to give them the opportunity to acquire skills to assist their re-entry into the workforce (see Lockwood Smith, 1991).

Postgraduate students doing research-only qualifications compete for scholarships so that successful contenders receive subsidies at the same level as Study Right students, while all other postgraduate students are funded at 85% (75% in the future) of estimated tuition costs.

The subsidies paid for students in different courses no longer are equal to course costs less a standard tuition fee: the subsidy is variable, related both to course costs and whether or not the student qualifies for Study Right assistance. Institutions are, however, free to set their own fees. Thus, an institution that does not wish to differentiate in fees between students on Study Right and those who do not qualify for Study Right assistance, or between students in different course-cost categories, may charge flat fees and cross-subsidize

students. Where there is no cross-subsidization, fees may vary significantly. The estimated cost per student per annum in dentistry in 1992, for example, is \$41,320, while that in arts is \$6,534 (Lockwood Smith, 1991). With subsidies set at a fixed percentage of course costs, the difference in fees could be a few thousand dollars a year. At Otago University, for example, fees varied between \$500 and \$5,500 during 1992, while a flat fee of \$1,050 was charged at Auckland University.

A major change occurred in the domain of student allowances (maintenance expenses of students). Payments for living allowances, it was argued, had become very generous by international standards, and were not targeted at lower socio-economic groups. Stricter eligibility criteria were introduced from the beginning of 1992: for students under 25 years of age the allowance is targeted on combined family income. Above a particular threshold, the allowance begins abating at 25c in the dollar (similar to the arrangements in Australia). Prior to these arrangements, living allowances were unrelated to parental income or only partially related to parental income for most students. The changed arrangements for living allowances resulted in a significant fiscal saving, and this has largely been applied to fund additional places in tertiary education and training and to fund the new loans scheme (see below).

The government was aware that some students would face financial barriers to participation in tertiary education as a result of the new arrangements. It thus introduced a student financing facility - a student loans scheme - from the beginning of 1992. Attempts to introduce a student loans programme in 1989 had failed, largely because banks were concerned about security, the complexity of government guarantee arrangements, and the complexities of "equity" constraints that would have been imposed on the banks (Treasury, 1991). The loans scheme introduced this year, however, is a government

rather than a private scheme, and repayments will be income contingent. All bona fide students are eligible to apply for loans to cover full tuition fees and incidental expenses (the latter has a maximum of NZ1,000). In addition, students who do not receive the full (or any) living allowance may borrow to meet living costs - in this way, it differs from the HECS arrangements. The interest rate is subsidised by the government so that borrowing costs for students are significantly below market rates. The scheme is government run and operated by the tertiary institutions and a financial organisation as agent for the government: in fact, students can make transfers between their loan and bank accounts by telephonic instruction. Any bad debts as a result of default on loan repayments in the future will be handled by Inland Revenue.

The approach to and arrangements for funding tertiary education in New Zealand today are very different from the arrangements throughout most of the 1980's and those in earlier decades. While the new structures in New Zealand are by no means perfect, many of these

reforms have been based on sound economic principles. In saying that, I do not claim any superiority for economic considerations in influencing the direction of change in tertiary education. Economists can certainly provide valuable insights on education issues, especially related to the structure and funding of education. However, economists tell us only part of the story in education, and for the rest we must look to the philosophy, history, psychology and sociology of education (amongst other disciplines).

PRIVATE/PUBLIC MIX OF FUNDING

Much of the debate in education concerns whether students should pay fees. The principles of welfare economics indicate that students should make some direct contribution towards the costs of their education, since they are major beneficiaries. Tertiary education provides to the student both investment and consumption benefits. Investment benefits are

largely in the form of higher earnings later on (Psacharopoulos, 1981, 1985). Consumption benefits include direct satisfaction from the education process itself (remember John Dewey (1916) claiming: "the education process has no end beyond itself, it is its own end") as well as more enduring consumer benefits, such as the ability to enjoy good books, appreciate artforms, and improved decision-making capacity (see Michael, 1972, 1982). Since many of the benefits are internalised, there is sound economic rationale for the beneficiaries to bear some of the costs.

At this juncture, I consider it appropriate to mention that education, in the economist's sense, is not a pure public good. This does not mean that it has no value for broader society - it obviously does. An educationalist who recently spent a few years in New Zealand appeared to misunderstand the notion of a public good in the economist's jargon (Grace, 1988). The notion of a public good is an analytical device which aids us in understanding whether the market would fail to provide certain services in the absence of government intervention.

Public goods are goods that satisfy the non-exclusion and non-rival principles. The non-exclusion principle concerns the inability to restrict consumption once a good exists. The non-rival principle means that consumption of the good by any consumer does not influence the amount available for all other consumers (Musgrave, 1959).

There are very few pure public goods - defence and lighthouses are typical examples. Once

a lighthouse (for example) exists, there is no way of excluding free riders from enjoying the benefits. Also, consumption of the services of the lighthouse by some does not reduce those services obtainable by others. Since the provision of lighthouse services satisfies the non-rival and non-exclusion principles, a lighthouse is regarded as a public good. In the absence of government intervention, no private market would here exist, because no individual would pay for a service that all others could enjoy through "free riding".

Education, however, is not a pure public good. Under most institutional arrangements for delivery of education throughout the world, exclusion is possible. Similarly, there is rivalry in consumption - whilst it is likely that the education of some may even be positively affected by the addition of more consumers, there comes a point beyond which the quality of educational services declines by the addition of more students in any class. As Melck (1990, p.4) notes, education can best be viewed as a semi-public good. Since it is not a pure public good, government intervention cannot be justified on these grounds.

The above notwithstanding, education provides benefits to society above and beyond those captured by the individual. The external (societal) benefits of education are said to include such things as: the transmission of culture; improved productivity of the less educated through their informal contact with the educated in the workplace; the advance of knowledge; and citizenship benefits (Bowen, 1977; McMahon 1987; Brennan 1988). Indeed, the great Alfred Marshall (1890, 1920 ed., p.216) claimed that "the economic value of one great industrial genius is sufficient to cover the expenses of the education of a whole town." If left purely to the market, education would be underprovided because the private demand does not take into account societal benefits. Arguably, this is the main efficiency reason for government subsidies in education.

Both private and public funding of tertiary education may thus be justified. Unfortunately, the view espoused by the Carnegie Commission (1973) is still pertinent - we have no objective way of evaluating precisely the private benefits against the public benefits. Likewise, Blaug (1983, p.126) has argued that although "economics has much to say about the form subsidies to higher education ought to take ... (it has) almost nothing (to say) about the appropriate level of these subsidies." This becomes a matter (in part) of political judgment.

I recently calculated the costs borne by students for their tertiary education in New Zealand, taking into account not only direct fees but also earnings foregone (Marais - for NZ Treasury, 1990). With fees at their 1990 level in New Zealand and making various assumptions about costs of books and incidentals, and assuming also that all earnings forgone (except taxation) were a cost to the student and not to society, I estimated that students bore between 30 and 50% of total costs of education, depending on course cost category (medical students, for example, shouldered much less of the costs of their study than did arts students). Society must of course decide whether this is too high or too low.

The principle of charging tertiary students fees is sound; it is the appropriate level of these fees which is debatable.

VARIABLE AND FLAT SUBSIDIES

As indicated above, the government subsidy is very different for different courses. It has been argued that variable subsidies could be both inefficient and unfair (Tertiary Review Group, 1991; Treasury 1991). Subsidies set at the difference between course costs and a standard tuition fee might be inefficient because there would be very little incentive for students to weigh up the relative cost of programmes against the benefits in deciding what to study. There is also little incentive for tertiary institutions to reduce operational costs: price control implies that institutions are unable to attract students through lower fees. Furthermore, because externalities provide the main reason for government funding in tertiary education, a flat fees policy implies that the social (external) benefits of tertiary education vary directly with course costs: more expensive courses receive higher subsidies because these offer higher external benefits. This is unrealistic. It is far more reasonable to suppose that the external benefits to society of tertiary education are roughly the same for any student over any given period, irrespective of course of study.

The system of flat fees could be considered unfair because students would

receive different levels of assistance from the government, depending on the degree chosen. The differences in subsidies paid to a dentistry and an arts student over three years, for example, amounted to around NZ\$100,000 at 1991 prices. Some consider that a flat subsidy would be more equitable, particularly since those from upper income backgrounds are often disproportionately

represented in higher cost courses, such as medicine and dentistry. This view is supported by those who subscribe to the notion of "horizontal equity" (McMahon, 1982, p.16).

An opposing view is that all individuals should have equal right to any tertiary course at one, standard direct private cost (see, for example, Boston, 1988). The argument here is that tertiary education is a "positive right" which society has a duty to provide in the quantities demanded by those with the necessary endowed potential. According to this view, individuals differ enormously and the equal treatment of equals is more closely related to things such as equal subsidies for all medical students, equal subsidies for all arts students, etc., rather than equal treatment of all students or equal treatment of an entire cohort. Those with an ability to study dentistry or medicine should not have to pay more for their tertiary education than those with an ability in arts. The costs to society are justified in terms of societal right objectives.

The major problem with the "rights-based" view is that it ignores efficiency objectives completely. If investment in human capital promises a sound future rate of return even at a low state subsidy, increasing that subsidy increases the private rate of return but leaves the social rate of return unaffected. This could provide perverse signals to individuals and could lead to an oversupply of graduates in some fields and an undersupply in others. It also places little incentive on institutions to contain costs in certain high cost courses.

The polar options faced in New Zealand last year concerning subsidies thus

were: flat fees
(for which there was widespread precedence throughout the world but which could be criticised as being neither efficient nor equitable), or flat subsidies (which, while having the attractiveness of addressing efficiency criteria, would have led to an enormous fluctuation in fees, given present cost structures in tertiary education and assuming fees were set at the difference between course costs and the government subsidy). In the end, a middle position was adopted where subsidies were set at a constant percentage of course costs (95% for Study Right students and 85% for all non-Study Right students). While subsidies still vary enormously between courses, they do so by less than they did previously. Institutions are, however, free to set their own fees and, as mentioned above, some institutions have passed on to students the effects of the new subsidy arrangements in terms of differential fees, while others have resisted this and cross-subsidize individuals and courses.

What are some of the likely longer term effects of the changed arrangements? We can only speculate at this stage, but there is some reason to expect improved efficiency in the tertiary education sector. In the longer term, fees, like any other prices, will be set taking cognizance of demand and supply factors (irrespective of the institutional response in the shorter term). Fees, like other prices, perform an essential role in a market economy: they are essential for identifying preferences, allocating resources, achieving efficiency and financing supply.

It is likely that decisions made by institutions would be more efficient than those previously made by the central bureaucracy. Decisions are generally made efficiently when they are made by those that have most pertinent information and have greatest incentives to make decisions wisely. The tertiary institutions have a more detailed knowledge of the wishes of their clientele and their own cost structures; they now make decisions that were formerly made on the advice of civil servants in Wellington. The institutions have incentives to make

these decisions wisely, because both price and non-price competition has been accommodated in tertiary education and their decisions would ultimately impact on their own revenue and costs. Competitive pressures provide the incentive for institutions to contain costs and to vary the mix, quality and price of education to satisfy consumer demand. A system that contains inherent mechanisms to satisfy societal wishes and accommodate internal efficiency is surely desirable.

Few would argue with the generalisation that market forces perform an automatic regulatory role. Education has not, however, been handed over entirely to the private sector. Rather, an attempt has been made to design an institutional structure that provides incentives for the right quantity, mix and quality of education to be produced automatically and efficiently, while leaving tertiary education funded largely by the public sector. While a framework exists for achieving desired outcomes in an efficient manner, it is of course debatable whether the present subsidy levels are pitched to ensure the most appropriate institutional and individual behaviour. The experience of the next few years could be illuminating.

STUDY RIGHT AND NON-STUDY RIGHT STUDENTS

Is there any sound economic rationale for discriminating between Study Right and all other students? This is examined in two parts: first, I consider whether those who had previously

obtained state funding for tertiary education should be treated differently from those who had not; second, I discuss whether age of entry into tertiary education should determine funding levels.

The argument for paying lower state subsidies to those who have had more than three years in tertiary education is based on equity principles together with the practical reality of a budget constraint and the ever-increasing demand for tertiary education. If the government in any country wished to offer more places in tertiary education but was under pressure to

contain the growth of public spending in all its activities, it could do so only by seeking a higher private contribution from participants. In New Zealand, growth in student numbers has been particularly dramatic. While there were only 35,000 university students in New Zealand in 1970, there were close to 90,000 students by 1991, and participation at university grew by 11.5% between 1990 and 1991, the largest increase in 20 years. A higher private contribution to continue to accommodate such growth requires either that students all would pay more, or that some students would pay more. This is an equity judgment. In New Zealand, the view was taken that the level of subsidy should fall after three years, so that higher subsidies could be given to those who had received less than three years of tertiary education.

Many would consider that even this reduced subsidy beyond Study Right is still very generous: students, theoretically, can obtain subsidy funding for as many years of tertiary education as they wish to undertake, provided they are accepted by a tertiary institution. Furthermore, most students would have had their primary and secondary schooling funded by the public sector as well. It hardly seems unreasonable to expect the subsidy level to fall after some period in the education system. The cut-off point, however, is arbitrary, and is dictated more by the availability of government funds for tertiary education than any economic principles.

Are there any valid reasons for age discrimination? On purely economic grounds, the government may have decided to assist younger students to a greater extent for three years because the social rate of return on younger students is likely to be greater since they would on average contribute back to society for a longer period after completion of their studies than their older counterparts. In addition, it could be argued that school-leavers would not have

had the opportunity to build up reserves or at least develop the same access to funds as those

who have had several years of labour market experience.

These arguments should be weighed against the view that students might be better suited to entering certain fields of study (such as social work, journalism, amongst others) after they had had some life experience, and that some students might make better long-term career choices if they did not rush these when they left school. Furthermore, although it is true that those who are younger contribute back to society for longer periods, it should be remembered that the discounted value of annual earnings becomes relatively very small beyond twenty-five or thirty years (at any reasonable rate of time preference). The policy of subsidizing on the basis of age might also be seen to discriminate against women, since women are often more heavily represented amongst mature age students.

While support for student fees and variable student fees can be obtained on the basis of rational economic argument, the case with age discrimination is more ambiguous: efficiency and equity arguments can be offered against the current policy.

LIVING ALLOWANCES

Total government outlays on living allowances were dramatically reduced in New Zealand in the 1991 Budget. This was the result of much tighter targeting. Prior to 1991, there was a near universal entitlement amongst students for living allowances, with limited targeting on parental income for only part of the student population. Under the new arrangements, living allowances for students under the age of 25 are targeted on parental income (similar to the AUSTUDY programme in Australia).

The reason for the change in the arrangements in New Zealand was, apparently, that living allowances were high by international standards, and further funding was required to finance expansion of the tertiary education system. Table 1 below shows that living allowances as a percentage of GDP in New Zealand in 1990 were at the upper end of the spectrum compared with other major OECD countries (data for other countries, however, was for earlier

periods). Even under the new arrangements, however, living allowances as a percentage of GDP will be around .28 or .29% of GDP - still very close to the percentage in the U.K. where

student maintenance allowances have traditionally been regarded as very generous. Indeed, spending on tertiary education is to remain relatively high in New Zealand. Public current spending on tertiary education as a percentage of GDP is around 1.9%; this is, proportionately, one-and-a-half times to twice as great as the relevant percentages in the U.K., West Germany, Japan and France, but below that in the United States and Canada (see OECD, 1990; UNESCO, 1990). Furthermore, government spending on all education had grown from around 4.5% in 1985 to 6.3% of GDP in 1992 (Treasury, 1991). Further growth in public spending on education as a percentage of GDP seems unlikely, given the competing demands for public funds. Some reallocation of the education budget is thus required to accommodate growth in student numbers.

Table 1. Student Aid as a Percentage of GNP/GDP (1984-87)

Australia	0.13 (more recent estimates around .2%)
Finland	0.19
France	0.08
Netherlands	0.20
U.K.	0.30
U.S.A.	0.17
New Zealand	0.40

Source: OECD, 1990; New Zealand, Official Estimates (1990).

Although living allowances provided an obvious source of funds to accommodate some growth in enrolments, one of two approaches could have been adopted: either all allowances could have been cut; or alternatively, tighter targeting could have been applied, leaving living allowances intact for those from low income backgrounds but expecting those from families who could afford to do so to fund their living costs (which is in line with the residual funder approach of the government - c.f. Prebble, 1991). The latter approach - which was adopted in New Zealand - could be seen as a move in favour of some notion of

"vertical equity" (see Rawls, 1977). An argument could also be made, on purely efficiency grounds, for giving more to those from lower income backgrounds for education purposes. Stated simply, there would be a shortfall in demand for education if left purely to the market because individuals do not consider the external (societal) benefits in making their purchase decisions. If demand

for tertiary education is influenced by family income then, under certain conditions (see Marais, 1992), it could be shown that the shortfall in demand for those from lower income groups is likely to be greater than that for those from upper income groups. To achieve equilibrium in the education market, higher subsidies might be required for lower income groups than higher income groups.

It is, again, not possible to determine some optimal figure for spending on living allowances. However, the principle of allowing access to greater numbers and making cuts that do not penalise those from low income backgrounds is intuitively attractive, and can be rationalised on both efficiency and equity grounds.

LOANS

While externalities provide a major reason for government intervention in tertiary education based on efficiency principles, a further reason for intervention relates to access (often loosely described as an equity argument, although it has also efficiency dimensions). Optimal investment in human capital might not occur because individuals cannot use human capital as collateral in borrowing funds for education. The difficulties faced by students in private capital markets would tend to be asymmetrical amongst different income groups, penalising more heavily those in lower income groups. Some guaranteed financing mechanism is necessary so that students may defer upfront costs until they are earning sufficient to commence repayments (see Friedman, 1955; Woodhall 1982, 1990). Furthermore, if loans

were income contingent, disincentives to borrow for human capital formation would be reduced.

The loans scheme introduced in New Zealand was to ensure that those who qualified for tertiary education but who would have difficulty meeting upfront costs would not be discouraged from studying at a university, college or polytechnic. Owing to the changed arrangements in living allowances in particular, the loans scheme was an integral feature of the new arrangements in tertiary education in New Zealand (students who do not qualify for all or part of the living allowance grant may borrow the component not granted from the government). Because loan repayments are income contingent, disincentives to borrow are

minimized. (An alternative scheme was considered in New Zealand, where banks would lend money to students while the State would give a guarantee of repayment, but this was deemed less suitable than the government-run income contingent scheme).

Students are faced with some real interest cost (the interest rate is at present around 6% in real terms), but the rate is a few per cent below market rates. While this could provide perverse incentives (such as families borrowing maximum amounts to contribute towards the finance of holiday cottages), the rate of interest is significant and the prospect of a huge debt on completion of tertiary education might serve to encourage students towards conservative borrowing practices. Rates of interest in other parts of the world on student loans are generally subsidized by the government to some extent (see OECD, 1990). The little evidence available so far is that the demand for loans has been marginally lower than anticipated, but this could only be properly evaluated after some years of operation.

The introduction of a loans scheme in New Zealand has not, contrary to popular opinion, provided an avenue for a reduction in the fiscal outlay of the government. It is only in the longer term that a steady state is reached where the scheme by and large

becomes self financing. In the interim, the government has to raise funds to finance such outlays in the same way as would be necessary under a pure grants scheme.

CONCLUSION

The funding and structural arrangements in tertiary education have changed substantially in New Zealand over the past few years. It has not been possible, in a paper of this length, to evaluate fully the pros and cons associated with the changes. Indeed, I have ignored many issues, such as the administrative costs associated with the new arrangements, institutional adjustment difficulties, the pace of change, award arrangements in institutions, the forthcoming capital charging arrangements, potential default difficulties with the loans scheme, amongst many others. Instead, I have considered whether there are sound economic principles governing some of the major changes.

In conclusion, I would like to summarise some of the characteristics of an efficient tertiary education system, drawing on some of the arguments presented in the paper above. The

framework in New Zealand can now accommodate many of these characteristics.

*The beneficiaries of tertiary education should contribute towards the direct costs. Since both students and society benefit, both should contribute towards costs.

*Students, as decision-makers on the acquisition of their tertiary education, should face incentives to weigh carefully the costs of education against the benefits, taking cognizance of the real costs to society of resources used and the potential economic value of their education. Any decisions made that have resource implications cannot be efficient unless those implications are thoroughly considered.

*Fees should reflect conditions of demand and supply. If this were not the case, there could hardly be equilibrium in the education market. There is

of

course no efficiency reason why there should be one standard fee for all courses at all institutions, in the same way as there is no reason why exactly the same level of resources should be devoted to all courses.

*Government funding to institutions should follow students. Institutions should face incentives to respond to the market - they should be rewarded for meeting the needs of their clientele and penalised for failing to respond to the needs of society.

*Institutions should be able to operate flexibly and have autonomy over their major operational activities - they should not have to accept the decisions of bureaucrats far removed from the coalface. Efficiency requires that those making decisions have most pertinent information and have strong incentives to make them wisely.

*Institutions should face the discipline of competition to encourage the efficient production of desirable education outputs. Institutions should be cost-minimizers for any level of education output, rather than government-revenue maximizers. (The alternative to competition is an extensive system of central control, but this is probably more distasteful to most institutions than competition and there is little evidence to suggest it works.)

*There should be some financing mechanism to overcome obvious problems related to borrowing where human capital cannot be used as collateral for financing education. That mechanism, however, should not itself distort the workings of the broader capital market.

*The system should be structured so that it is capable of expanding to meet the needs of increasing numbers of students. With increasing levels of sophistication in the economy, greater participation by any cohort in tertiary education is likely to continue into the future.

Ironically, greater efficiency would accommodate better the achievement of equity and fairness objectives, because resources are released to accommodate entry by greater numbers. Those changes that are introduced which allow greater efficiency to accommodate access to

larger numbers must surely be applauded.

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