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The Australian university as worldwide player: Regional research powerhouse, or global polytechnic?

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Higher education is a highly globalised sector. Education exports draw \$40 billion from two million students worldwide. Cross border activity is multiplying: collaboration in research, jointly badged degrees with Asian universities, off-shore campuses.

Where are Australian universities going after two decades of globalisation? How good are they at what they do, in international terms? And how will the major reforms engineered by Federal Minister Brendan Nelson impact their global position?

The Nelson changes have generated rapid growth in full-fee domestic student places, underpinned by low cost publicly-supported student loans (FEE-HELP). The loans have been extended to approved private institutions, guaranteeing them an economically viable future for the first time; and the government has signalled its intention of loosening the barriers to private universities and foreign providers. These changes are remaking the Australian university sector. It is a good time to take stock.

The three elements that will decide the future of Australian universities are (1) their global position, (2) government funding and regulation, and (3) their own efforts. This article focuses on the global position/positioning of Australian universities, just as important as the Nelson reforms in shaping their future. The key issue, though, is what happens at the intersection between the global and the national.

The global environment is highly complex, it is early days in the life of the Nelson system, and much of what follows is speculative. Nor will everyone agree with what is said. But healthy discussion, disagreement and debate can only be welcome.

The Global Position

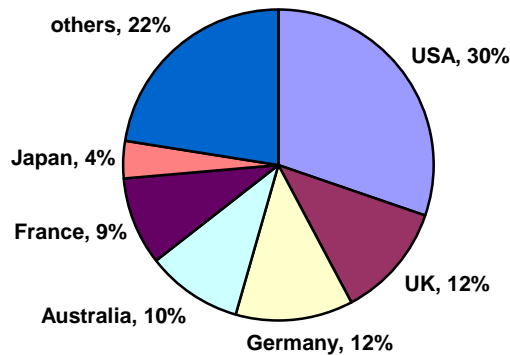
How do Australian higher education institutions stack up compared to universities of other nations, in the provision of degrees in the global market, and in research?

The global market in teaching/degrees for undergraduate students and coursework postgraduates: Australia is a high volume exporter of international education; provided on a full-fee basis as in the UK, New Zealand and parts of Asia (though not the USA, Japan and much of Western Europe); and conducted as a commercial industry. It earns the nation \$5 billion per year in student fees and other expenditures by international students, and provides universities with 15 per cent of their incomes. International students are now 20 per cent of all enrolled students. This is exceptionally high: the ratio in the UK is 10 per cent, in the USA 4 per cent.

The rate of growth has also been extraordinary. There were 24,998 international students in Australia in 1990. In the 1990s numbers grew at 15 per cent a year and Australia emerged as a major export nation. More recently, it continued to make hay as cross-border student mobility grew. Between 2001 and 2002 the worldwide number of foreign students grew by 15.4 per cent to 1.9 million, while the number in Australian universities rose by 17.7 per cent to 185,000. More than a quarter of Australia's international students are offshore in branch campuses of Australian universities or distance education programs; 85 per cent are from East and Southeast Asia, principally China/ Hong Kong, Singapore, Malaysia and Indonesia. From the last three nations Australia takes in more students than does the much larger USA. Australia also takes in half the number of students from China as does the USA; though it is much less strong than the USA in India, Japan and Korea.

In 2002 Australia was fourth largest exporter, with 10 per cent of all cross-border students, behind only the USA (30 per cent) and the UK and Germany (12 per cent).

Figure 1. Worldwide distribution of international students enrolled in tertiary education, by country of study, 2002



Note: Two thirds of Germany's 'international students' are actually the children of migrant workers not granted citizenship. Australia is really third largest export nation
Source: OECD, 2004

In 19 Australian universities there are more than 5000 international students: the largest is Monash with 15,996 in 2003. To put Table 1 in global perspective, the largest foreign student enrolment in any American doctoral university is the 6647 at the University of Southern California. Australian universities have built considerable expertise in marketing, recruitment, off-shore negotiation and non-academic student servicing. Their business practices in education must be reckoned at least the equal of any other export nation. They have become more competent in Southeast Asia and China and many are now profoundly engaged in the region, with spin-offs for collaboration and research extending well beyond the fee-based business, though lack of language skills remains a handicap. At the same time all Australian universities are dependent on revenues from the global market and five derive over 20 per cent of revenues from this source, a high level of exposure.

Table 1. Largest Australian providers of international education, 2003

University and State	Number of international students	International student fee revenues	Proportion of all uni revenues
		\$s million	%
Monash (Victoria)	15,996	138.3	17.9
RMIT (Victoria)*	14,024	111.9	21.7
Curtin (WA)*	13,624	95.0	24.2
New South Wales (NSW)	10,179	118.6	16.0
South Australia (SA)*	9892	49.1	16.0
Sydney (NSW)	9391	102.2	11.7
Central Queensland (Qld.)	8916	78.2	38.2
Melbourne (Victoria)	8821	137.3	14.9
Charles Sturt (NSW)*	8558	12.3	6.0
Western Sydney (NSW)*	8276	39.1	12.6
Macquarie (NSW)	7879	69.8	22.8
Wollongong (NSW)	7669	49.1	20.7

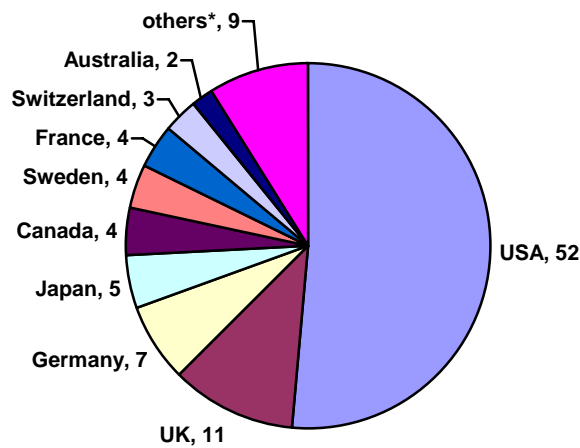
* more than 40 per cent of international enrolments offshore

Source: Department of Education, Science and Technology (DEST)

Research: Australia's global position in research is not as strong as in high volume commercial teaching. The Shanghai Jiao Tong University Institute of Higher Education provides data on comparative research performance, using both quantity and quality measures. Australia has 14 of the world's top 500 research universities, and eight of the top 300 research universities: five 'sandstones', the universities of Sydney, Melbourne, Queensland, Western Australia and Adelaide; plus their three modern cousins, the Australian National University (ANU), New South Wales and Monash. Australia has only two of the top 100 universities. The ANU, which specialises in research and international links, is ranked 53rd. Melbourne is at 82.

The list of top 100 research universities is dominated by the United States, followed by the UK. Canada has four of the top 100, twice the number of Australia.

Figure 2. Best performing research universities by nation, 2004: number of universities in the world's top 100 research universities



* Netherlands 2; Italy, Israel, Denmark, Finland, Austria, Norway, Russia all one each
Source: Shanghai Jiao Tong University Institute of Higher Education

How well is Australia performing in university research compared to its economic capacity to support research? In Table 2 economic capacity is measured as total GDP multiplied by GDP per head (i.e. $GDP^2 \div \text{population}$), which takes in both the absolute size of the economy and the intensity of its resources. Adding together each nation's economic capacity gives us a world total index of economic capacity; and comparing a nation's share of world economic capacity to its share of the top research universities tells us how it is performing relative to capacity. Australia's share of the top 500 research universities (2.8 per cent) exceeds its share of worldwide economic capacity (1.7 per cent). The nation has a broad spread of research capacity and 'over-performs', though it is less strong in the top 100 (2.0 per cent), and overall is outperformed by the UK, Canada; and part of Western Europe.

English language nations ought to be above-average performers in research given that English is now the one global language used in research. The UK is particularly strong in research. Its global performance is highly efficient relative to the level of public expenditure, strengthening the argument for the adoption in Australia of a UK Research Assessment Exercise (RAE)-type allocation of research funds, which concentrates research resources on the basis of quality not just quantity of performance. The UK maintains its highly productive research infrastructure in a

unitary university system similar to that of Australia, combining traditional universities with former polytechnics and partly supported by international marketing.

Table 2. National economic capacity compared to national research performance (as measured by the proportion of the world's top 500 and top 100 universities)

nation	proportion of world economic capacity	proportion of world's leading research universities:	
		top 500	top 100
	%	%	%
USA	42.6	33.9	52.0
UK	4.6	8.4	11.0
Germany	6.5	8.6	7.0
Japan	10.7	7.2	5.0
Canada	3.0	4.6	4.0
Sweden	0.7	2.0	4.0
France	4.5	4.4	4.0
Switzerland	0.7	1.6	3.0
Australia	1.7	2.8	2.0
China	3.4	1.6	0

Source: Shanghai Jiao Tong University Institute of Higher Education

In order, the nations performing better in research than economic capacity suggests are Israel, Sweden, Switzerland, the UK, Netherlands, Canada, Finland, Denmark, Singapore, Australia, Germany, New Zealand, Hungary and Belgium.

Nations performing in research about on par with economic capacity are Austria, Norway, Chile, France, Hong Kong China, South Africa and the USA.

Underperformers include Ireland, Brazil, Japan, India, Portugal, the Czech Republic, Russia, Italy, Korea, Spain, Poland, Greece, China, Argentina and Mexico.

Of the nations with stronger research universities than economic capacity would suggest, all but one maintain a higher education system consisting predominantly of public or quasi-public sector institutions, mostly doctoral universities, drawing the majority of their funds from government (this was Australia's approach until recently). Throughout the world capacity in 'blue sky' research is dependant on public funding and planning, more so if the goal is to maintain broad-based research capacity across a national system. Nations with many teaching-only and/or private institutions tend to under-perform in research. (A worse-case scenario is that this group might include Australia in future, as it is one possible outcome of the Nelson reforms).

The USA is exceptional. It has a highly differentiated higher education sector, with about 100 research intensive universities, another 100 or so universities with

areas of research strength, and 3000 plus teaching only institutions; and 24 per cent of enrolments are in the private sector. Research resources have become extremely concentrated, not through a publicly regulated mechanism of research funding as with the British RAE but through the long-term dynamics of competition in a status market underpinned by student loans. Mobile high scoring students, the leading researchers, research funding agencies, and philanthropic and other donors are all focused on the leading universities where prestige and social opportunity have become centred. The leading universities exercise extraordinary global dominance but the USA lacks the breadth of research capacity that its economic capacity would suggest: in this respect it is weaker than all other English-language nations, including New Zealand. Relative to economic capacity Australia is stronger than the USA at the level of the top 500 universities while weaker at the level of the top 100.

The case of the United States is significant for Australia because the Nelson reforms embody a parallel tendency to concentrate status, resources and capacity in a smaller group of elite institutions. Significantly, though, Australia lacks the wealth for philanthropic and alumni funding support on the American scale.

Doctoral education: Australia has a lesser role in international doctoral education than either its role in international degrees or its research capacity would suggest. On 4.5 per cent of Australia's international students are research students, much lower than the USA (16.6 per cent) and UK (10.0 per cent) and some European nations. Australia provides little scholarship support for international doctoral students, and universities have a disincentive to enrol fee-paying doctoral students given that in some laboratory sciences the funding rate for domestic PhDs is double the level of feasible international student fees. Thus Australia attracts few of the highest calibre international students; those who are most likely to become academics, or national leaders in government and business. In the USA more than 40 per cent of international postgraduates receive university scholarships and foreign research students make a major contribution to national research effort.

In sum: Australia has 10 per cent of the world's international students. It specialises in high volume medium quality standard cost degree programs, particularly in business studies and associated technologies. The export industry is outstanding, a tribute to the business acumen and organisational flexibility of Australian universities. Australia also has 2-3 per cent of the world's leading research universities. It punches above its weight in research, but is behind the UK and

Canada and lacks top-flight institutions. There are few synergies between Australia's export strength and its global research role. The strongest research university, ANU, has a minor player in fee-based markets. Most Australian research collaborations are in North America, UK and Europe but fee-paying students come from Asia. Australia is weak in international doctoral education where one would expect the optimum nexus between international research and teaching. There is limited scope for universities to bring their research capacity to bear on improving the quality of high volume standardised coursework programs provided to middle level students.

UK higher education is similar in many respects but has evaded the trade-offs between research capacity and commercial development, and between quantity-driven and quality-driven globalisation, that bedevil Australia. The danger for Australian universities is that aside from ANU, which has taken the academic high road, they have become boxed into a segment of the global market where international education is carried more by business strength (including brand marketing) than academic strength (the educational fundamentals of reputation).

In the longer term this could undermine Australia's export position as well. The Australian business model can be imitated. Emerging providers of international education in Singapore, Malaysia and China substantially undercut Australia's costs. Importer nations have incentives to reduce imports; while many OECD nations, facing a massive demographic downturn in the 17-30 age group, will have strong incentives to recruit international students and some will subsidise foreign enrolments

While non-academic customer servicing can be improved, many universities have been on that path for some time. Student security requires attention, as will be discussed below. However the ultimate sources of quality differentials in international education are academic: on the one hand remaking curriculum and pedagogy as an encounter with cultural difference (which is uncharted territory), and on the other hand research (more familiar). In the end national research capacity and cross-border research linkages will be essential to Australia's comparative advantage in the export market. Research is *the* measurable indicator of status in higher education. Australia's research standing will determine its capacity to attract high quality international students and staff; and a strong research infrastructure can underpin a broad range of quality teaching and academic development strategies.

Decline in global mobility?

Issues of quality in the global market have suddenly become more pertinent. After a long period of high growth patterns of student mobility appear to have changed. New international students in Australia fell in 2004. Final data are not yet available but it appears that total international enrolments has downturned sharply in 2005.

The USA: The first downturn was in the United States. The first full year after 11 September 2001 (2002-2003) saw sharp declines in students from the Middle East, Muslim South East Asia and China. The next year in 2003-2004 saw a fall of 2.4 per cent in the total number of foreign students in American higher education; with a 5 per cent drop in undergraduates. Graduate students increased, but mostly at Master-level institutions. Many leading research universities are concerned about the decline in foreign graduate research assistants. Students from the Middle East fell by 9 per cent, notably in nations close to Iraq: Saudi Arabia 16 per cent, Kuwait 17 per cent, Jordan 15 per cent. China fell by 5 per cent and there were larger declines from Muslim Indonesia (15 per cent) and Pakistan (10 per cent), and from Thailand (11 per cent) and Japan (11 per cent). Students from Germany and France, nations that disagree with American foreign policy, both fell 6 per cent. On the other hand there was a 7 per cent increase in students from India, America's largest source of foreign students, and smaller rises from Mexico, Canada, the UK and Korea.

The downturn in students entering the US has been explained on the supply side by the difficulty of obtaining visas, especially for Middle Eastern and Asian students, the war, and a domestic climate more hostile to Muslims. What is happening on the demand side is less clear, especially in the case of China.

Australia: Between the Australia and the USA there are both parallels and differences. Australia's numbers from its geographic neighbours, Indonesia, Malaysia and Singapore, have fallen sharply. Numbers from China are holding up better.

Why? Many explanations have been advanced. All are unresearched. On the supply side, security factors are working against mobility as in the USA – restrictions on student visas, and Australia's involvement in war in the Middle East. On the demand side, there is the increased cost of applications, the appreciation of the Australian dollar, and the rising cost of living (especially inner-city housing) which has more than doubled since 2001. Australia has lost much of its earlier cost advantage vis a vis other English-speaking nations and is more expensive than Asia. Australian

universities can no longer market themselves as the 'cheap option'. The effects of European exports, foreign branch campuses in Asia, domestic capacity in Malaysia and Singapore, the pull of business opportunities in China, and China's role as an education exporter (it now has 76,000 international students) are less clear.

Student security: What about the cultural climate in Australia, especially for Muslim students? Recent research in a Monash Institute for the Study of Global Movements-supported project found that students from Indonesia and Malaysia, especially women wearing the *hejab*, are more likely than most international students to experience loneliness, isolation, and discrimination. We do not know whether these factors have worsened since the global polarisation following 9/11.

Table 3. National variations in problems experienced by international students, Australia 2004: proportion answering 'Yes' to the questions

	India (n=20)	China (n=20)	Indonesia (n=22)	Malaysia (n=11)	all students (n=134)
	%	%	%	%	%
'Does English create difficulties for you in your academic work?'	0	65	40	40	35
'Have you experienced periods of loneliness or isolation in Australia?'	60	55	80	75	69
'Have you experienced discrimination or bad treatment in Australia?'	40	55	65	65	51

Source: A. Deumert, S. Marginson, C. Nyland, G. Ramia and E. Sawir, Monash Institute for the Study of Global Movements-supported research project

Further, 10 per cent of students interviewed answered 'no' to the question 'Do you feel safe and secure while in Australia?' All were Muslim women, South Asian men, or women and men from East Asia. Student security is an under-recognised issue, perhaps because it always worked in favour of Australia. In 2001 a logistic regression analysis of choice-making by Chinese students by Tim Mazzarol and colleagues found that a safe environment was the most significant predictor of intentions to choose Australia over other nations. Similarly, focus groups in Indonesia and Taiwan found that many parents sent their children to Australia not the USA because Australia was deemed safer. The question is whether this is still the case. In both the USA and Australia the downward trends in numbers are strongest in undergraduate education, where parents rather than students are the main decision-makers about mobility, and the natural influence of security factors is maximised.

Enrolment trends in the UK and Europe will help clarify whether the post-9/11 trade-off between security and mobility, apparent in the USA, is operating at the global level, affecting the demand for cross-border education as well as the supply. Though Asia-Pacific demand for education will grow by leaps and bounds, demand for cross-border education cannot be taken for granted. In Muslim Southeast Asia and in East Asia there is potential for the replacement of foreign undergraduate education by domestic undergraduate education more secure in pastoral and cultural terms. Student security will need to be inserted into the emerging 'quality' agenda.

After Nelson

Following the Nelson reforms the 'sandstone' universities and their modern cousins (the 'Group of 8') are best placed to draw full fee income, though others will do so in selected areas. The Go8 will use it to strengthen staff and research in strategic fields such as life sciences, biotechnology, nanotechnology and geo-science. It is likely that a British RAE-type system will be introduced to regulate research funding and if so these allocations will centre an increasing proportion of public funding on the Go8. The Go8 will benefit simultaneously from stratification/ concentration of resources in two forms: an American high fee tuition market, underpinned by publicly-subsidised loans (quasi-vouchers) as in the US, and a British-style publicly funded RAE.

This is going to change the system fundamentally. Australian higher education has a resilient culture of uniformity. As in the UK, since the collapse of the binary divide institutions have differentiated vertically on the basis of a common model – the comprehensive doctoral university - rather than differentiating openly by function. All institutions have had the same incentive to be all things to all people and all but the sandstones have had strong incentives to expand in size – in fact in the case of international students, the sandstones have been volume maximizers just like the rest. The vertical differentiation has been sharp in terms of status and resources, and especially in research roles. But it has not extended to hierarchy of missions. Higher education is always something of a social status competition between students, and between universities, even when it's free of charge. Being a status market it has a natural tendency to polarize between a predominantly research focus, and a predominantly teaching focus (unless the polarization is checked by government policy/ funding/ regulation e.g. egalitarian distributions of 'blue sky' research funding).

This polarization is evident in mass higher education systems the world over. Everywhere we find high status research universities, low status volume maximisers, often private sector and/or commercial, and institutions in between (like the newer pre-1987 universities in Australia), struggling for a role. That's higher education. Always a hierarchy, always riven by status claims, always insecure in the middle.

In every national system, there is a limited number of high status universities with high value degrees and globally competitive research across the board. These institutions draw their status from their research, and from their power to attract students and academic staff. Each driver reinforces the other, and reproducing elite status is much easier than breaking into the elite. As you know, elite universities normally stay elite universities even when they are badly managed or the central executive is weak – a classic case is Cambridge in the UK. However in a status market there is room only for a small number of leading providers and it is very hard to break into the circle, though it is possible for some to do so in the longer term.

The Dawkins system – indeed in differing ways the long Australian tradition, back to the Murray report in the 1950s – modified the potential polarization of the national market. However, the Nelson system actually enhances the natural polarization. As you know the Nelson system partly overturns regulated uniformity, reinforcing the systemic polarization and specialisation natural to competition in higher education. The main move is full-fee places underpinned by FEE-HELP, which ensures that in future institutional status, including research performance and prestige – rather than offshore business acumen – will provide the main resource edge. This strengthens the relative advantage of elite institutions.

The sandstones and their modern cousins will become less dependant on high volume full fee international enrolments. For the sandstones their institutional status - derived partly as inheritance, partly from research performance - will be a more important source of discretionary resources than global business acumen. They will be in a better position to pick and choose the most able international students, supporting some with scholarships funded by the new domestic fee revenues.

The newer universities, especially regional institutions, will be unable to compete in the full-fee domestic student market - as for example Central Queensland University built itself up in the international student market, earning almost 40 per cent of its revenue that way - and will adopt another role trajectory. They will remain dependant on high volume international enrolments, but will be handicapped by

downward pressures on their global status, particularly if RAE-based research funding pushes them into largely teaching-only functions. It all suggests two different global strategies, in place of the more homogenous strategies of the past; though no doubt some institutions will attempt to pursue both strategies together.

So what are the mission options after Nelson? The pathway for the sandstones - and perhaps for a small group knocking on the door of the Go8, such as Macquarie - is clear. The way ahead is research, prestige-building investments in staff and facilities, beefed up marketing and frilly services to underpin fees that rise faster than inflation, marketing themselves as tradition leavened by knowledge economy modernity and global engagement; and a pick and choose approach to international, with more emphasis than before on international research linkages and consortia a la ANU..

Other institutions will continue to aspire to elite status and will set in place long-term strategies to achieve that goal. The trick will be to render these compatible with medium term trajectories that may well look rather different. Below the sandstones, roles within the national system will tend to differentiate into three groups:

- State/Territory-wide providers based in near the CBD and strongly identified with the city, with its work and its cultures, thus taking advantage of the mission gap left by the sandstones. This group could be expected to have a strong presence in second degrees and continuing education;
- Regionally-oriented institutions whether on the edge of the large cities or in provincial centres, intersecting with TAFE institutions and feeding students into the major providers at postgraduate stage;
- Niche public and private sector providers.

Stanfords of the South? At the global level Australian institutions will take a range of roles. It is impossible that any Australian institution could achieve the global power of Stanford or Cambridge unless Australia became a more powerful nation. An Australian university could achieve global recognition equivalent to, say, a mid-West American state university, or Warwick in the UK, through its role in the Asia-Pacific. In terms of research ANU is closest to achieving this. In teaching Monash, NSW and others already have a great regional engagement. The potential for merger between these two modes of global interaction is unclear. What *is* clear is that a more differentiated Australian system will send out contradictory global signals.

Given that global reputation is determined more in terms of nation than in terms of institution, which signals will predominate? Will Australia be seen as a regional research powerhouse, or a global polytechnic, or something else? Australia's global future will not be resolved by good business practices, by quality assurance systems, or by recognition protocols, though all these help. What will be decisive will be the evolving capacities of research and teaching, and how the two are spliced together.