**DRAFT ONLY**

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# National system reform in global context:

## The case of Australia

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**Abstract.** The Australian higher education system is a notable example of successfully implemented New Public Management (NPM) reforms. Despite idiosyncratic aspects (e.g. the extreme emphasis on education exports and the size of the reductions in public funding) it provides a salutary example of the strengths and weaknesses of the use of competitive systems, mixed public/private funding, business models, output and product formats, and strong executive steering. Higher education in Australia is relatively transparent and efficiency driven and subject to detailed accountability for the use of public funds. Executive forms of organization are highly developed. Australian institutions have a pronounced capacity to respond to new developments and take strategic initiatives, especially offshore. There has been a substantial reduction in the fiscal load and Australia has become a major education exporter. But teaching and research capacity have been thinned out; and academic cultures weakened in at least some institutions; and while institutions and academic units have achieved enhanced autonomy in relation to budgets and new programs, they have lost intra-system diversity and arguably they have less control over the content of teaching and research than prior to the NPM era. Their capacity to take initiatives has been enhanced in some respects but diminished in others. Moreover, NPM systems downplay the production of public goods in higher education, especially in research which is primarily a public good in the economic sense. As the OECD (2008) notes, the role of university-produced open source knowledge in innovation in all sectors is enhanced by communicative globalization. In teaching also the role of higher education in enhancing the conditions of economic activity in all sectors of industry, i.e. its indirect effects, is at least as important as the creation of direct income-earning benefits for graduates. However NPM systems focus on the role of higher education as producer of direct economic benefits, and so are increasingly ill-fitted for developing higher education's larger role in the knowledge economy.

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# 1. Introduction

**1.1 Coverage of the paper.** The paper briefly outlines its starting assumptions in three areas: forms of freedom; higher education and the knowledge economy; and the distinction between the New Public Management (hereafter NPM), including the neo-liberal variant of the NPM, and globalization. It then describes and explains Australian university reform since the mid 1980s.[2] The Australian approach can be characterized as 'Anglo-Westminster' as in the UK and New Zealand. A feature of all three Westminster polities is use of the global market in international students as primary mode of cross-border engagement, generator of export revenues (Table 1), funding substitute for government grants, means of changing institutional behaviours. The paper evaluates the Australian reform in terms of intended and unintended consequences. The concluding parts consider the Australian reforms in terms of (1) the specific questions before the conference, (2) the comparative context, (3) forms of freedom, and (4) the role of higher education in the knowledge economy.

**1.2 Forms of freedom.** Conditions of autonomy, self-responsibility and self-determining (choice-making) freedom play a central part in all spheres of modern life; from work and consumption to social policy. Issues of self-determining freedom are integral to the governance and regulation of higher education, which by its nature needs discovery autonomy in research and strategic autonomy in institutional leadership, though autonomy is never the only element at play. From the viewpoint of higher education practitioners freedom is an end in itself. From the viewpoint of all persons freedom is means and medium in which the benefits of higher education are produced. However, use of the term 'freedom' varies. It is often ideological or rhetorical, which is not very illuminating. Definitions of freedom are rarely discussed.

Nobel Laureate Amartya Sen makes a useful contribution in his distinction between different aspects of self-determining freedom. According to Sen 'agency freedom' is the sense of identity, purpose and centred will. 'Freedom as control' (negative freedom) is the absence of constraint or control by external an party. 'Effective freedom' or 'freedom as power' (positive freedom) is the capacity to carry out one's choices, including the material means to do so.[3] Though these aspects are mutually consistent, each can exist without the others. Particular reforms in higher education may advance one or another. Reforms can remove direct controls on institutions, heightening operating autonomy and freedom as control. But if public funding is reduced, this may subtract from effective freedom. Autonomy can be ambiguous.

**1.3 Role of higher education in the knowledge economy**. For the last two decades policy has emphasized the direct role of university research in the IP chain. For many, the 'knowledge economy' means turning science into a saleable commodity. But the main benefit of research in higher education is not the production of knowledge as a tradable good, it is the production of open source knowledge, which can enter the value chain in a potentially wide range of industries and at various possible points.

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[2] There is a more detailed discussion of the Australian reforms up to the end of the 1990s in Marginson & Considine, 2000.

[3] Sen, 1985; 1992. For more discussion see Marginson, 2008a.

Since the advent of the Internet at the beginning of the 1990s there has been an explosive growth in freely disseminated open source knowledge sourced through research publication or papers posted directly by the creators. Global knowledge feeds into the innovation programs of business and industry everywhere, often being used for purposes never envisaged by the original creators. Nobel Laureate Joseph Stiglitz argues that in economic terms knowledge is primarily a 'spill-over' and a public good.[4] It can sustain a property regime only between the point of creation and initial dissemination, the period in which there is first mover advantage. Once disseminated, knowledge remains useful but it is non-excludable and non rivalrous and its market price is zero. While higher education is the ultimate starting point for much commercializable intellectual property (IP), only a minority is initiated by companies which directly use universities as incubators. It is true that sometimes university companies or partnerships capture the value of IP, but this is the exception rather than the rule, and largely confined to sectors such as biotechnology and electronics. The data show that despite strenuous efforts to reorient university research to commercial IP production, higher education's role in the direct creation of saleable knowledge remains modest. In national innovation systems, even the USA, income for research purposes rarely covers more than 5-6 per cent of the costs of university research. The OECD has shifted its position on this policy issue. It stated last year:

> The idea that stronger IPR [Intellectual Property Right] regimes for universities will strengthen commercialisation of university knowledge and research results has been in focus in OECD countries in recent years… countries have developed national guidelines on licensing, data collection systems and strong incentive structures to promote the commercialisation of public research… Even though the policy issue of stronger IPR for universities is prominent, it contains a number of problems, however. The most important of these is that commercialisation requires secrecy in the interests of appropriating the benefits of knowledge, whereas universities may play a stronger role in the economy by diffusing and divulging results. It should be remembered that IPRs raise the cost of knowledge to users, while an important policy objective might be to lower the costs of knowledge use to industry. Open science, such as collaboration, informal contacts between academics and businesses, attending academic conferences and using scientific literature, can also be used to transfer knowledge from the public sector to the private sector… very few universities worldwide … have successfully been able to generate revenues from patents and commercialising inventions, partly because a very small proportion of research results are commercially patentable.[5]

A similar but more qualified point can be made about teaching in higher education. In developing higher education as an export commodity, the Anglo-Westminster countries have found a way to directly secure economic value from it (Table 1). As such teaching in international education is produced as a private good in the economic sense. But teaching combines potentials for both public and private goods.

[4] Stiglitz, 1999.
[5] OECD 2008a, 161-162.

*Table 1.* **Exports of education services, English-speaking nations excluding Singapore, 2000-2005 (US dollars)**

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | growth 2000-05 |
|---|---|---|---|---|---|---|---|
| | $s million | $s million | $s million | $s million | $s million | $s million | % |
| USA | 10,350 | 11,480 | 12,630 | 13,310 | 13,640 | 14,120 | 36.4 |
| UK | 3766 | 3921 | 3891 | 4709 | 5627 | 6064 | 61.0 |
| Australia | 2259 | 2528 | 2897 | 3925 | 4872 | 5563 | 146.3 |
| Canada | 615 | 699 | 784 | 1014 | 1268 | 1573 | 155.8 |
| New Zealand | 257 | 343 | 632 | 925 | 998 | 1000 | 289.1 |
| *total of above countries* | *17,247* | *18,971* | *20,834* | *23,883* | *26,405* | *28,320* | *64.2* |

Source: Bashir, 2007, 19

In elite law, business and medicine programs of leading universities, private goods are uppermost. The scarcity of places, combined with superior income-earning and career status opportunities, ensure high private benefits for graduates. But all university programs contain an element of general education which contributes to social literacy and generates economic 'spill-overs'. Even in vocational programs, it can be argued that the key economic role of higher education is less to create direct benefits for graduates than to underpin productivity and value creation in all sectors of business and industry. Graduates acquire knowledge, most of which is a public good, and utilize that knowledge broadly and throughout their careers. They also learn how to acquire more such knowledge. Because that knowledge is a public good it is never fully rewarded in the labour markets. In other words, in both teaching and research, the indirect economic role of higher education – its contribution to the conditions of production and innovation in other sectors of the economy – is as important, and probably more important, than its role in directly creating economic value in its own right. This is because its primary activity, knowledge, is largely a public good.

**1.4 The New Public Management (NPM) and globalization.** Since the oil shock of 1973-1974 and the mid 1970s global recession there have been three major changes in the policy settings, synchronized around the world, with some lags (we might be about to move to a fourth such change in the wake of the present global recession).

The first change was the sudden halt to the evolution of the government-funded welfare state, with the adoption of monetarism after 1975. The retreat from government-led investment triggered new emphases on fiscal efficiency and diminishing the expectations of government, paving the way for the trends to self-responsibility and devolution which are still working their way through the social sectors, including higher education. 'Responsibilization'[6] fitted the times in a number of ways: the rejection of paternalism in the late 1960s youth revolt; the new emphasis on choice-making and the fashioning of oneself in consumption, fashion and careers; the rise of devolution in organizational cultures.[7] It was also associated with a partial

[6] Rose, 1999.
[7] Boltanski & Chiapello, 2005.

withdrawal of social protections and benefits associated with the welfare state, in the English-speaking countries and certain European nations, including some universal welfare and aged pension systems and free education .This fed into the next change.

The second change was the NPM in the mid 1980s, which begun in program budgeting and efficiency movements in public administration in many countries. In the NPM public administration and education are modelled in quasi-business terms. Activity becomes explicitly goal-driven. Central surveillance and direction of activity are strengthened, while at the same time the capacity of subordinate units to act is enhanced; through devolution and 'responsibilization' down the chain of command in conjunction with strategies of steering from a distance. There has been a growing emphasis on controls through accountability and audit systems, including quality assurance. In general NPM systems aim to do more with less. Key objectives of NPM reform are allocative efficiency and often, the installation of entrepreneurship. Typical mechanisms include the competitive allocation of funds and sometimes status, coupled with formula distributions that lighten pressures on central decision-making; management by budgets, targets and product formats, output targets and transparent performance management. NPM organizational forms include corporatized universities and public authorities, and a professionalized senior management led by a corporate-style CEO. Often in higher education there is a part-pluralization of revenues, with institutions or units expected to raise some of their own funding.

Perhaps the most fecund NPM regime was the 1980s Thatcher government in the UK. Many mechanisms since adopted broadly in higher education were developed there. However, there was an ideological element in Thatcher NPM that while it was influential in the other English-speaking countries, at the World Bank and in sites closely affected by the agencies, such as Chile and parts of East Europe in the 1990s, was not taken up on a universal basis. In ideological Thatcherism, otherwise known as neo-liberalism or 'market liberalism',[8] all goods produced in higher education, teaching and research, were seen as private goods and the organizational paradigm was an economic market of competing firms. This intersected with mainstream NPM in competitive financial allocations, product formats, revenue raising and an enhanced role of private sector provision. However advocates of neo-liberal NPM were frustrated by the maintenance of strong state controls (ironically, this was especially true of the UK under Thatcher with her rubric of 'free market and strong state') and in the universities, the refusal of governments and public to adopt genuine markets in first degree tuition. Quasi-markets and centrally managed competitions became more widely practised than genuine economic markets. Public utilities, transport and communications have been privatized in many countries, but privatization of health and education on a major scale have been limited to a smaller group. But neo-liberal NPM provides ideological legitimization for fiscal restraint and is variously used to cover for traditional bureaucratic rule and declining fiscal support.

The third change was globalization, meaning partial global convergence and the formation of integrated global systems, including the one-world system of scientific research and publication. While tendencies to globalization are long-standing, and

[8] Marginson, 1997.

trade has often been central to it, the current process of globalization followed the emergence of the Internet and to a much lesser extent the cheapening of air travel, in the first half of the 1990s. This in turn provided favourable conditions for both world market development and the global spread of English as the dominant business and academic language. Global convergence is associated with increased personnel mobility; widespread policy borrowing; the imagining of an increasing number of sectors such as higher education in terms of global referencing and competition; and the mimetic development of organizational forms in public administration and education. Global imitation has aided the rapid spread of the NPM and enhanced the ideological impact of neo-liberal NPM. What might be called the 'ideology of globalization' – the modeling of global convergence as a one-world market which is breaking down the barriers between countries and is dominated by Anglo-American business practices – has itself been transmitted by global processes. But the NPM and globalization are not the same process, however much they appear to overlap and to feed into each other. The NPM pre-dates globalization and was already installed as a world-wide movement prior to the Internet. We can and do experience global convergence without the NPM, for example in open source knowledge flows where free and open exchange trumps competition and product formats.

Globalization has triggered the refashioning of the nation-state as a global competition state that is increasingly focused on international comparisons and advantage and grounds its raison d'etre in higher education and other sectors in the object of raising the global competitiveness of national institutions. Globalization provides all kinds of pretexts for NPM reforms, whether or not these actually contribute to global competitiveness. Ironically, however, global convergence also provides a partial escape from the tightening national NPM straight-jacket. In higher education institutions, especially leading research universities, have become partly disembedded from the context of the nation-state. They enjoy growing cross-border relations with each other; and increasingly source ideas, personnel and money from outside national regulation. Some are accredited in foreign jurisdictions and a growing number have set up branches offshore. Internet-delivered programs are largely free of any national regulation. More importantly perhaps the global dimension provides much broader opportunities to exercise creative academic freedoms. Knowledge has always had a strongly global element and as we have seen, cross border knowledge flows have a growing significance. These are favourable conditions for enhancing the agency freedom and effective freedom of institutions, as well as freedom as control.

## 2. The Australian experience

**2.1 The settings**. Australia has 21.0 million people (2007), one quarter foreign born with an growing number from Asia, over 10 per cent in the two largest cities Sydney and Melbourne. High migration rates mean the future demographic profile is similar to the United States and younger than that of Japan and most of Western Europe. In 2007 Gross National Income was $755.8 billion US dollars, 15th largest in the world; and Gross National Income per head was $35,960 US dollars (Atlas method).[9]

[9] World Bank, 2008. In terms of Purchasing Power Parity GNI per head was $33,340.

Australia spent 1.6 per cent of GDP on tertiary education institutions in 2005. Public spending of 0.8 per cent of GDP was below the OECD average of 1.0 per cent while private spending of 0.8 per cent, mostly in the form of international student tuition fees and domestic student contributions under the income contingent repayment Higher Education Contribution Scheme (HECS), was the fourth highest in the OECD.[10] Just 45 per cent of higher education funding derived from government sources in 2007, 41 per cent from federal government. There were 1,029,846 students enrolled in higher education in 2007, of whom 976,786 (94.8 per cent) were enrolled in public institutions.[11] Rates of participation of 15-19 year olds in education are only slightly above the OECD average but Australia is a world leader in the participation rate of mature students.[12] Australia has three research universities in the world's top 100 as measured by the Shanghai Jiao Tong University Institute of Higher Education: the Australian National University in Canberra and the Universities of Melbourne and Sydney. All are in the second fifty. There are 15 universities in the Jiao Tong top 500, and ten discipline groups in the top 100, seven in the life sciences and medicine.[13] Australia is a major exporter of educational services, with 6 per cent of all cross-border tertiary students using the OECD measure, fifth after the USA, UK, Germany and France; and 10 per cent using the UNESCO data which includes English language colleges.[14] In 2007 there were 182,619 international students on-shore in Australia, plus another 68,175 offshore in transnational campuses mostly in Southeast Asia and in distance programs outside the OECD and UNESCO data.[15]

**2.2 An Anglo-Westminster system.** In its political economy, polity, organization and culture higher education in Australia remains close to the UK from where the nation and its founding universities derived (the oldest universities, Sydney and Melbourne, were founded more than forty years prior to Australia becoming an independent nation in 1901); though as with higher education throughout the world, including the UK, it is increasingly influenced by American ideas and models. Australia shares with the UK and New Zealand what can be called an Anglo-Westminster polity, in which strong state steering, with Treasury in a leading role, combines with devolution. Higher education institutions are self-managing corporate institutions; formally structured on the basis of institutional autonomy and academic freedom while influenced by governmental mechanisms, systems and requirements in many areas. In other words both academic identity and state steering are relatively well developed; though academic identity is stronger in the UK than in Australia and New Zealand.

**2.3 The Dawkins reforms**. The modernized system of mass higher education was laid down in the Murray (1957) and Martin (1964) reports[16] which established the federal government as the shaping force through its income taxing and spending role. A two tier system of universities and colleges of advanced education (CAEs) was

[10] OECD, 2008b, p. 240.
[11] DEEWR, 2009.
[12] OECD, 2008b.
[13] SJTUIHE, 2008.
[14] Verbik & Lasanowski, 2007; Bashir, 2007.
[15] DEEWR, 2009.
[16] Murray, 1957; Martin, 1964.

created. The CAEs began as largely sub-degree providers focused on liberal and vocational programs. Their role in degree programs expanded over time though they remained outside research and doctoral education. International education was run as foreign aid through the Colombo Plan though the number of private international students began to increase. These were subsidized and subject to quotas on total numbers. In 1973-1974 student tuition charges were abolished and the federal government assumed full governmental financial responsibility for higher education, providing 90 per cent of all institutional revenues. Funding, programs and policy development were coordinated by a statutory body, subject to government direction while autonomous in its day-to-day operations, the Tertiary Education Commission.

The key NPM moment occurred relatively early in the history of contemporary university reform, the 1987-1990 changes led by the federal Labor Party Minister for Employment, Education and Training, John Dawkins.[17] This was a rare case of a government successfully implementing almost the whole of a major reform program. Dawkins began by abolishing the Tertiary Education Commission which he saw as captive of the sector and a potential obstacle to the sweeping new policy. Federal programs became subject to administration by the federal public service education department under direct ministerial control. The government saw higher education as one of the keys to lifting productivity and global economic competitiveness, and enhancing the role of manufacturing and services within Australia's economic profile. There was a new emphasis on the role of universities in creating identifiable economic benefits of a private and public kind. Dawkins set out to expand the number of graduates by 50 per cent, to tie the institutions more closely to policy and the administrative machinery of government and to treat them more like businesses.

In a major departure from historical practice the Minister encouraged institutions to raise money from non-government sources. It was hoped that in future much of their revenue would come from business and industry, tying them closely to economic development. This did not happen; but outside first degrees for domestic students, tuition was largely deregulated. The first full fee international students arrived in 1987 and a growing number of postgraduate programs became market-based. Institutions were immediately forced to explore these new income-raising options; for in 1988 government grants per student were reduced by 10-15 per cent depending on institutional type. Research funding was partly separated from teaching funding and grounded in national objectives, though academic peer review was maintained as the basis for project grants; and incentives for industry-related applied research were installed. Research project funding covered only about three quarters of the actual cost of performing research. The proportion of research that constituted fundamental (basic) research under academic control began to fall.

At the same time Dawkins jettisoned free tuition, introducing student HECS charges accompanied by statements about the private benefits of higher education. HECS clawed back a quarter of the costs of tuition, later rising to half, which was a major fiscal saving, but not all economic reformers liked the scheme because it failed to establish the direct buyer-seller relations between student and university, mediated by

[17] Dawkins, 1987; 1988.

variable prices, that were advocated in market theory. The number of HECS places continued to be regulated and there were caps on HECS charges. Market-based tuition was not subject to constraints on volume but cross-subsidization from public funding for first degree teaching was forbidden. This bifurcated the political economy of the Australian system between a government planned and subsidized first degree segment (now partly funded by students through their HECS contributions); and a fully commercial, expansionary capitalist segment, in which autonomous university-controlled companies ran the activity. Over time the weight of and institutional dependence on the commercial segment was to greatly increase.

The Dawkins-driven changes unfolded in the first half of the 1990s and by the middle of that decade the Australian higher education system had been greatly transformed. The universities and CAEs were combined into an enlarged unitary university sector. The number of universities doubled. The Minister used incentives and sanctions to encourage mergers to increase size and weight. Standardized definitions for funding purposes, output measures and data collections were installed. The sector was modeled as a mini-economy, in the form of a unitary competition for teaching and research funding from all sources. In practice funds for first degree teaching were still allocated by government fiat on the basis of historical distributions, and HECS charges were closely regulated; but all institutions were made eligible for research funding, though Dawkins did not fund research capacity in the post-1987 universities at the same rate as the older institutions. The Minister also allocated funds for organizational restructuring and innovations in services and teaching provision on a competitive basis, in the process discovering that small parcels of money thus applied could trigger widespread changes in behaviour.

At the same time institutions gained a new corporate freedom to control their budgets. Capital allocations were wound in with government grants for teaching and research and institutions were no longer penalized, via reductions in public income, for raising private monies. Widespread institutional restructuring facilitated the modernized and entrepreneurial forms of leadership and organization that were encouraged by the federal government; and later the growing emphasis on marketing and non-academic services as means of competition. A notable feature of the Australian system was the creation of a largely new caste of institutional executives around the vice-chancellor/ president (increasingly tagged ‘CEO’) and the strategic and operational effective freedoms allocated to the latter.[18] In many respects the CEOs became the repository of the agency freedom of institutions. University chiefs often saw themselves as parallel to business leaders though continuing to be drawn from university ranks.

The one objective that Dawkins found it difficult to achieve was performance-related funding. This took longer than the other changes and was incomplete in execution. A comprehensive measure of research performance was developed, with a formula including research revenues, publications and doctoral student numbers. This was used to supplement government grants for teaching purposes. A parallel performance-based system was used to allocate funds for higher degree by research (principally doctoral) students. Performance in teaching eluded comparative

[18] Marginson & Considine, 2000.

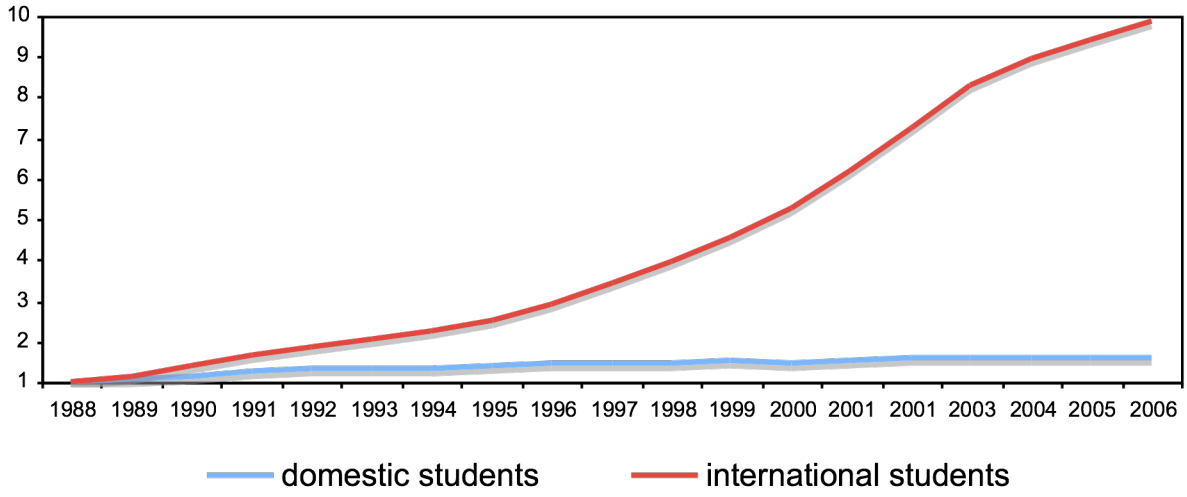
measures but in the 1990s the government introduced schemes for rewarding outstanding teachers, and supported annual surveys of the employment outcomes of graduates[19] and graduate satisfaction with higher education programs. Institutions were encouraged to adopt student satisfaction surveys within quality assurance.

Institutions were also encouraged to create output transparency and efficiency incentives in the management of academic units, triggered a transformation of internal cultures. Professional managers and executive deans centralized budget powers. The role of representative and participatory academic staff assemblies, shorn of power over resources, declined. At the same time Dawkins sought to encourage a transformation of institutional governance which continued to play out after he left the portfoilo in 1992. Institutions were encouraged to restructure their governing bodies to more closely resemble corporate boards: smaller in size, with members independent of internal institutional interests and inclusive of business and financial expertise. Governing bodies were under state government control and only some were changed along the lines of the preferred federal model. The role of staff and student representatives was abolished or diminished in some but not all governing bodies.

All of these transformations were somewhat uneven by institution. Typically the post-1987 universities moved closest to the Dawkins template while traditional academic cultures and governance survived best in the oldest and strongest research-intensive universities that later organized as the 'Group of Eight'.[20] In the latter institutions academic boards continued to play a significant non–financial role. Despite this a notable feature of the changes was the uniformity of forms and behaviours that emerged. The old binary division disappeared. All higher education institutions sought to grow and expand market share on and off shore. All adopted performance scrutiny and allocations, weakened academic governance, introduced professional management at scale, centralized authority in the CEO, and vigorously pursued non-government income earning options including the mass enrolment of international students. In 1995 full indexation of government grants for teaching was replaced by partial indexation in order to induce 'productivity savings'. Partial indexation, which became installed on a permanent basis, triggered a decline in the proportion of first degree teaching costs covered by the combination of government grants and student HECS – by the 2000s average revenues were well below full cost coverage – and a decline in the proportion of total revenues covered by government. In conjunction with the partial funding of research projects this intensified efficiency pressures and drove more vigorous commercial activity to make up for the shortfall in government funding.

[19] GDS, 2008.
[20] Marginson, 2008b.

*Figure 1.* **Growth of domestic and international students, Australia 1988-2006 (1988 = 1.00)**




source: DEEWR, 2009

**2.4 The Howard years.** Under the Liberal-National Party government led by prime Minister John Howard there was little change in the system settings and the more corporate institutional cultures that had developed in the wake of the Dawkins reforms. The logic of the Dawkins changes continued to play out, though student HECS charges increased more sharply, per student government grants were reduced by more, and international students grew more rapidly (Figure 1), than Dawkins may have envisaged. Domestic student participation flattened out and the absolute number of domestic commencements fell in some years; though this was half hidden by the extraordinary growth in international student numbers. It is likely that domestic demand was affected by the sharp decline in the value and accessibility of student assistance for living costs during the Howard years.

In 1995-2005 Australia was the only OECD nation to reduce total public spending on tertiary education. Public funding per student fell by 28 per cent in real terms.[21] On top of the effects of partial indexation and the under-funding of research, the reductions in government funds for teaching triggered a rapid increase in international student numbers. In 1990 there were 25,000 international students. By 2007 the number was 254,414, 26.0 per cent of enrolments including transnationals, the highest level in the developed world. The Under Howard the number of international students in most institutions became very large. In 2006 the largest number of foreign students at an American university was the 7115 at the University of Southern California in Los Angeles.[22] There were 13 Australian universities with more than 7115 international students in 2006, led by 17,894 at RMIT University (Table 2).

[21] OECD, 2008b.
[22] IIE, 2007.

*Table 2.* **International student enrolments and tuition revenues at the 20 institutions with largest number of international students, Australia, 2006**

| Institution | Enrolled international students (higher education only) | | | Tuition revenues from international students | |
|---|---|---|---|---|---|
| | | proportion of all students | on-shore students only | | proportion of all income |
| | | *%* | | *$s million* | *%* |
| Royal Melbourne IT U * | 17,894 | 43.2 | 7457 | 125.9 | 27.5 |
| Monash U | 17,087 | 31.2 | 11,080 | 190.7 | 18.1 |
| Curtin U Technology | 16,501 | 41.8 | 8005 | 115.8 | 23.3 |
| Central Queensland U * | 13,899 | 54.9 | 12,579 | 145.0 | 49.6 |
| Macquarie U | 10,468 | 33.6 | 9709 | 111.4 | 28.0 |
| U South Australia | 10,422 | 31.2 | 4598 | 63.0 | 16.4 |
| U Melbourne * | 10,376 | 23.9 | 10,277 | 191.6 | 16.1 |
| U Sydney * | 9680 | 21.1 | 9060 | 148.1 | 12.2 |
| U Technology, Sydney | 8954 | 27.4 | 6688 | 95.0 | 23.9 |
| U Southern Queensland | 8895 | 35.2 | 8895 | 25.4 | 15.9 |
| U Wollongong | 8620 | 39.4 | 4900 | 55.1 | 18.4 |
| U New South Wales * | 8618 | 22.2 | 8546 | 119.6 | 14.4 |
| Griffith U | 8358 | 23.7 | 7850 | 96.4 | 20.1 |
| Deakin U * | 6715 | 20.2 | 5633 | 67.5 | 15.3 |
| U Queensland | 6607 | 17.6 | 6607 | 107.7 | 11.5 |
| Charles Sturt U | 5817 | 17.0 | 2448 | 13.0 | 5.1 |
| Swinburne U Technology * | 5815 | 33.4 | 4704 | 54.9 | 17.2 |
| University of Ballarat * | 5798 | 55.6 | 4249 | 48.2 | 26.4 |
| La Trobe University | 5619 | 19.8 | 4091 | 47.1 | 12.2 |
| Victoria University * | 5547 | 27.5 | 2889 | 40.5 | 12.4 |
| All other institutions | 59,104 | 17.7 | 42,354 | 513.5 | 9.7 |
| *All institutions* | 250,794 | 25.5 | 182,619 | 2375.4 | 14.9 |

Source: DEEWR, 2008. In the present study interviews were conducted at nine of these institutions, marked thus [*].

Likewise institutional dependence on international fees also rose sharply to 14.9 per cent of total revenues in 2006 and close to 50 per cent in one case, Central Queensland University. Under Howard the private income of institutions increased more rapidly than in all OECD countries but one.[23]

According to the Reserve Bank of Australia, 'since 1982, education services exports have grown at an average annual rate of around 14 per cent in volume terms', compared to growth of 6 per cent per annum in total exports and in service exports. The estimated value of Australian education exports in 2007, including both onshore student fees and spending by students on housing, food, transport, living costs, entertainment and other items, was $12.6 billion, 39 per cent from tuition fees. Education was the third largest export sector at 5.6 per cent, behind coal 9.5 per cent), iron ore (7.5 per cent) but ahead of tourism (5.4 per cent).[24] At the same time,

[23] OECD, 2008b.
[24] Reserve Bank, 2008.

the international education program has become the main source of skilled migration to Australia. It has been estimated that approximately 40 per cent of all graduate international students apply for permanent residence.[25]

However, the remarkable growth in private income was insufficient to stem a sharp decline in the resources available to support teaching. The average student-staff ration rose from 14 to 1 in 1992 to more than 20 to 1 only a decade later.[26] Although institutions were able to sustain a roughly constant level of funding per student, the demands on expenditure increased due to the costs of servicing private incomes. Allocations to marketing, recruitment (much of it offshore), additional non-academic services for international students, special English classes, new buildings and facilities (visible manifestations of competitiveness), and quality assurance, increased markedly. This cut into the funds available for teaching and research. In other words, most of the additional private revenue had to be ploughed back into the costs of raising that revenue and could not be substituted for lost public revenues.

The Howard government introduced full cost tuition for domestic students from 1998 onwards but this remained a supplement to the HECS system and was not widely taken up. More influential was the decision to extent income contingent (HECS-style) tuition loan arrangements to full fee private sector programs from 2005 onwards, triggering a rapid growth in private institutions, albeit from a low base.

In 2007 the government quarantined part of the federal budget surplus as the base capital for a 'Higher Education Investment Fund'. This was sold as multi-billion long term funding but in reality institutions were invited to submit bids for capital projects only in relation only to the interest earnings off the fund. This constituted an approximately 5 per cent increase in funding overall. Aside from a one off doubling of research project monies in 2001 the Howard government offered little funding relief. As before, the government's new research project monies were not supported by adequate infrastructure financing and institutions that were relatively successful in competing for research grants saw the gap between funding and costs increase.

Relations between government and institutions deteriorated during the Howard years. The government maintained tight control of domestic student places, maintained the total funding for those places below real cost levels, despite a modest increase in the funding rate in 2005, and restricted institutional flexibility: for example changes introduced the same year required universities to secure government sign-off for changes between sub-disciplines in the balance of government funded student load.

**2.5 A change of government and the Bradley report.** A new Labor government under Prime Minister Kevin Rudd was elected in late 2007 and in March 2008 it set up a review of higher education policy. There was a parallel review of the national innovation system. The Innovation review reported in September and recommended the full cost funding of research. The Bradley report was released in mid December 2008. The Bradley panel recommended funding relief in relation to the rate of funding

[25] Bob Birrell, Sociology, Monash University, Melbourne, private communication.
[26] DEEWR, 2009.

of government places, research costs and student living costs. Importantly, it urged the return of near full cost indexation of government grants which had the potential to reduce the drivers of continuous expansion in education exports. However the Bradley report did not suggest changing the system of governance and regulation in a fundamental manner. Its main innovation was a recommendation for the establishment of a new federal commission responsible for the accreditation of new providers, the closer integration of universities with vocational education within a common system, a beefed-up standards regime absorbing AUQA, and the Act that governed international education. The commission was not to be offered funding powers, but over time it had the potential to evolve into a 'buffer' body something like the old Tertiary Education Commission. The Bradley committee also recommended what it called a voucher scheme of portable student-centred entitlements to funding. However it also proposed to maintain standard prices with caps, deregulating the volume of funded places but not price. The intention appeared to be to encourage the expansion of places for domestic students. However, this did not constitute a bona fide tuition market of the neo-liberal type. The government was expected to respond to the recommendations of the Bradley report in mid to late February.

**2.6 Summary of the reformed Australian system.** In many respects the Australian higher education system is a model case of NPM reform in which the strengths and weaknesses of the NPM approach are openly on display. It is not a model case of neo-liberal NPM, for while the ideologies of education as an economic market and education as the producer of solely private goods have left a mark in Australia, encouraging the adoption of competitive and quasi-market systems in many areas (research funding, international students, postgraduate vocational programs, competitive bidding for projects and innovation initiatives, etc.; and within institutions parallel competitions at the school and academic unit level) first degree education remains tightly regulated, with set prices and price signals muted by income contingent HECS loans, government subsidies and ceilings on the number of places. Research funding also remains partly funded as a public good; though it is difficult to know how anything else could be applied given the intrinsic nature of knowledge.

- Domestic student tuition at first degree level is organized and funded on the basis of a mix of government subsidies and income contingent student repayments. The number of places its fixed on an institution-by-institution basis. This is little different to the situation prevailing in much of the OECD. The level of student charges is higher than average but this is softened by the use of income contingent payments. Institutions must enroll the agreed number of subsidized students. Tolerance for error was recently broadened.
- Most domestic postgraduate education and all international education aside from a handful of scholarship places is organized and funded on the basis of expansionary commercial markets. Institutions cream off as much surplus as they can to fund domestic education and research, non-academic services and facilities. Thus in fee-based programs they attempt to minimize unit costs by standardizing production.
- Competitive academic research funds are allocated by two principal agencies, the Australian Research Council and the National Health and Medical research Council. These bodies are somewhat influenced by government-specified

research priorities but the main mechanism of allocation is academic peer review and the main criterion is excellence. Doctoral scholarships and fellowships are determined on academic merit. In addition there are government schemes to encourage research collaboration with industry.

- The government allocates a modest supplement to funds based on research performance, which at maximum is about 10 per cent of total research funding. This is a smaller scale version of the Research Assessment-based funding in the UK but without the detailed scrutiny of research outcomes.
- From time to time particular allocations are made that are conditional on competitive submission, measured competitive performance or measured compliance with policy, for example monies in relation to equity objectives, teaching quality, industry collaboration, infrastructure development and so on. These schemes create specific behaviours in the area concerned and can influence longer-term developments at institutional level. Institutions tailor their bids or their performance to what they think the government will want.
- Accountability for the expenditure of all government monies is policed strictly and in a detailed manner. Accountability is much tighter in relation to the 45 per cent government share of funds than it was when government covered 90 per cent of costs. The principal government agency in nearly all dealings with the institutions is the federal Department of Education, Employment and Workplace Relations (DEEWR).
- The established universities are self-accrediting. The accreditation of new institutions is handled by state-level government agencies.
- International education is managed by a branch of DEEWR in relation top recruitment and consumer protection matters, and the federal department of immigration in visa matters. There can be conflicting objectives, with immigration adopting a more restrictive approach to student entry.
- Quality assurance is managed by a separate public agency. In this area the regulatory touch is relatively light. The five year audits by the Australian University Quality Agency (AUQA), created originally as part of a national system designed to be credible in the international market, focus mostly on the workings of systems of self-regulation without inquiring too deeply into actual standards. Offshore activity, which was added to AUQA consideration two years ago, is policed less rigorously than onshore activity. These procedures are widely held to be inadequate especially in relation to rogue private providers and English language standards in the international student market.
- Institutions and their academic units are led by full time executives largely sourced from within academic ranks. The chief executive officer (president/vice-chancellor) usually has very considerable operational discretion although financial discretion varies in scale.
- Governing bodies have seen an overall trend to smaller size, more representatives from business and finance, and a lesser role for elected staff and student representatives. Generally, governing bodies have moved from the university community orientation to a supervisory and prudential external orientation. But there is considerable variation between institutions.
- Control of academic units is exercised by executive leaders through the budget power. For the most part academic assemblies retain a role in decisions about academic programs (though some program initiatives for the international

market circumvent their authority) but not in budget matters. In some institutions academic assemblies have little or no role in governance. In many but not all institutions academic staff retain a significant role in decisions about internal promotion, and to a lesser extent, initial appointments. The long term trend is for appointment decisions to be more affected by the institution's strategic priorities rather than the reproduction of disciplines per se.

- Corresponding to the decline in the role of academic staff in governance, the proportion of teaching staff who hold tenured or even full time posts has steadily declined – more than half of all teaching is by casual employees.
- In general, the academic staff in the happiest position are those with research track record and research grants. There is more scope for exercising academic freedoms and taking initiatives, including initiatives, in research activity than in teaching programs.
- Internal funding allocations tend to be competitively driven and are often linked in part (and sometimes in full) to performance measures. Those disciplines in the happiest state financially, able to appoint young staff, are (1) those strong in earning non-government incomes, primarily business studies; and (2) those strong in attracting competitive research funding.

## 3. Conclusions

**3.1 Intended consequences.** The outcomes of NPM reform in Australian higher education are a precise product of the system of incentives and prohibitions, primarily the former. Institutions are more tightly managed, a professional executive culture has been installed successfully at all levels and a performance culture is nearly universal across institutions and the system. NPM reform has created greater transparency and accountability; established a more entrepreneurial culture at both academic unit and institutional level in which institutions exercise strategic initiatives in international matters, in research programs and in the installation of new administrative technologies (there is less scope to do so in the education of domestic students); and installed strong efficiency drivers in every sphere. In relation to efficiency, the principal macro driver has been the annual increase in the scarcity of public funding. Perhaps the system of regulation is too dependent on this single mechanism.

In relation to the effectiveness of policy, public financing and associated accountability is highly attuned to secure given objectives such as the program mix. However public policy, though mostly less ambitious than formerly, has difficulty in securing traction in areas such as equity objectives which depend on a broad-based cultural change rather than driving behaviour through formulae, mechanisms, targets and incentives and the other mechanisms of political economy. It is likely that the government has been successful in diminishing attention to the role of and potential of higher education to create national and global public goods. (Many would see this as a negative consequences, but it is an intended consequence).

There is no evidence that the quality of teaching has advanced in the last two decades, despite the more overt attention that policy and management now gives to

teaching. A rising student-staff ratio can be interpreted as a sign of productivity growth, but may suggest that the material conditions of good quality teaching have deteriorated. The focus on research outputs as one of the drivers of funding has enhanced the quantity of research publications, which has increased more sharply than in the USA, Canada and the UK.[27] On the other hand evidence of trends in Australia's comparative citation performance is mixed and the proportion of Australian research published in lower status journals appears to have increased.[28]

The weakening of academic cultures in some if not most institutions was a consequence intended by reformers, who saw traditional academic cultures as obstacles to the installation of a more flexible, responsive and strategic approach. However this trend has probably contributed to a reduction in academic capacity, which is presumably an unintended consequence.

**3.2 Unintended consequences.** The pronounced increase in focus on short-term indicators, and immediate revenue needs, does not necessarily lead to optimum patterns of development. Development has been unbalanced in other ways. International education has undertaken explosive while domestic participation has been stagnant and the lower level of student living support (consistent with the ideology of higher education as a private benefit) has driven a pronounced increase in students' working hours during the study semester that seems to have contributed to a greater level of domestic student disengagement.[29] Disciplines with the capacity to generate international student revenues, such as business, are now considerably stronger in academic terms than the core sciences and humanities. Scarce additional monies have been disproportionately allocated to non-academic services, and buildings and facilities, which have direct pay-offs for competitive position, more than to teaching and research capacity where the positive effects are less visible in the immediate sense, and the long term costs are less flexible. In some but not all institutions there has been a significant growth in the proportion of non-academic staff to academic staff.[30]

It is clear that Australian higher education is competitive in relation to first degree international education but Australia is not a strong performer in the global doctoral market, which is a scholarship market not a fee-based market; and while it has good broad-based research capacity, its leading research universities are not as strong as those of comparators such as Canada and the Netherlands. The long-term decline in domestic teaching capacity may threaten Australia's position in the teaching market.

**3.3 The questions before the conference.** Brief answers to the panel questions are as follows:

*1. Compared to other countries' experiences, what are the characteristics of higher education reform of your country?*
Through-going NPM reform notable for the extent to which institutional behaviours

[27] NSB, 2008.
[28] Butler, 2003.
[29] James et al., 2007.
[30] DEEWR, 2009.

and cultures have been transformed ,and for the similarities of many behaviours across all institutional types, i.e. homogeneity. High dependence on funding reductions rather than subsidies to generate policy outcomes. High dependence on automatic formulae and competitive pressures rather than expert judgement. Quantity more than quality incentives. Strong institutional executives, with mostly effective steering functions. High volume commercial markets. More weakening of academic cultures than in some English speaking and European nations; though Australian academic culture remain robust in some institutions and disciplines.

*2. Can you say that efficiency and effectiveness in education and research have been enhanced by current higher education reform?*
Efficiency, yes. Effectiveness in relation to accountability and NPM-instigated behaviour change, yes. Effectiveness in relation to the first degree foreign student market, yes. Effectiveness in relation to public goods and long-term capacity in research and teaching, no. Effectiveness in establishing a richer more multiple international engagement, no.

*3. Do you think that higher education reform have made the winners and losers among institutions, administrators and faculty members?*
Policies and funding formulae that are designed to reward excellence and performance on grounds of efficiency, for example in research funding ,do not have the same outcome as policies designed to build capacity where it did not previously exist. In Australia the market weaker institutions have struggled. They depend on public funding to build new capacity, for example in basic research, and they are less well placed to compete for both public and private monies. Executives have a greater scope for action, though the position of most administrators has changed less. Academic staff has less authority and budgetary power within institution, and probably on average less scope to shape teaching programs, though it is unclear whether and to what extent their capacity to take initiatives in research has been weakened.

*4. Has public funding to higher education decreased recently in your country?*
Yes, very substantially. See above text.

*5. If so, how is the balance between less public money and the demand for world competitiveness of institutions made? What are the other sources to compensate with?*
This is a very good question and the crunch issue for the Australian system. The Australian government would argue that Australian institutions pay for both the augmentation of domestic capacity, and cross-border effectiveness, by generating export revenues at scale. The problem with this argument is that the international market has been built not on the basis of publicly-generated capacity but public under-funding, and this is eating into longer-term domestic capacity. Moreover, the profile of international activity is narrow and lopsided. Many argue that Australian higher education is unable to give enough attention to international doctoral education, longer-term research linkages, student exchange and the movement of domestic students offshore, and also foreign aid through post-secondary education and collaborative research on common global problems, because of the need to focus single-mindedly on generating export revenues.

*6. How different does recent financial crisis influence to higher education institutions and system?*
It is too early to say. The demand for domestic student places is increasing, possibly because of a decline in income forgone. Revenues from endowments and investments are down but that is a relatively small part of total revenues. The effects on the international student market are unclear. The effects on government funding are unclear – the government may decide to increase its investment in education ad research to facilitate longer term recovery, or it may postpone funding increases.

*7. How is accountability to higher education achieved on the institutional level and system level?*
See above. Detailed reporting on financial and legal compliance, including revenues from all sources not just government, by institutions to DEEWR. Transparency of student enrolment and completion data, transparency of research outcomes. Because government itself directly manages institutional accountability a further stage of system accountability is redundant.

*8. How do you predict the direction of future higher education reforms, which areas and how will they be done?*
This writer senses that the extreme NPM system settings have reached their use-by date, and the cost in terms of attenuated capacity and the lack of intra-system diversity, and too narrow an international mission, is becoming increasingly apparent. It is less clear that government realizes these limitations have been reached. It is likely that in the wake of the Bradley report there will be some funding relief and possible that the indexation of government grants will be largely restored. The latter, if it occurs, would reduce the extreme efficiency pressures and the need to increase international enrolments year by year. Full funding of research costs, which is also possible but less likely given the fiscal climate, would have a similar though less general effect. Another possibility is a downturn in the international market that would cut heavily into institutional capacity. In that circumstance government may alter the system settings to increase public funding.

**3.4 The NPM reforms in Australia in comparative context.** In all the Anglo-Westminster higher education systems there has been a shift from legally-based systems of direction and control to the use of resource-related mechanisms and incentives. In this process the policy compass of government has narrowed. Increasingly responsibility for the quality of teaching and research and for a broad range of formerly national policy outcomes, including some of the public good contributions of institutions, has been passed down to the institutions, left to Adam Smith's 'invisible hand' in the competitive higher education market. This has reduced the regulatory burden on government while enabling it to tighten control and steer with greater precision using its chosen funding formulae and accountability controls.

As in the UK and New Zealand, in Australia public funding per student has been reduced, there has been a pronounced shift to private funding, education exports play an important role, and the national system of quality assurance has evolved in line with the needs of the export industry. As in the UK, links with the community beyond

higher education are not as well developed as in the USA, although the professions play a role in accrediting programs, and public and community engagement are increasing. Within institutions budget management, executive steering, institutional management are highly developed, much the same )but perhaps more so) than in the UK. In its use of financial incentives, steered devolution, competitive allocations, output targets and performance management, institutional management parallels national system management. Compared with the UK, in Australia there is less emphasis on global research performance and on maintaining and augmenting research quality in the leading institutions, and academic cultures are weaker viz a viz internal executive, especially in the newer universities founded after the Dawkins reforms of 1987-1990 (see below). Compared with the UK and New Zealand the central state is not quite as dominant or as comprehensive across the policy issues; in part because Australia has a federal system and while the national government is dominant in higher education funding and through that, policy, the state governments still exercise a role in broad-based accountability, prudential supervision and the accreditation of new private institutions. However, in one respect national steering is more direct than the UK, in that in Australia there is no body like the UK Higher Education Funding Council to act as a 'buffer' between government and institutions.

In the Asia-Pacific and to some extent in Western Europe and Latin America, the respective and intersecting effects of the NPM and global convergence are playing out somewhat differently to the English-speaking nations and the other individual nations closely shaped by neo-liberal policy agendas. With the significant exceptions of Japan and Germany, the leading nations in the Asia-Pacific and Western Europe have eschewed the full fledged neo-liberal position and supported higher or at least growing levels of public investment approaches. Examples include China, Singapore, Korea, China Taiwan[31] and the Nordic countries. Germany and France have both announced major new programs of investment in higher education and the Lisbon strategy ties each country in the EU to an R&D spending target of 3 per cent of GDP. The example of China, now remaking itself as a knowledge economy on a gigantic scale and at a rapid rate, may generate a response from the United States and eventually trigger a major lift in public investment across the board, relegating neo-liberalism to the past. If so, however, some form of NPM will still be with us. The nPM has proven to be an effective framework for grounding efficiency objectives but it could also be developed as a medium for regulating new investments.

**3.5 Implications of the NPM reforms for freedoms in higher education.** The NPM has mostly negative connotations for the agency freedom (roughly, 'identity') of academic workers. The main problem lies in the installation of objectives other than knowledge-building, for example the imposition of institutional interest, managerial definitions of the knowledge for example output measurement), commercial interest in research, external post-hoc evaluations that are used to drive changes in programs and priorities. On the other hand, the agency freedom of institutions and executives might be enhanced, to the extent that more autonomous and enterprising institutions are encouraged by these policy settings to chart their own strategic course, especially

[31] NSB, 2008; Li at al., 2008.

internationally, gaining self-determining identity thereby. Some universities in the NPM era have done this successfully, such as the National University of Singapore.

The NPM is less pejorative for freedom as control in Sen's sense, that is freedom from constraint or 'negative freedom'. Autonomy can be enhanced in quasi markets and through self-controlled quality assurance. Thus commercial markets may confer on institutions or research groups the enhanced independence that comes from having their own income. On the other hand there maybe a trade-off in through reduced control over the contents of the work, reducing agency freedom. On the other hand, NPM techniques that shift the locus of control away from institutions altogether, such as external audit or contracts with government, can reduce control freedom.

The implications for NPM for freedom as power are more negative than positive. The trend is less clear-cut than in relation to agency freedom, and it depends which higher education actors we are talking about. One characteristic of NPM systems, especially those that rely on competitive markets, is to differentiate freedom as power between different agents within a common set. Competition, markets, commercialisation and performance-driven funding create a win/lose distribution in which the winners end up with more freedom as power than do the losers. The effects vary by individual and to an extent also by field of study and by institution. Entrepreneurial faculty gain freedom of power though only if they succeed. Faculty in elite universities experience greater continuity within academic cultures, so enhancing their agency freedom; and may gain more and wider strategic and resource-based options in commercial markets and academic quasi-markets, so enhancing their freedom as power.

**3.6 Implications of the NPM reforms for the role of higher education in the knowledge economy.** In research the most important economic roles of higher education are the production and dissemination of open source knowledge, or 'open science' as the OECD calls it, and the training of research labour. The OECD also now argues that higher education institutions are less efficient than industrial and R&D companies in developing IP and should leave it to the market. If higher education institutions put too much emphasis on trying to profit from IP, this can slow dissemination and retard the rate of economic innovation itself.[32] Consider what the OECd said last year about just one aspect of the NPM in research, the use of the product format, the 'project' in research management.

> The shift to project-based research funding in TEIs raises a number of issues that need to be considered in relation to the long-term development of the research and innovation system. Competitive funding may promote more ad hoc and short-term research in cases where evaluation mechanisms and incentive structures focus on quantifiable and immediate outputs'. As a result, researchers may be reluctant to engage in research that will not produce results that can be demonstrated over short time-spans. In addition, precisely because project-based funding is competitive, sustained funding is not guaranteed, which

[32] OECD, 2008a, Chapter 7, especially pp. 102-103. The decision in 2008 of the Harvard Faculty of Arts and Science to open free Internet access to its research and scholarship was highly significant. For more discussion see Marginson; 2009; Peters, Marginson & Murphy, 2009.

> may impede the autonomy of researchers working in controversial fields. If project-based funding has a short duration, it may also mean that researchers need to spend time preparing applications to secure funding on a more frequent basis. Atkinson (2007: p. 19) remarks that young faculty in particular spend an excessive amount of time preparing project proposals. Liefner (2003) found that competitive or performance-based funding could have an impact on the type and field of research because some academics avoided research with riskier outcomes. Likewise, Geuna (2001: p. 623) notes that short-term research and less risky research may reduce the likelihood of scientific novelty'. Furthermore, Geuna and Martin (2003: p. 296) argue that research may become homogenized' because safer' research is rewarded. Morris and Rip (2006) point out that the stage of a researcher's career needs to be considered in relation to the type of research undertaken. Some of the questions raised are: —does the researcher need quick results to bolster his or her next job application? Is he or she senior enough to get a five-year rather than a three-year grant? (Morris and Rip, 2006: p. 256), and these questions are pertinent in the context of project-based funding.[33]

This is a significant critique. It suggests that it is time to rethink the implications of the NPM in research, to the extent that NPM systems may be limiting autonomous intellectual freedoms, creativity, the capacity to innovate and especially the capacity to generate intellectual breakthroughs of the unplanned and counter-intuitive kind. A similar though more qualified caveat applies to teaching. Because teaching involves knowledge and partly produces public goods, if it is modeled and organized as a market commodity part of its economic and social value will be lost.

These conclusions flow from the nature of knowledge. Higher education is an unusual industry in that its central object, medium and means takes the form of a public good and its policy and management always must be ordered with this in mind. This is understood in the American research universities, that are key players in the innovation cycle in the world's leading knowledge economy. But it is not understood in those policies that imagine higher education and research in terms of orthodox business models, product formats and bottom lines. It is one thing to require transparency and efficiency, theses are indisputable objectives. It is another to model higher education solely as a tradeable good without spill-overs or indirect effects. We will need to move beyond this if policy and management is to optimise the economic and social contribution of higher education in the global knowledge economy.

These arguments have been raised by the government's Productivity Commission[34] among others, but are not yet accepted in Treasury. Treasury sees higher education primarily as a source of export dollars rather than a source of capacity in the knowledge economy. Changing that perception is key to moving beyond the NPM.

[33] OECD, 2008a, p. 176.
[34] Productivity Commission, 2007, p. xxiii..

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