

## Comment

**Nancy Devlin, Paul Hansen and Stephen Knowles**

**G**rant Scobie and Alex Duncan systematically consider each of the conventional arguments for state subsidies to tertiary education, and in doing so make a convincing case against a 100 per cent subsidy. But they do not argue against the desirability of some positive amount of subsidy. Although they seem to be opposed to the current funding arrangements, they do not volunteer an opinion on what the specific (reduced) subsidy *should* be.<sup>1</sup>

For theoretical purposes, it is very difficult to determine the 'correct' level of state funding, mainly because identifying and evaluating the public benefits that tertiary institutions produce is difficult. Scobie and Duncan discuss the public benefits arising from university education under the usual 'externalities' and 'equity' headings. Without producing evidence to support their assertions, they dismiss these benefits as being relatively unimportant at the margin when compared with those benefits that other types of education may produce. The contribution that we hope to make to the debate is to remind readers of other public benefits that universities deliver.

Like the report of the Ministerial Consultative Group on the Funding of Growth in Tertiary Education (MCG, 1994), Scobie and Duncan focus exclusively on the issue of who (students or state) should pay for the *education* that students receive. But these studies make no explicit recognition of the fact that universities produce more than just teaching services. Universities also produce original ideas and information through research, act as a storehouse for specialised knowledge (for example, university libraries and the embodied knowledge of academic staff), and function as a (supposedly) independent watch-dog on society (Cooper & Culyer, 1981). These are fundamental functions of universities, distinguishing them from other types of tertiary educational institutions. Indeed, Section 162(4a and b) of the New Zealand Education Act 1989 defines universities as institutions in which 'teaching and research are closely interdependent, and most of their teaching is done by people who are active in advancing knowledge', and further states that 'they are a repository of knowledge and expertise' and 'accept a role as critic and con-

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<sup>1</sup> As Scobie and Duncan note, for practical purposes this question has been settled by the government's recent adoption of the Ministerial Consultative Group's (MCG) Option A. As a member of the MCG, Professor Scobie was among the supporters of Option B, which proposed a gradual reduction of the subsidy to 50 per cent, the direction of funding to students rather than institutions, and greater support for groups that are under-represented at tertiary institutions.

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science of society'. Moreover, a university is 'characterised by a wide diversity of teaching and research . . . that maintains, advances, disseminates and assists the application of knowledge, develops intellectual independence and promotes community learning'.

When discussing how much students should pay towards the cost of running universities, Scobie and Duncan employ the terms 'tuition costs' and 'course costs' (per student) interchangeably, without explicitly defining them. They obviously have in mind the average total cost per student of running universities (that is, the total cost divided by the number of students enrolled). However, this cost is attributable not just to the process of providing tuition, but also to the process of producing other university outputs.<sup>2</sup> It is therefore important to know the extent to which, at the margin, the research and other non-tuition outputs produced by universities are joint products or by-products of the teaching process.

New Zealand 'chooses' (as enforced by statute) to have its universities produce both teaching services and research. This may be an inefficient arrangement if there are economies of scope arising from the joint production of these services: in other words, consumers of both teaching services and research may benefit from the joint production of these outputs if the costs of producing one or both are lowered (Panzar & Willig, 1977). However, to the extent that these outputs are not joint (in the sense that research *must* be produced in order for tuition services of a given quantity or quality to be produced) then students are not the primary beneficiaries of research.

It seems reasonable to assert that most postgraduate education, because of its student research component, is a joint product of research by university staff. But at the undergraduate level, teaching and staff research are likely to be far less complementary. Stanford and Duhs argue that academics wishing to maximise their lifetime earnings 'are highly likely to attempt to reduce time devoted to teaching and to use teaching techniques which minimise involvement with teaching and students' (1994:76). On the other hand, on the assumption that active researchers are enthusiastic and up-to-date with developments in their field, students may benefit educationally from having teachers who are involved in research. In a review of around 40 studies on these issues, Feldman (1987) concludes that, overall, only a very small positive correlation exists between research output and teaching effectiveness (though the apparent relationship may, of course, be coincidental).

So it could be argued that undergraduate teaching services can be produced without research being produced (as happens at polytechnics now). Lloyd et al., in a production function analysis of Australian universities, comment that the separation of funding for teaching and research since 1988 'has illustrated that the resources used in teaching and research can be separated and we can regard them as largely independent activities' (1992:4).

<sup>2</sup> The widespread confusion between the average cost per student of running a university and the average cost of educating a student — two quite different things — may stem from the fact that New Zealand universities are funded by the government in direct proportion to the number of students they enrol.

The public benefits associated with universities' role as 'repositories of knowledge' and 'society's conscience' can be regarded as by-products of maintaining groups of highly trained people and specialised facilities for the purpose of producing teaching and research. Notwithstanding that the opportunity cost of these by-products is by definition zero and that other tertiary education institutions also produce them, there is no reason to expect that the optimal size of universities with respect to the production of these by-products coincides with that for the production of teaching and research.

It therefore seems obvious that the production costs attributed to research should be 'netted out' from any analysis of what the appropriate state subsidy to tuition should be. Research costs are likely to account for a significant proportion of total New Zealand university costs. Although individual universities and departments are funded predominantly on the basis of student numbers, the overwhelming emphasis on research output for the purposes of hiring and promotion ensures that many academic staff are likely to maximise, subject to teaching constraints, the time they devote to research. In addition, as a result of leave arrangements, tenured staff generally devote one year in every seven entirely to research.

The recognition that universities produce multiple outputs is fundamental to the debate about the appropriate level of subsidy to students. If, say, just half the cost of running a university is strictly attributable to the provision of student courses, then the recently introduced policy requiring students to pay 25 per cent of total university costs is equivalent to their paying 50 per cent of their tuition costs. To our knowledge, the recent debate on the appropriate level of state subsidisation of universities has failed so far to address the value of university research to society and the appropriate means by which it should be funded. A possible consequence of ignoring these issues is that competition between universities and other institutions not similarly committed to research will provide incentives to make 'efficiency gains' by cutting research-related costs in an attempt to keep fees competitive. From the point of view of society as a whole, such an outcome could represent a false economy.

## References

- Cooper, M. & A. Culyer (1981), 'The Economics of Universities', The University of Otago (Economic Discussion Papers No. 8103).
- Feldman, K. (1987), 'Research Productivity and Scholarly Accomplishments of College Teachers as Related to Their Institutional Effectiveness: A Review and Exploration', *Research in Higher Education* 26: 227-98.
- Lloyd, P. et al. (1992), 'Estimates of Economies of Scale and Scope for Australian Universities', Department of Economics, University of Melbourne (Research Paper No. 340).
- Ministerial Consultative Group (MCG) (1994), 'Funding Growth in Tertiary Education and Training', Ministry of Education, Wellington.
- Panzar, J. & R. Willig (1977), 'Economies of Scale in Multi-Output Production', *Quarterly Journal of Economics* 91: 481-93.
- Stanford, J. & L. Duhs (1994), 'Resource Allocation and Incentives in an Academic Department', *Economic Papers* 13(4): 72-86.