

RESEARCH BRIEFING

Changing Academic Profession

October 2009



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The attractiveness of the Australian academic profession: A comparative analysis

Executive summary

This briefing provides an analysis of challenges facing the sustainability and development of the academic workforce in Australia. It draws together insights from national statistics collections and a number of recent studies, sheds light on current characteristics of the academic profession, and identifies key problem areas. From a review of the evidence, we argue that now is the time for both policy action at the national and institutional level to address these problems, and for further research that can inform workforce planning and development in the years to come.

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Over the last few decades university education has become an important pillar of Australia's advanced economy. Australia's innovative capacity hinges in large measure on the talents of its university graduates, and the people who educate and train these graduates – academic staff – sustain the core business of the country's future. There is a clear imperative to develop a cogent strategy for planning and building the academic workforce.

Our review of the evidence shows that:

- there is a clear, present and growing demand for academic work, a demand being propelled by system growth, looming retirements, and increased international mobility;
- the hitherto largely 'casual' response to this demand lacks coherence, strength and vision; and
- the settings are not right for engaging and replenishing Australia's academic workforce.

In comparing the 'lot' of Australian academics against their international peers and professionals in other fields our analysis reveals that academics:

- earn salaries that are commensurate with their international peers but not compared to their Australian colleagues in other sectors;
- are less satisfied with their work than international colleagues and possibly other professionals in Australia;
- report one of the highest propensities for job change – either out of the profession or the country;
- affirm a disjunction between their preference for and participation in research;
- report one of the lowest levels of satisfaction with institutional management and support;
- sit slightly below the international average in terms of the extent of fixed-term contracts; and
- work among the longest hours per week – particularly those in senior ranks.

Read as a whole, the various empirical analyses consistently point in a similar direction: change is needed. While the above results shed important light on Australia's academic workforce, the more general contention of this paper is the need for more policy development, planning and research on Australia's academic workforce. We propose that this should include:

- expanding staff numbers;
- streamlining accountability requirements;
- engaging the new generation of academics;
- increasing understanding of the casual workforce;
- stimulating mission diversity; and
- building institutional leadership capability.

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The attractiveness of the Australian academic profession

A clear agenda for workforce planning and development

Over the last few decades university education has become an important pillar of Australia's advanced knowledge economy. A university education is the foundation for nearly all professional careers, and many of the more complex leadership roles demand the kind of capabilities that need to be honed through graduate education. Australia's innovative capacity hinges in large measure on the talents of its university graduates, and the people who educate and train these graduates – academic staff – sustain the core business of the country's future. Along with educating the citizenry, academic staff play a vital role in Australia's trade in educational services. This industry is large and growing. In 2006, nearly 15 per cent of all income of Australian tertiary providers was derived from international student fees. International education is now reported as being one of Australia's largest service export industries and one of the largest overall industries (see, for example AEI, 2009).

It would seem useful, given these two perspectives alone, to have a well-formed understanding of the academic profession. Unfortunately, while research has been undertaken on the nature of academic work (Harman, 2000; Harman & Meek 2007; Harman, 2003), at an aggregate level very little is known about the people who teach and carry out research in Australia's universities, about the characteristics of the profession, or about what is required to ensure its sustainability and development. Workforce analysis and planning usually gain momentum when there is a crisis that needs resolving. Waiting for a crisis may be too late for higher education, however, given that with the exception of immigration it takes an absolute bare minimum of seven years to produce an academic. As we argue below, there is a clear and present need to plan now about maintaining and repopulating Australia's vibrant academic profession.

This briefing contributes to advancing understanding of the academic workforce in Australia. By drawing together insights from national statistics collections and a number of recent studies, it sheds light on current

characteristics of the academic profession, identifies its key problem areas, and argues that now is the time for both policy action at the national and institutional level to address these problems as well as further research that can inform workforce planning and development in the years to come.

The analysis begins by looking at the growing demand for academics in the Australian system. There is an outline of how this demand has been addressed in part by subcontracting a major part of the core business of the academy – education – to casual teachers. With participation rates set to increase to meet recently announced national targets for bachelor degree attainment (Australian Government, 2009a), and many senior academic staff moving rapidly towards retirement age, universities face a potential shortfall in qualified staff. It is possible that the casualised workforce provides a pool of talent from which the tenured profession can be replenished. But is this group attracted to a more permanent career in higher education? Are our younger staff able and willing to step up to the challenge set by their elders? And is the profession capable of attracting the next generation into academe?

Using data from the 25 country Changing Academic Profession (CAP) survey, this briefing contends that the settings are not right for either converting the large casual workforce into the academic profession of the future, for keeping younger colleagues interested in a continued career in our universities, or for attracting a new generation of qualified academics. There appear to be strong push and pull factors within our own institutions, both from the international academic labour market and from outside higher education, that create a serious problem for the near future. The paper ends with a discussion on possible ways forward.

A growing demand for academic work

The Australian university system has grown considerably over the last two decades. The post-Dawkins massification saw a large increase in the university student population. Expressed in terms of

equivalent full-time students¹ there was an increase from about 350,000 in 1989 to nearly 726,000 in 2007 (including around 197,000 equivalent full-time international students) an increase of about 107 per cent. In the last year, movement from a ‘mass’ to a ‘universal’ system (Trow, 2000) has been initiated following recent growth plans announced for Australia’s higher education sector (Bradley, Noonan, Nugent & Scales, 2008; Australian Government, 2009a). These reforms set targets of 40 per cent attainment of bachelor degrees among Australia’s 25 to 34 year old age group.

Yet staff numbers have not kept pace with the growth of the system overall.² Using national staff statistics (DEEWR, various years), Figure 1 compares the increase in the number (n) of equivalent full-time students and full-time equivalent teaching staff. It shows that in 1989 there were 26,104 full time equivalent academic teaching staff (that is, staff classified by their universities as ‘teaching only’ or ‘teaching and research’), while by 2007 there were 33,496, an increase of about 28 per cent. This has inflated the student:staff ratio from 13.41 to 21.67, even when casual staff are included. Of course, this carries implications not just

for students but also for the way in which academics experience their work environment and institutions are managed in a rapidly changing environment.

The demand for more academics is, however, slightly more pressing than these participation figures alone suggest. While numbers have remained relatively flat, the workforce has not been replenished. In recent years, Hugo (2005a, 2005b, 2005c, 2008) has highlighted the fact that the age profile of the academic workforce in Australia is notably weighted to the ‘retirement end’ of the spectrum. This is confirmed by data from the Australian Government’s statistics on staff working in higher education (DEEWR, various years). Figure 2 shows, for instance, that a large and growing proportion of academics in Australia is aged over 50 years. The relative decline of the proportion of academics in the 30 to 39 year age bracket further illustrates the problems associated with an ageing academic profession. The numbers behind this figure suggest that the current stock of young academics will certainly not be large enough to replace the large numbers of older academics as they retire over the coming decade.

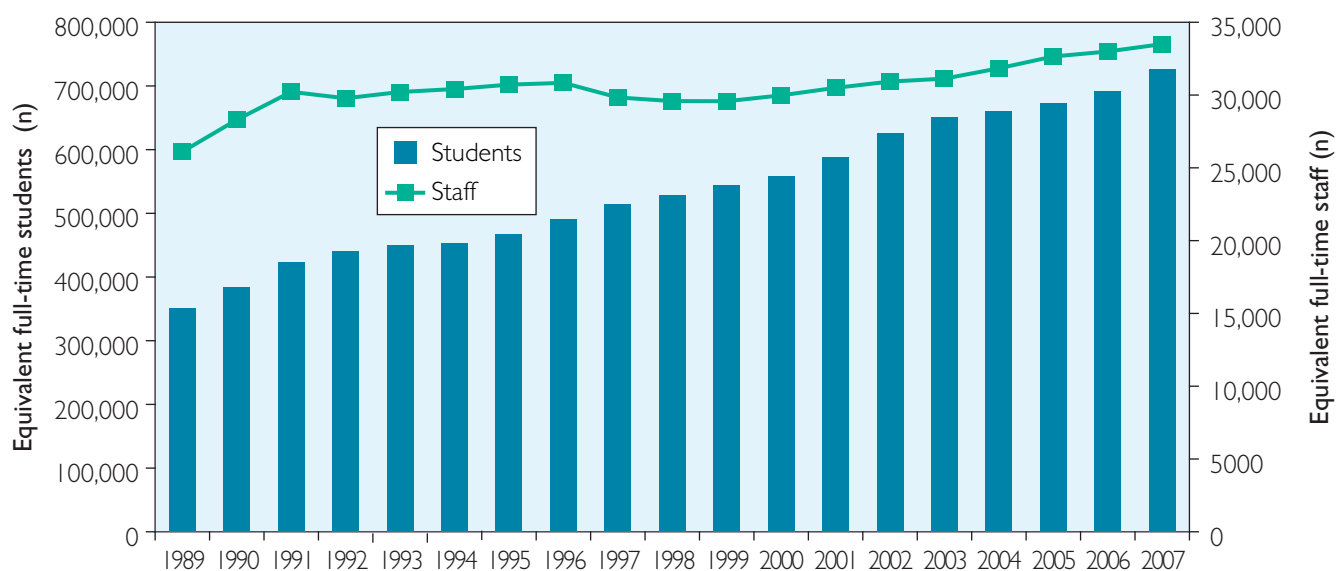


Figure 1 Equivalent full-time students and full-time equivalent teaching staff

1 Student numbers have been expressed here as ‘full-time equivalent students’, because this is the numerator required for the calculation of student:staff ratios.
 2 The staff population under consideration here comprises academic staff, classified as either ‘teaching only’ or ‘teaching & research’, and working in academic departments. These staff have been described here as ‘teaching staff’. It has been presumed that staff other than these do not participate in university teaching.

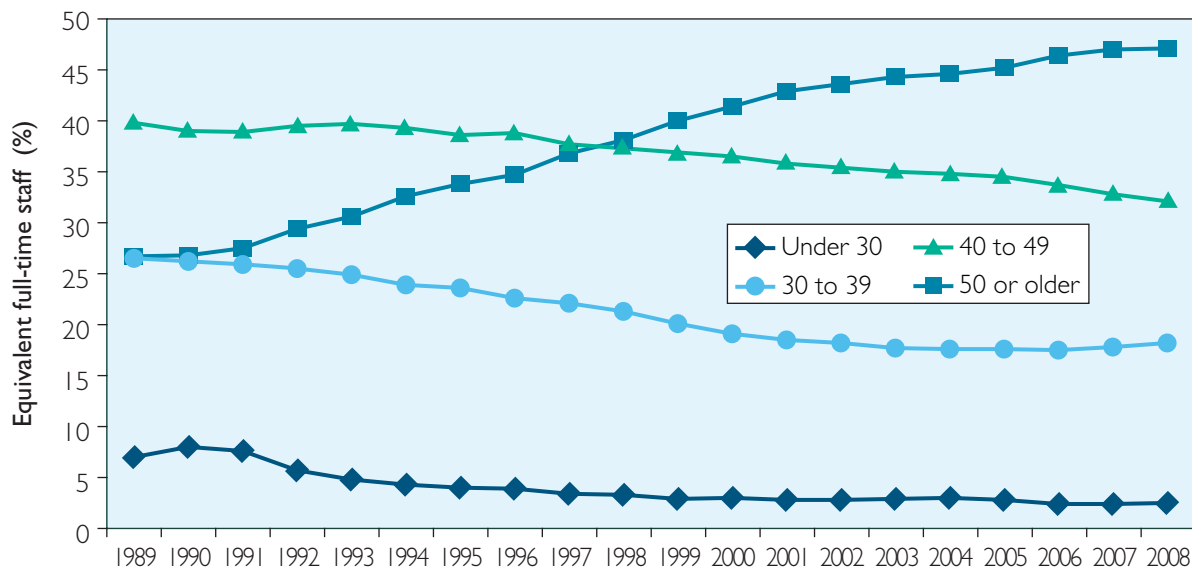


Figure 2 Teaching staff by age group (full time and fractional full time staff only)

Analysis of these figures suggests that over the next five years, 24 per cent of senior academics (associate professors and professors) will retire and another 23 per cent will follow in the following five year period. Theoretically, this means that close to 5,000 of our most senior academics could leave the system and would require replacement under ceteris paribus conditions.

If we also take account of the government’s ambitious participation and equity agenda (Australian Government, 2009a), the replacement question becomes even more pronounced. Meeting the government’s target of 40 per cent attainment of bachelor degrees among Australia’s 25 to 34 year old population will require substantial and immediate growth in the higher education sector (Birrell & Edwards, 2009). In addition to this policy-inspired change, recent projections of the Australian workforce size over the coming decades show that the growth in jobs requiring doctorate-level qualifications are forecast to grow at a faster rate than that for jobs at any other qualification level (Edwards, forthcoming; Edwards, Radloff & Coates, 2009). Coupled with the issue of an ageing profession, the demand for academics over the coming decade in Australia is certain to increase substantially.

Of course, it is important to be aware that Australia is not the only country experiencing an ageing of its academic workforce. A similar situation exists in countries such as Canada, New Zealand, the USA and the UK (Kubler & DeLuca, 2006). In addition, countries across Asia and the Middle East may start recruiting greater numbers of English-speaking academic staff, putting further pressure on the international academic labour market. Given that the academic labour market always has been an international one, this means that the replacement question not only needs to be framed in terms of the attractiveness of the university sector versus other sectors in Australia, but also in terms of competing higher education systems. This has the potential of turning into a perfect storm if questions can be posed as to the attractiveness of the Australian academic profession. But before turning to that, let us first examine the university sector’s initial response to the massive increase in student numbers.

The casual response

Although the number of teaching staff has increased, albeit at a lower rate than the increase in the number of students, there has also been a change in the

composition of the teaching body in terms of its contractual arrangements with universities. Figure 3 shows the university teaching staff between 1989 and 2007 according to whether staff had tenure (that is, were on probation or were confirmed), had limited tenure (reported by universities according to the number of months of the contract term), or were casually (sometimes called ‘sessionally’) employed.

Data from DEEWR (various years) reported in Figure 3 shows that the major growth area among teaching staff has been in the number of casual staff. This group increased by nearly 125 per cent from 3,315 to 7,440 between 1989 and 2007. Further, as a proportion of all teaching staff casual staff have increased from 12.7 per cent of the total in 1989 to 22.2 per cent in 2007. By contrast, the number (n) of tenurable staff increased by 19.3 per cent between 1989 and 2007. Perhaps the main point to be drawn from Figure 3 is that the ‘norm’ for the proportion of the Australian teaching workforce comprised of casual staff has increased from about 13 per cent to a consistent 22 per cent of the total teaching workforce in the twenty-first century. The shift from limited to ongoing tenure from 1998 to around 2005 reflects the creation and then dissolution of the Higher Education Conditions of Employment (HECE) Award. Notably, this had little impact on the expansion of staff on casual contracts.

To look more closely at the distribution of teaching staff, Table 1 shows a breakdown by gender (including numbers (n) and percent (%)). As can be seen, a higher proportion of women than men have typically been employed as casuals, and a lower proportion have occupied tenured posts. Similar proportions of women and men now occupy limited tenure positions, but this is a relatively recent phenomenon.

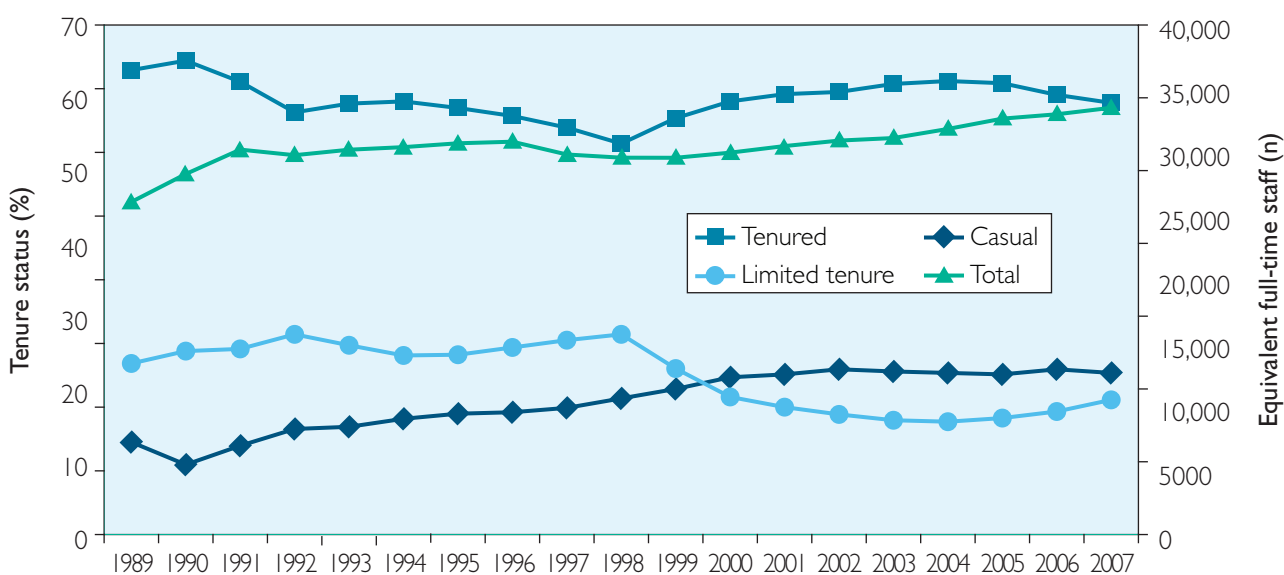


Figure 3 Teaching staff in academic departments by tenure status

Table 1 Teaching staff in academic departments by tenure status and sex

| Year | Male teaching staff | | | Female teaching staff | | | | |
|------|---------------------|-------------|--------------------|-----------------------|-----------|-------------|--------------------|------------|
| | Total (n) | Tenured (%) | Limited tenure (%) | Casual (%) | Total (n) | Tenured (%) | Limited tenure (%) | Casual (%) |
| 1989 | 26,104 | 63.8 | 23.5 | 12.7 | 7,890 | 46.9 | 33.7 | 19.3 |
| 1990 | 28,297 | 65.1 | 25.2 | 9.6 | 9,288 | 51.9 | 34.8 | 13.3 |
| 1991 | 30,214 | 62.2 | 25.5 | 12.2 | 10,151 | 49.6 | 33.6 | 16.8 |
| 1992 | 29,775 | 58.0 | 27.5 | 14.5 | 9,711 | 43.1 | 36.0 | 20.9 |
| 1993 | 30,205 | 59.2 | 26.0 | 14.8 | 10,080 | 44.8 | 33.3 | 21.9 |
| 1994 | 30,408 | 59.5 | 24.6 | 15.9 | 10,279 | 46.5 | 30.4 | 23.1 |
| 1995 | 30,710 | 58.6 | 24.7 | 16.6 | 10,524 | 46.8 | 29.6 | 23.6 |
| 1996 | 30,834 | 57.5 | 25.7 | 16.8 | 10,719 | 45.3 | 31.0 | 23.6 |
| 1997 | 29,831 | 55.9 | 26.7 | 17.4 | 10,512 | 43.8 | 32.0 | 24.3 |
| 1998 | 29,580 | 53.7 | 27.5 | 18.7 | 10,680 | 42.2 | 32.0 | 25.8 |
| 1999 | 29,572 | 57.2 | 22.8 | 20.0 | 10,883 | 47.8 | 25.1 | 27.1 |
| 2000 | 29,974 | 59.5 | 18.9 | 21.6 | 11,266 | 51.2 | 20.7 | 28.1 |
| 2001 | 30,492 | 60.5 | 17.5 | 22.0 | 11,731 | 52.6 | 19.0 | 28.4 |
| 2002 | 30,921 | 60.8 | 16.5 | 22.7 | 12,112 | 53.5 | 17.9 | 28.6 |
| 2003 | 31,122 | 61.9 | 15.7 | 22.4 | 12,373 | 55.1 | 16.8 | 28.1 |
| 2004 | 31,835 | 62.3 | 15.5 | 22.2 | 12,884 | 56.0 | 16.3 | 27.7 |
| 2005 | 32,645 | 62.0 | 16.0 | 22.0 | 13,458 | 56.0 | 16.5 | 27.4 |
| 2006 | 32,987 | 60.4 | 16.9 | 22.7 | 13,906 | 54.2 | 17.7 | 28.1 |
| 2007 | 33,496 | 59.3 | 18.5 | 22.2 | 14,287 | 53.6 | 19.0 | 27.4 |

Unfortunately, the national higher education staff statistics reporting of actual casual staffing does not provide a distribution of casual staff according to the broad disciplinary area in which they work. Therefore it is not possible to calculate student:staff ratios for each discipline. Although the overall student:staff ratio has increased considerably, it is also the case that many of the areas of rapid growth over the last two decades have been in ‘large-class’ disciplines such as management and commerce.

By examining only tenured and limited tenure positions, it is possible to identify the considerable difference in the rate of full-time equivalent (FTE) and fractional full-time (FFT) position occupancy. The fractional full-time proportion of tenurable and limited tenure positions alike has risen, but there is a vast difference in the proportion of fractional full-time positions between the two tenure types, as shown by the numbers (n) and percent (%) in Table 2.

Table 2 Teaching only and teaching and research staff in academic departments

| Year | Tenured | | | | Limited tenure | | | |
|------|---------|---------|-----------|---------|----------------|---------|-----------|---------|
| | FTE (n) | FFT (n) | Total (n) | FFT (%) | FTE (n) | FFT (n) | Total (n) | FFT (%) |
| 1989 | 16,203 | 447 | 16,649 | 2.7 | 5,256 | 886 | 6,142 | 14.4 |
| 1990 | 17,778 | 652 | 18,431 | 3.5 | 6,051 | 1,088 | 7,139 | 15.2 |
| 1991 | 18,171 | 633 | 18,803 | 3.4 | 6,602 | 1,111 | 7,712 | 14.4 |
| 1992 | 16,823 | 447 | 17,270 | 2.6 | 6,991 | 1,187 | 8,179 | 14.5 |
| 1993 | 17,482 | 405 | 17,887 | 2.3 | 6,647 | 1,192 | 7,839 | 15.2 |
| 1994 | 17,680 | 416 | 18,096 | 2.3 | 6,334 | 1,142 | 7,476 | 15.3 |
| 1995 | 17,570 | 441 | 18,011 | 2.4 | 6,393 | 1,202 | 7,595 | 15.8 |
| 1996 | 17,285 | 448 | 17,733 | 2.5 | 6,673 | 1,258 | 7,931 | 15.9 |
| 1997 | 16,232 | 437 | 16,669 | 2.6 | 6,664 | 1,309 | 7,974 | 16.4 |
| 1998 | 15,416 | 483 | 15,899 | 3.0 | 6,731 | 1,407 | 8,137 | 17.3 |
| 1999 | 16,248 | 653 | 16,901 | 3.9 | 5,699 | 1,046 | 6,745 | 15.5 |
| 2000 | 17,041 | 802 | 17,843 | 4.5 | 4,607 | 1,051 | 5,659 | 18.6 |
| 2001 | 17,617 | 840 | 18,457 | 4.6 | 4,232 | 1,103 | 5,335 | 20.7 |
| 2002 | 17,877 | 921 | 18,798 | 4.9 | 3,938 | 1,155 | 5,093 | 22.7 |
| 2003 | 18,298 | 980 | 19,278 | 5.1 | 3,692 | 1,185 | 4,877 | 24.3 |
| 2004 | 18,743 | 1,077 | 19,820 | 5.4 | 3,701 | 1,240 | 4,941 | 25.1 |
| 2005 | 19,131 | 1,124 | 20,255 | 5.5 | 3,933 | 1,288 | 5,220 | 24.7 |
| 2006 | 18,847 | 1,066 | 19,913 | 5.4 | 4,140 | 1,439 | 5,579 | 25.8 |
| 2007 | 18,642 | 1,228 | 19,870 | 6.2 | 4,676 | 1,510 | 6,186 | 24.4 |

It is important to note that these statistics provide only partial information on the nature and extent of casualisation of the academic workforce in Australia. As noted by Percy et al. (2008: 3), “sessional teachers are the hidden part of the massification that has taken place in higher education in Australia over the last 30 years... Between 40 and 50 per cent of teaching in Australian higher education is currently done by sessional staff”. Indeed, research undertaken as part of the Staff Survey of Student Engagement (ACER, 2009) confirms that many institutions are unable to provide comprehensive and accurate data on the number of sessional teachers and their conditions of employment, and that the national figures do not represent the real contribution of sessional staff.

In discussing casual staff in the university sector we should not isolate this from the broader trends in Australian society. In its 2009 report *Measures of*

Australia's Progress the Australian Bureau of Statistics (ABS) provides an analysis of changes in work conditions over time. The ABS notes a strong growth in the number of casual employees over the last two decades. The proportion of males who are casual employees has increased from 13 per cent in 1990 to 25 per cent in 2004. For female casual employees the increase was from 28 per cent to 31 per cent. The ABS also notes that the pace of change has slowed in recent years. The data presented above on casualisation in the university sector appear to be in line with the overall trend, although the proportion of female casual employees is somewhat lower compared to the national trend. Also, the overall proportion of casual staff has levelled out earlier in the university sector. Yet, in all of these comparisons we have to take account of the fact that, as indicated before, there is a higher degree of unreliability than usual regarding statistics pertaining to casual staff.

The ABS notes that the increase in casualisation is “viewed by many employers and employees as beneficial. For example, for people employed in such jobs, often women and younger people, the flexibility associated with such arrangements may suit their particular needs” (ABS, 2009: 51). This suggestion does not correspond with the general thrust of the debate around casualisation in the university sector, which is far more couched in terms of juggling problems associated with rapid change. The following quote from Lazarsfeld Jensen and Morgan (2009: 54) is illustrative of this:

Casualisation has a profound impact on tenured staff. They must recruit and manage teachers who in turn have no access to training or support, and whose role is constrained by a minimalist contract system. Last minute recruitment was often based on prior relationships, which casuals felt opened them up to excessive demands and bullying because of their financial vulnerability. There is insecurity on both sides with neither feeling able to create parameters for the relationship or the work. It is not unusual for a full time academic to work exclusively with casuals, and for casuals to have no relationships within the university beyond their immediate supervisor and the person who handles their pay.

As we noted earlier, it may not necessarily be true that for everyone casualisation is problematic. But it is clear that much more research is needed to unravel this aspect of the Australian academic profession. As this briefing emphasises in conclusion, for instance, very little is known about the qualifications, training and experience of casual staff.

Converting the position: Assessing the attractiveness of the academic profession

The above analysis has outlined how the teaching academic workforce has failed to keep up with growth in student numbers. Institutions have responded to this over the last decade through a consistent casualisation of the academic workforce. One argument that could be made is that the large casual workforce will provide the academic world with experienced and ready

replacements for retiring academics. The question, however, can be asked whether the settings are right to convert the current casual workforce into the tenured positions of tomorrow’s academic profession. And, of course, this is equally true for the younger cohorts already in academe or for those with the qualifications and capabilities to actually enter the profession afresh.

The Changing Academic Profession (CAP) survey provides a unique window on the perceived attractiveness of the academic profession in Australia. It offers an international angle, which is important given the highly internationalised and mobile nature of academic work. The CAP survey was conducted in 2007 to assess characteristics of academic staff and their work. In total 25 countries took part in the study, making it the largest and most extensive survey of academic staff yet conducted. It has produced the most robust contemporary perspective on the nature and contexts surrounding academic work.

This briefing presents findings from 18 of the 25 countries – those countries which at the time of writing have supplied data to the international study centre at the University of Kassel coordinating the construction of the international database. The survey deployed a common instrument, population definition and sampling approach within each country. In line with the international population definition, casual staff were not included in the 2007 survey. Twenty of Australia’s universities (around half) took part, and 1,370 valid responses were received from academics. The response distribution reflected the national institutional and staff populations on key marker variables. The standard error of the estimates implies that a difference of more than 0.2 between mean scores is likely to be statistically significant. Further details on the Australian collection are provided by Coates, Goedegebuure, van der Lee and Meek (2008).

For the purposes of this paper, the attractiveness of the academic profession has been operationalised along a number of dimensions that reflect why one might consider entering and remaining within the academic profession. This pertains to pecuniary and non-pecuniary features for, as indicated by Metcalf, Rolfe, Stevens and Weale (2005), several characteristics apart from salary attract people to the academic

profession. Prominent among these are the opportunity to do research rather than to teach, a good working environment, autonomy and freedom to use initiative, level of control over research, flexibility in work hours, and variety in work. Metcalf et al. (2005) identified that in terms of retention, major concerns relate to a lack of permanent contract, increased use of fixed-term contracts, levels of pay, perceived excessive workloads and time spend on administrative tasks.

The CAP survey addresses the majority of these factors, which enables us to create a number of indicators that can provide benchmark data on the attractiveness of the academic profession in Australia and in the context of an increasingly competitive international academic labour market. The indicators are:

- relative academic salary levels;
- job satisfaction;
- propensity for job change;
- opportunity for research;
- environment support;
- contract conditions; and
- workload.

The working hypotheses underlying these indicators are straightforward and can be summarised as follows:

- the higher academic salaries, work satisfaction, and opportunities for research, the more attractive the Australian academic profession;
- the better supporting environments and contract conditions, the more attractive the Australian academic profession; and
- the higher the propensity for job change, workloads and level of administrative burden, the less attractive the Australian academic profession.

Academic salaries

In discussing the relative salary levels for the Australian academic profession we first focus on a comparison with other higher education systems. First, we provide a synthesis of the data generated in previous studies and supplement this with the data collected through the CAP project. Second, we attempt to position the Australian academic profession in the broader Australian context: How does academe hold up against other sectors when it comes to remuneration?

In our search for studies previously undertaken on the relative salary position of Australian academics, we were struck by the paucity of data. One frequently finds comments on the “uncompetitive academic salaries compared with industry” (ABDC, 2008: 8; see also OECD, 2008; Productivity Commission, 2007), suggestions that if salaries were improved more younger research staff would be attracted to the profession (Universities Australia, 2008), and that “academic salaries have declined in relative terms for most of the last 25 years” (Productivity Commission, 2007: 261; see also Horsley et al., 2005). For the most these comments are not directly supported through data, and where they are, the data are remarkably old. The most rigorous Australian study (Horsley, Martin and Woodburne, 2005) in fact uses data collected over the period 2001-2002, and much reference still is made to the Australian Academic Salaries Time Series project that covers the period 1977-2002 (Horsley and Woodburne, 2005). The problem with this is that more recent international studies (see below) suggest that the relative salary position for Australian academics may not be that bad. Of course we have to take care with international comparisons, for as Considine et al. (2001) point out, such comparisons are complex because of different employment arrangements, and different standardising measures used to deal with purchasing power mean that comparisons between studies are not straightforward (Robinson, 2006). Yet this appears preferable to using outdated data.

Over the last three years, several independent studies have been undertaken that suggest that Australian academics do quite well in terms of remuneration when compared to their colleagues abroad. Comparing the position of higher education teaching personnel in Australia, Canada, New Zealand, the UK and the United States, Robinson (2006: 5) finds that:

with the notable exception of New Zealand, ...salaries for ranks up to associate professor are not widely divergent between countries. Salaries tend to be a bit higher in Canada at the lower and middle ranks but there is little difference with the US at the top rank of professor. UK salaries are competitive with the USA and Canada at the lecturer rank, but salaries at Canadian institutions and at private American institutions at the most senior rank are about 7 per cent higher. Australian salaries below the rank of professor are quite comparable to other salaries. The clear outlier is New Zealand where salaries at the three lowest ranks are significantly below that of the rest of the Anglo-American world.

Table 3 presents key figures compiled from a range of sources on academic salaries in Australia, Canada, New Zealand, the UK, and the USA (see: Robinson, 2006; Kubler & Lennon, 2007; NZVCC, 2008; AAUP, 2008). These figures are in US dollars and have been adjusted for purchasing power. The Australian and NZ salaries are mid-scale, except for professor which is the minimum level. Average salary has been used for other countries. The USA figures are a composite of salary conditions in public and private institutions, and are conservative since they are for 9 to 10 month contracts and the top private universities are not included. The 2008 figures for Australia are for research intensive (Go8) institutions only. Australian titles for academic ranks have been used. There is variability in the methods used by researchers to estimate each of the figures.

This meta-analysis suggests that despite fluctuations in the estimates from these different studies the salaries of

Australian academics appear to be broadly comparable to those in other countries. Comparisons against the USA are close, however, and it is likely that Australian salaries are lower given that the USA figures exclude the top institutions and pertain to nine months only as indicated above. Further, this trend holds across all levels. The results suggest that New Zealand salaries may lag those of the other countries.

In trying to position the Australian academic profession relative to other sectors in the country, we face a substantive shortage of data. The only detailed comparative study available is the salary relativities study undertaken by Horsley et al. (2005). As indicated above, this study uses 2002 data and the comparative international studies discussed above suggest a certain upward dynamic in Australian academic remuneration levels over recent years. The benchmarking exercise included in the Horsley et al. (2005) study pertains to

Table 3 Average annual academic salaries by rank (US\$)

| | | Australia | Canada | NZ | UK | USA |
|---------|---------------------|-----------|---------|--------|--------|---------|
| 2003 | Lecturer | 45,201 | 53,892 | 38,031 | 50,853 | 45,135 |
| | Senior lecturer | 54,387 | 58,045 | 50,298 | | 52,362 |
| | Associate professor | 63,800 | 72,682 | 60,071 | 62,583 | 62,720 |
| | Professor | 77,756 | 90,746 | 64,715 | 84,486 | 88,641 |
| 2004–05 | Lecturer | 56,578 | 49,611 | 38,582 | 49,916 | 60,948 |
| | Senior lecturer | 68,116 | | 50,554 | 61,581 | |
| | Associate professor | 80,659 | 72,243 | 60,808 | 71,147 | 70,940 |
| | Professor | 97,910 | 68,361 | 65,786 | 67,031 | 96,525 |
| 2006–07 | Lecturer | 66,196 | 59,037 | 43,983 | 46,921 | |
| | Senior lecturer | 79,696 | | 57,632 | 59,118 | |
| | Associate professor | 93,564 | 74,410 | 69,929 | 71,147 | |
| | Professor | 114,555 | 74,513 | 74,996 | 77,756 | |
| 2008 | Lecturer | 59,000 | 65,500 | 44,900 | 50,500 | 70,700 |
| | Senior lecturer | 71,200 | | 58,600 | 60,400 | |
| | Associate professor | 83,700 | 80,500 | 71,600 | 74,200 | 83,000 |
| | Professor | 102,300 | 100,100 | 77,700 | 82,200 | 113,900 |

Table 4 Weekly wages for average weekly earnings and academic staff (AU\$)

| | | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|-------------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Average weekly earnings | | 938 | 1,090 | 1,145 | 1,196 | 1,260 | 1,316 | 1,325 | 1,381 |
| Academic salaries | Assistant lecturer | 685 | 712 | 739 | 753 | 780 | 831 | 886 | 940 |
| | Lecturer | 978 | 1,017 | 1,055 | 1,076 | 1,114 | 1,188 | 1,266 | 1,343 |
| | Senior lecturer | 1,198 | 1,246 | 1,292 | 1,318 | 1,365 | 1,455 | 1,551 | 1,646 |
| | Associate professor | 1,442 | 1,500 | 1,556 | 1,587 | 1,643 | 1,752 | 1,868 | 1,981 |
| | Professor | 1,858 | 1,932 | 2,005 | 2,045 | 2,117 | 2,257 | 2,406 | 2,552 |

the following four job families: information technology, finance and administration, engineering/science, and human resources. The results indicate that academic salaries in general are lower than those for comparable positions in the private sector. Of interest also is the finding that this is in particular true for positions at the top and bottom of the academic hierarchy. If this situation has been maintained over the last seven years it does not bode well for the rejuvenation of the academic profession if salaries alone are considered an important attractor.

As to the more senior academic positions (associate and full professors), there is widespread use of loadings to make these positions financially more attractive. Since these are negotiated on an individual basis, sector-wide data are not available. But it would be fair to assume

that for these groups the official statistics present a conservative picture. This may mitigate to some extent the unfavourable position vis-a-vis other professions. But this certainly is not the case for the entry level positions.

Horsley and Woodburne (2005), in their study of academic salaries in Australia up until 2002 plotted academic salaries against the Australian Bureau of Statistics Average Weekly Earnings (AWE) survey. Table 4 provides a ‘back-of-the-envelope’ effort to replicate the trend they identified – that academic salaries have continued to decline relative to AWE – to the present. Change figures are presented as percentages in Figure 4.

From Table 4 it can be seen that the trend identified by Horsley and Woodburne (2005) indeed has continued. Where AWE increased by a factor 1.47 over the period

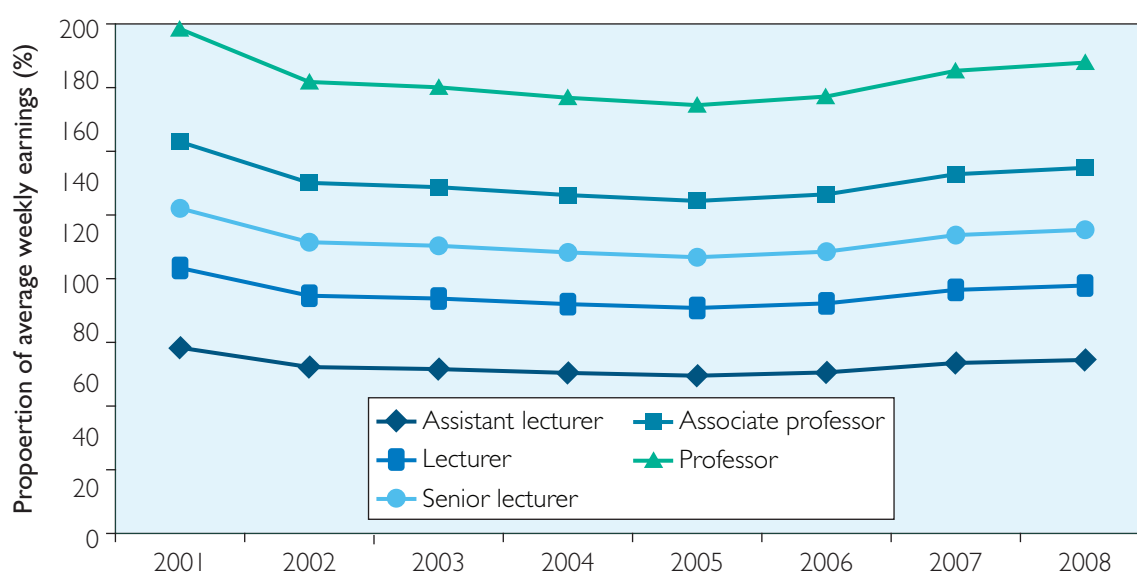


Figure 4 Academic weekly wages as a percentage of average weekly earnings

2001-2008, academic salaries increased by a factor 1.37. In relative terms they thus have slid further, though Figure 4 suggests a somewhat more positive picture in terms of academic salaries picking up over the last two years. Of course, the data presented above are rough and for a more detailed and dynamic comparison more in depth analysis is needed. However, there appears to be little to suggest that the attractiveness of the Australian academic profession in terms of salaries has increased in the 21st century, relative to other professions in the country.

In summary, the evidence suggests that Australian academic salaries compare favourably with academic salaries from key comparison countries. The salaries of academics appear less favourable, however, when compared with average weekly earnings in Australia.

Job satisfaction

As indicated by Long (2005) job satisfaction not only is critical to an individual's overall well-being, it also has important implications for organisational productivity and performance. Hence, from both an individual and an organisational perspective it is important that

people experience their job positively. The literature summarised by Long (2005: 303-305) suggests that in general this is the case. Studies also indicate that a U-shaped relationship exists between job satisfaction and age – the younger and older groups in the workforce perceive their work more positively than the groups 'in between'. Also, casual and non-permanent workers appear more satisfied with their jobs, and there is a negative relationship between higher levels of education and satisfaction with work. This relationship, however, essentially disappears if the level of education is in line with the knowledge and skills required for the job, i.e. if people are not over-educated for their job. In these cases, gender differentials also appear to play a much smaller role. Overall, women score higher in job satisfaction surveys than men, but women who are higher educated and occupy higher level jobs report satisfaction levels much more in line with their male colleagues. Taking all this into account, what can be said about the job satisfaction of the Australian academic profession compared to their international peers and to their Australian colleagues in other public and private sectors?

Figure 5 provides mean scores of a composite scale consisting of items measuring satisfaction with

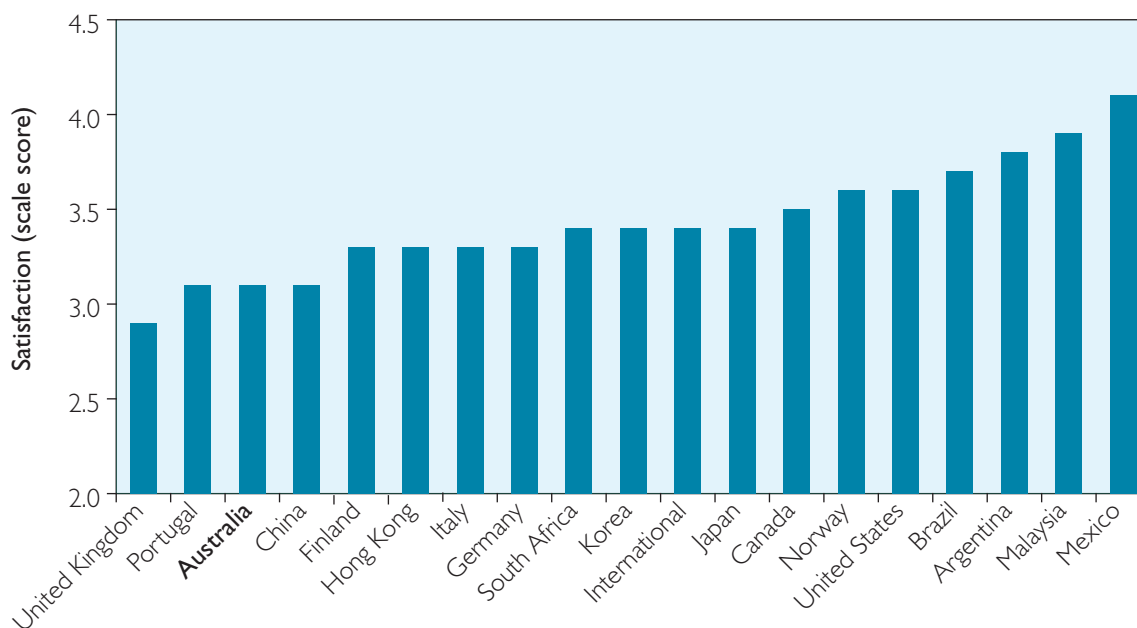


Figure 5 Satisfaction with academic work by country

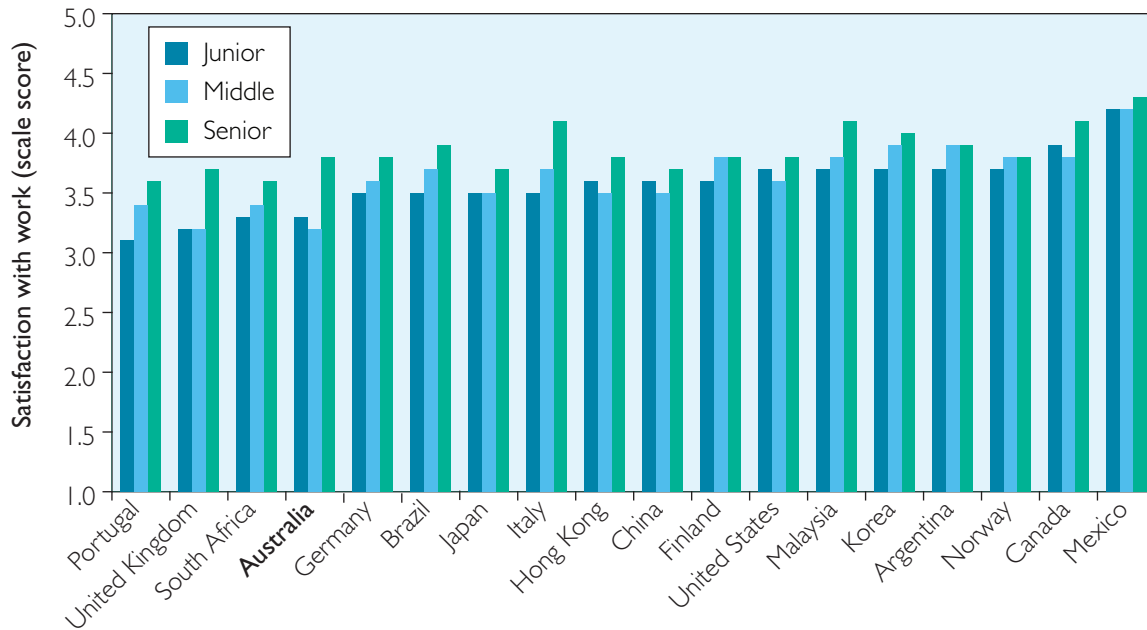


Figure 6 Satisfaction with academic work by country and rank

academic work.³ The scale is scored from 1 (negative) to 5 (positive). Australia sits in a group with Portugal and China on the low end of the satisfaction scale. Only UK academics reported lower levels of satisfaction. Australia is considerably below the overall mean for all countries. Academics from Mexico reported the highest levels of job satisfaction.

Crucially, as Figure 6 shows this dissatisfaction has been articulated by the new generation. Results are reported using a five-point metric where 1 reflects low satisfaction and 5 high satisfaction. Academics in lower and middle ranks (assistant lecturers, lecturers and senior lecturer) report lower satisfaction than those in the upper ranks (associate and full professors). This is cross-validated by interviews carried out across Australia by Edwards and Smith (2008a) with postgraduate research students and early career researchers in the field of science and mathematics. They found perceptions of an increasingly unmanageable workload being absorbed by academics at all levels within universities. Students who began research degrees with the aim of becoming an academic were nearing the end of their research training with little interest in pursuing the same work that they had witnessed their supervisors

burdened with and were instead examining options in the private sector or government. With the increasing need to juggle teaching, research and administrative duties (see also Lazarsfeld Jensen & Morgan, 2009), the desirability of the academic profession is waning at a time when the need to attract young people to this work has never been more acute.

The decline in tenured positions in universities and the increasing frequency in which academics are finding themselves stuck on the ‘post doc treadmill’ suggests that the post doctoral pathway is no longer acting as the stepping stone into tenured academic positions that it once was. Research in this regard has found this to be the case in Australia (Edwards & Smith, 2008a, 2008b; Laudel & Glaser, 2008; McInnis, Hartley, & Anderson, 2001) and elsewhere in the world (Dawson, 2007; Glanz, 1998; Huisman, de Weert, & Bartelse, 2002; Leggon, 2001; McGinnis, Allison, & Long, 1982; Monastersky, 2007) especially in relation to the sciences. According to this literature, if the increase in short-term academic positions continues, it is likely that many young researchers will be discouraged from following an academic career.

Wilkins et al. (2009: 4) conclude for the satisfaction levels of the total Australian labour force “Overall, most people are quite satisfied with their jobs, with the average job satisfaction in all six years being around 7.5 out of 10 for males and slightly higher for females

³ ‘Satisfaction’ scores reflect responses to the following items on a five-point likert scale: ‘This is a poor time for any young person to begin an academic career in my field.’ (reverse coded), ‘If I had it to do over again, I would not become an academic’ (reverse coded), ‘My job is a source of considerable personal strain’ (reverse coded) and ‘How would you rate your overall satisfaction with your current job?’.

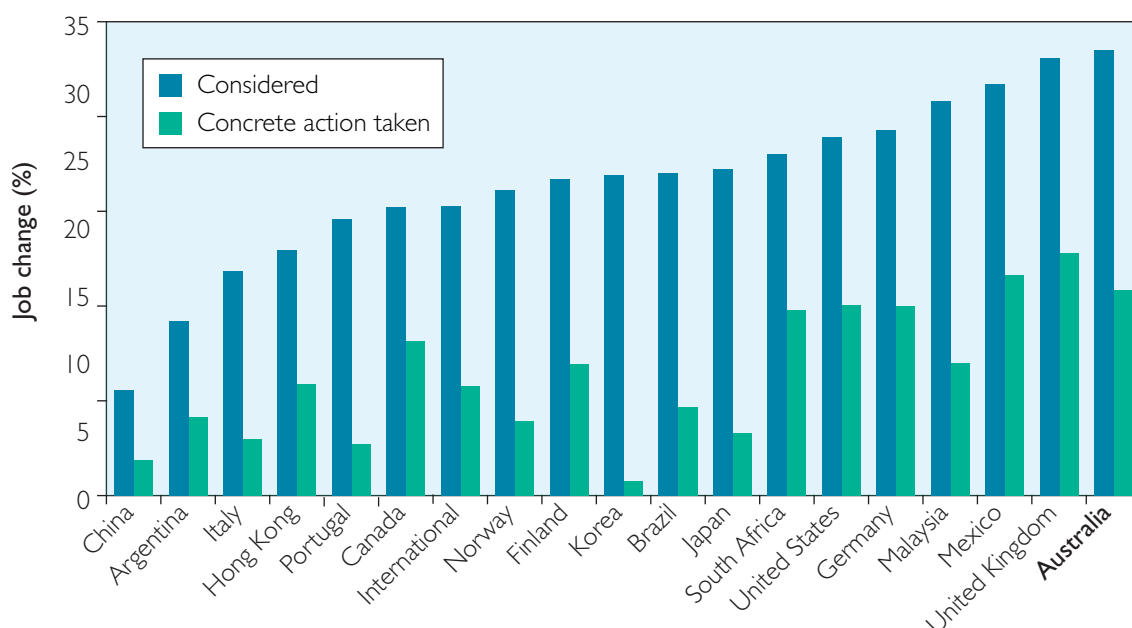


Figure 7 Considered or taken action towards major job change by country

at 7.7 out of 10.” With the CAP survey using a five point scale a one-on-one comparison is not possible, but the data from the two sources (CAP and HILDA) suggests that on average job satisfaction of Australian academics is somewhat lower than is the case for other workers.

Academia in Australia, it appears, is not the most satisfying workplace when compared to other higher education systems internationally and to other professions in the country. While links between job satisfaction and other facets of people’s work are complex, the results above do not bode well for the academic profession in Australia.

Propensity for job change

Taking another perspective, Figure 7 represents a composite scale of items asking whether in the last five years the academic has considered a major change in job towards a management position in their institution, an academic position in another institution within or outside the country, or working outside of higher education/

research institutes.⁴ They were asked to indicate whether they considered a change and whether they took concrete actions to make such a change. The results indicate that Australia had the highest rate of academics considering a change, while academics in UK were more likely to take concrete action towards change.

More specific questions were asked to probe the intended destinations of academic staff. Table 5 exposes great diversity across countries in the extent to which academics’ have taken concrete action to assume a management position in the institution. A third of all academics in the international sample flagged such action, with the figure for Australia being just under a fifth (22.6%). Many more Australian academics indicated that they had taken steps to work as an academic at another Australian institution – 49.7 per cent – which aligned with the international average. Australian academics were among the most likely to have taken steps towards an academic position in another country (30.9%) – second only to Italy. A

⁴ The composite variable consists of responses to these questions: ‘Within the last five years, have you considered a major change in your job? And did you take concrete actions to make such a change?’ ‘...to a management position in your higher education / research institution’ ‘...to an academic position in another higher education / research institute within the country’ ‘...to an academic position in another country’ ‘...to work outside higher education / research institutes’.

Table 5 Taken concrete action to change jobs

| | Management position in the institution % | Academic position in another institute in same country % | Academic position in another country % | Work outside higher education % |
|------------------|--|--|--|---------------------------------|
| Argentina | 17.1 | 38.8 | 13.6 | 57.8 |
| Australia | 22.6 | 49.7 | 30.9 | 28.2 |
| Brazil | 50.0 | 39.4 | 3.0 | 24.2 |
| Canada | 36.3 | 46.1 | 29.6 | 15.6 |
| China | 46.6 | 41.6 | 8.7 | 12.4 |
| Finland | 22.9 | 32.4 | 24.2 | 47.8 |
| Germany | 35.8 | 50.4 | 26.1 | 32.8 |
| Hong Kong | 18.9 | 54.5 | 30.3 | 14.4 |
| Italy | 26.3 | 28.6 | 39.3 | 30.8 |
| Japan | 2.7 | 90.8 | 6.5 | 8.1 |
| Korea | 10.0 | 74.4 | 7.7 | 10.3 |
| Malaysia | 40.2 | 51.8 | 21.4 | 23.9 |
| Mexico | 70.9 | 27.0 | 8.3 | 25.1 |
| Norway | 38.9 | 41.1 | 17.4 | 18.6 |
| Portugal | 40.5 | 42.2 | 13.0 | 28.6 |
| South Africa | 36.8 | 46.7 | 17.4 | 33.5 |
| United Kingdom | 28.8 | 59.9 | 27.6 | 22.3 |
| United States | 29.5 | 74.2 | 17.1 | 27.6 |
| International | 34.7 | 48.0 | 20.5 | 26.7 |

slightly lower percentage (28.2%) indicated that they had sought a position outside higher education.

From a workforce planning perspective, unless counteracted by an inflow of academics from other countries, these figures for Australia are concerning. Around a third of academics in Australia report taking action to work outside the country. This is not problematic per se if academics do so to broaden their international experience and networks (Lambeck, 2009), but is so if there is no intention to return to the home country. Similarly, around a third report taking action to work outside the industry. Seeking an academic position in another country was more prevalent for academics working in the field of life sciences (45.2%) and engineering (38.5%), and less common for those in physical or agricultural science fields. Looking for

work outside higher education was more common for those in law (66.7%) and physical sciences (38.6%), and less common for those in education (20.0%), business (15.2%) or agriculture (15.9%). When looked at on an individual basis 52.5 per cent of academics in Australia indicated that they had taken concrete action on both fronts in the last five years. This position was more prevalent among junior to mid-level academics (assistant lecturer, lecturer, senior lecturer) compared with senior (associate professor, professor) academics (49.5% compared with 32.8%), and for academics at research intensive (60.4% for Go8) or new research institutions (54.5% for IRUA). Figure 8 shows, for instance, that in Australia lower and mid-ranked academics (assistant to senior lecturers) are quite likely to have taken concrete action to work outside the sector, compared with their international peers.

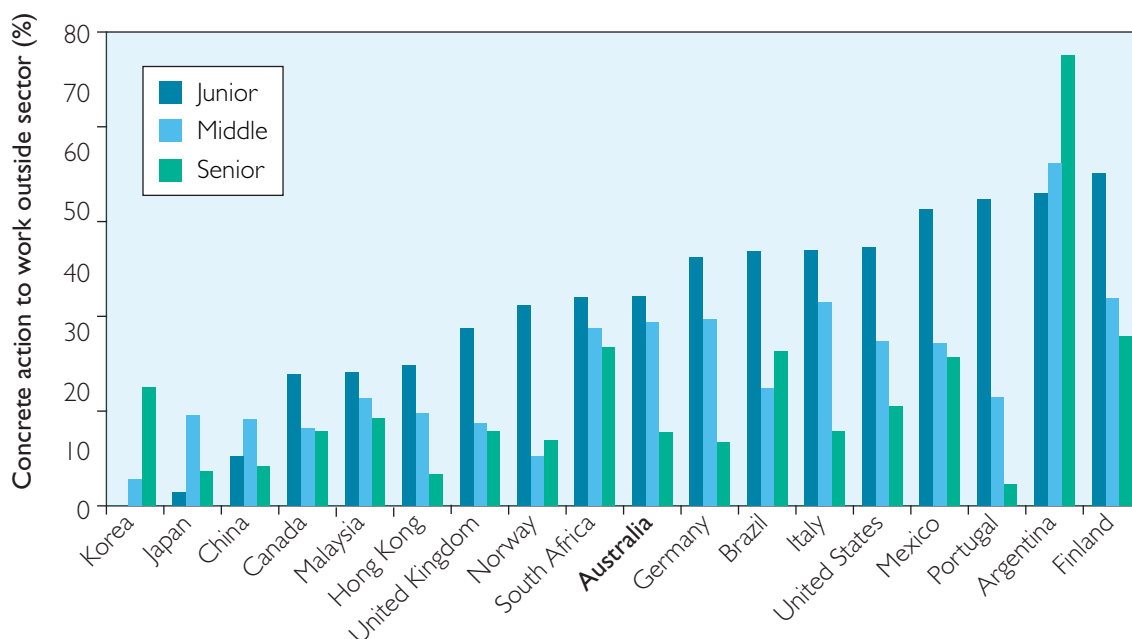


Figure 8 Taken concrete action to work outside the academic profession by country and rank

Also within Australia, there is a notable difference in mobility intentions across institutional groups. Table 6 shows that academics within ATN institutions are most likely to have taken concrete action to change to a management position in their own institution (30.7% compared with 16.6% for academics at Go8 institutions and 10.0% for academics at IRUA institutions). Academics at ‘other’ classified institutions (largely regional and ‘new generation’ institutions) are most likely to report taking action to move to another institution within Australia, although the difference

in percentages between institutional groupings is less notable. In contrast, there is a large difference between institutional groupings in the percentage of academics who have sought to move abroad – with this figure ranging from 36 per cent at both Go8 and IRUA institutions, to around a quarter for ATN and ‘other’ institutions. Go8 academics were most likely to have taken concrete action to work outside higher education.

Clearly, these results are very concerning and have serious implications for the academic workforce in Australia. There are dividends both to the profession

Table 6 Taken concrete action to change jobs by institution group

| | Management position in the institution % | Academic position in another institute in same country % | Academic position in another country % | Work outside higher education % |
|------------------|--|--|--|---------------------------------|
| Go8 | 16.6 | 48.8 | 36.5 | 31.3 |
| ATN | 30.7 | 46.5 | 26.7 | 23.8 |
| IRUA | 10.0 | 50.0 | 36.4 | 18.2 |
| Other | 26.2 | 52.4 | 25.6 | 28.0 |
| Australia | 22.6 | 49.6 | 30.8 | 28.3 |

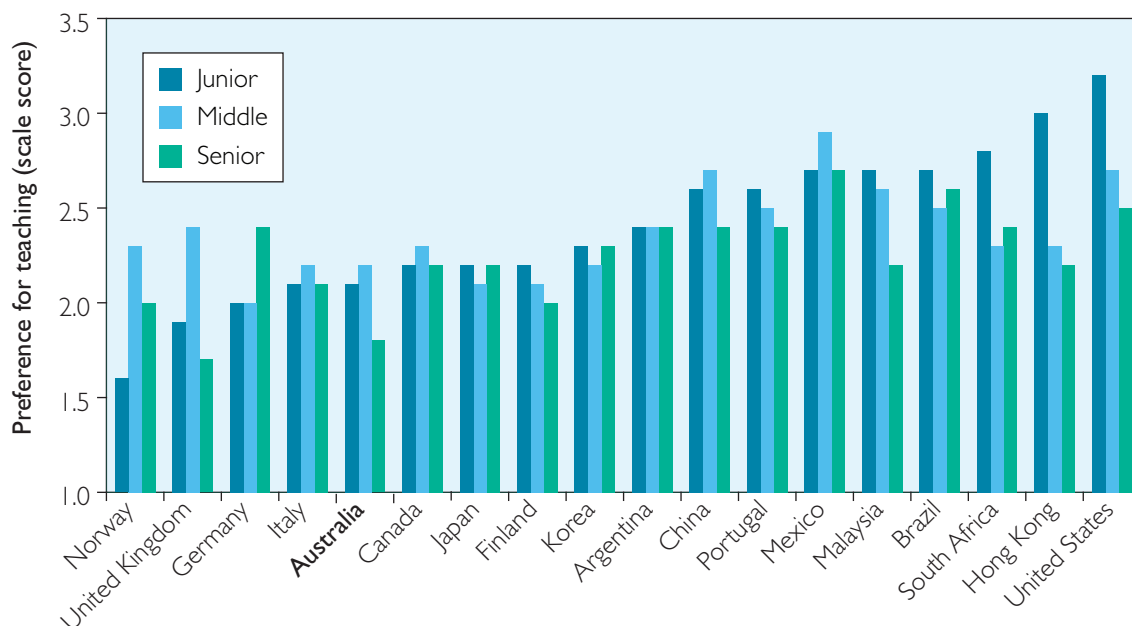


Figure 9 Preference for teaching by country and rank

and economy as a whole from having highly trained knowledge workers move in and out of the industry. Coupled with the low satisfaction scores, however, these results do not auger well for the health and rejuvenation of the profession.

Opportunity for research

Research and teaching are the fundamentals of academic life. They can be combined in various ways, from teaching- and research-only to particular mixes of the two, leading to diversity in academic work and hence to diversity in the nature and outputs of higher education institutions. The early 1990s Carnegie survey on the academic profession “...found two distinctive groupings of academics: those who were oriented towards teaching and those who were oriented towards research, with roughly equal numbers in each group (Gottlieb & Keith, 1997, in Coaldrake & Stedman, 1999). This was confirmed by the work of McNinnis (1996), who found that “Twenty-six per cent of the sample were clearly oriented towards teaching and expressed little or no interest in research. A similar proportion, 28 per cent, saw themselves as researchers”. Another study by McNinnis (1999) found that a “clear majority of academics profess an interest in both activities. However, while 42 per cent are primarily interested in research, only 21 per cent are primarily interested in teaching. Importantly, 48 per cent do not have a stronger interest in teaching as a career interest

(17% strongly disagree on this term). Considerably fewer are negative about research as a career interest” (McNinnis, 1999).

The preferences of academics have certainly changed over time, and in a rather circular manner. The late 1970s saw an overall preference for research, followed by an increased preference for teaching culminating to a relatively balanced preference during the 1990s, followed by a sharp drop in 2007 with only 7 per cent indicating a clear preference for teaching. The proportion indicating a preference for research has not changed markedly, however around 70 per cent of Australian respondents to the Changing Academic Profession survey preferred teaching and research but lean toward research.

Figure 9 shows country mean scores in terms of academics’ preferences for teaching.⁵ The scale used for this presentation ranges from 1 indicating an interest primarily in research, to 4 indicating an interest in teaching. Country results are shown for junior (assistant lecturer, lecturer, senior lecturer) and senior (associate professor, professor) staff, and are sorted by the average score across these two groups. Australia lies towards the base of this distribution, particularly

⁵ Responses to the questions ‘Regarding your own preferences, do your interests lie primarily in teaching or in research?’ ‘...primarily in teaching’, ‘...in both, but leaning towards teaching’, ‘...in both, but leaning towards research’, ‘...primarily in research’.

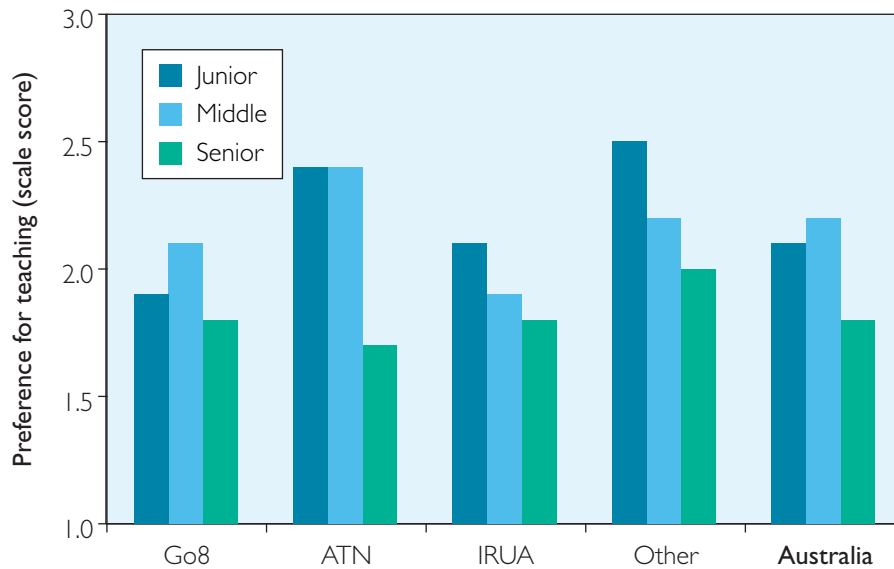


Figure 10 Preference for teaching by institutional group and rank

with regard to senior staff who indicate a comparative preference for research.

The interest in teaching declines by rank in all institutional groups within Australia, although more

so at ATN and ‘other’ (largely regional and ‘new generation’) institutions. There is a reduction in the interest in teaching at Go8 and IRUA institutions, however it is difficult to determine if this is due to variance in academic preferences or sampling.

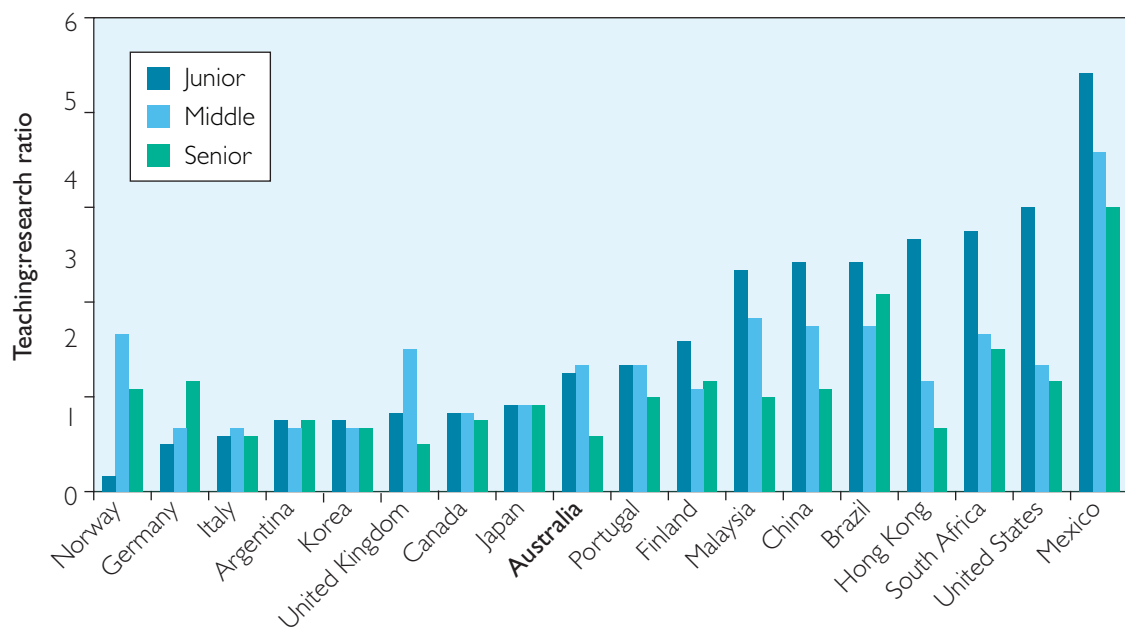


Figure 11 Teaching/research involvement ratio by country and rank

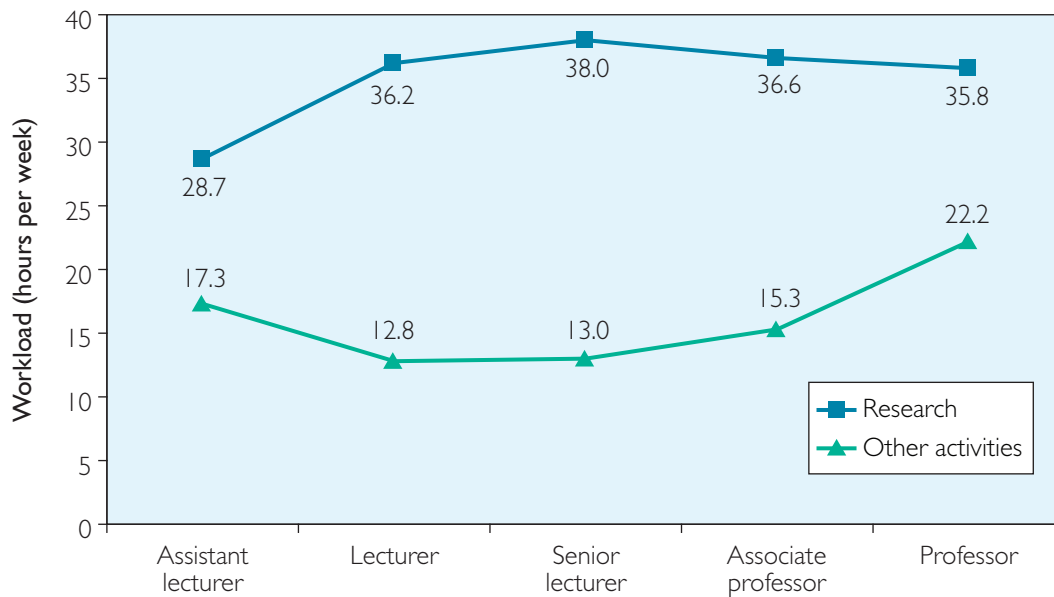


Figure 12 Hours worked per week on research and other activities by position

Figure 10 shows the ratio of time reported in teaching as opposed to research activities in the typical week. In this presentation, a higher number means more time spent teaching. Countries are sorted by mean results for junior staff. Australia falls mid-way along the distribution of countries. It is interesting to note the very large difference between junior and senior staff, a gap similar to that seen in Hong Kong, the USA, Malaysia and Mexico. Figure 10 offers a reality check on the aspirations reported in Figure 9. While Australian academics reported a relatively low level of aspiration for teaching, the teaching/research ratio for junior staff is comparatively higher. Interestingly, this is not the case for senior Australian academics, who report teaching the least relative to the amount of research they do.

This cross-country trend is reinforced through examination of the time academics in different roles spend each week engaged in undertaking research compared with other academic activities (such as teaching, service and administration). Figure 11 plots average hours across teaching and non-teaching periods. With the exception of assistant lecturers – very early career academics who are busy building their publication portfolio – academics in other roles spend notably less time on research than other activities. Interestingly, increased participation in research by rank is linked not with less participation in other duties, but with growth in the number of hours worked (see below).

Broadly, these figures spotlight an imbalance between the research aspirations and activities of Australian academics. The balance improves with rank, but only by dint of expanding work hours rather than the redistribution of duties. This has implications for workload, a topic explored below.

Environmental support

The environment in which academics work is likely to shape their perceptions of the job. Key facets of the environment include administrative support, academic freedom, the level of faculty involvement in management decisions, and the competence of top-level administrators. To that end, Figure 12 represents international comparisons by rank for a sample of countries on a composite scale of items representing management within the institution.⁶ Australian academics expressed considerably lower satisfaction with management issues than many other countries. Only UK academics reported lower agreement with these management issues. Mexico and China had the highest overall agreement levels on this scale. There is

⁶ Composite scale includes responses to these items: 'How influential are you, personally, in helping to shape key academic policies?' (...at the level of the department', '...at the level of the faculty, school or similar unit', at the institutional level', 'Top-level administrators are providing competent leadership', 'I am kept informed about what is going on at this institution', 'Lack of faculty involvement is a real problem' (reverse coded), 'Students should have a stronger voice in determining policy that affects them' (reverse coded), and 'The administration supports academic freedom'.

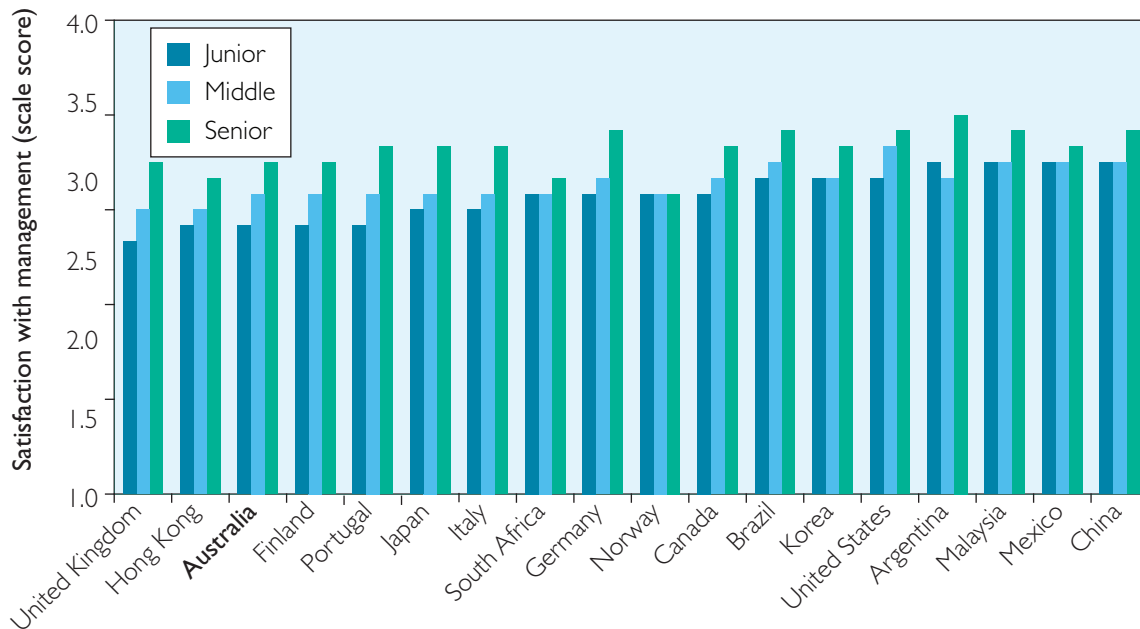


Figure 13 Perceptions of institutional management by rank by country and rank

an increase in satisfaction by rank for many countries. Junior staff do not feel as involved in institutional decision-making as their more senior counterparts, reflecting a transition from a flat collegial to a more triangular corporate institutional culture.

Academics' environmental supports were explored in terms of both facilities and broader cultural considerations. Figure 13 reports ratings of facilities, with a score of 1 denoting 'poor' and 5 'excellent'. In this, Australia compares reasonably well against other

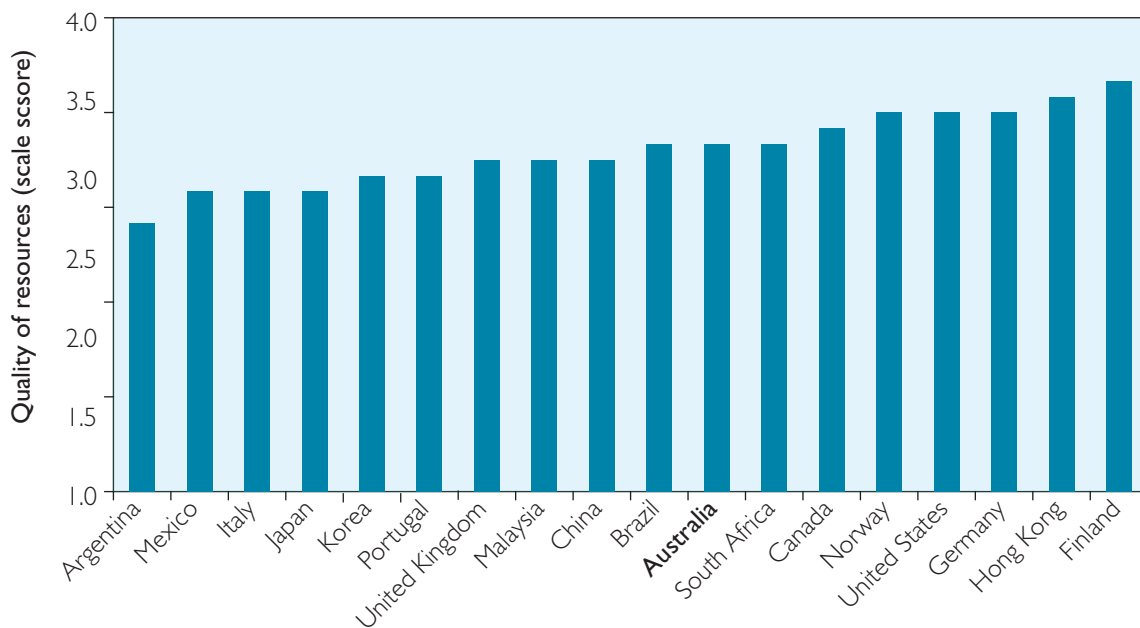


Figure 14 Evaluation of institutional facilities by country

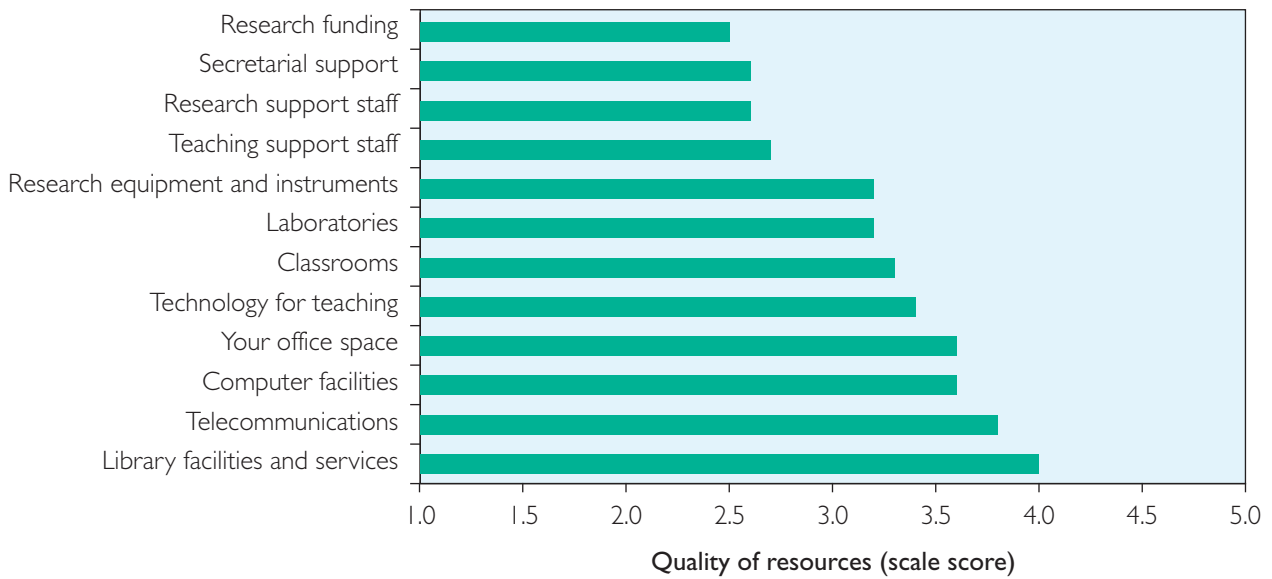


Figure 15 Australian academics' evaluation of specific facilities

countries. Looking within Australia, however, Figure 14 shows that Australian academics staff give higher ratings for general office equipment than they do for the more specific resources required for research and teaching. Academics' evaluation of support staff are particularly low. With the exception of resources specifically related to research (like equipment, instruments and funding) there was no statistically significant variation across institutional groups.

With regard to more specific environmental supports, however, it appears that conditions in Australia do not compare as favourably. Figure 15 reports country mean scores for a composite measure.⁷ Unlike perceptions

⁷ Composite scale includes responses to these items: 'Since you started your career, have the overall conditions in higher education and research institutions improved or declined?'; and 'at my institution there is: a strong emphasis on the institution's mission; good communication between management and academics; a top-down management style (reverse coded); collegiality in decision-making processes; a strong performance orientation; a cumbersome administrative process (reverse coded); a supportive attitude of administrative staff towards teaching activities; a supportive attitude of administrative staff towards research activities; and professional development for administrative/management duties for individual faculty'.

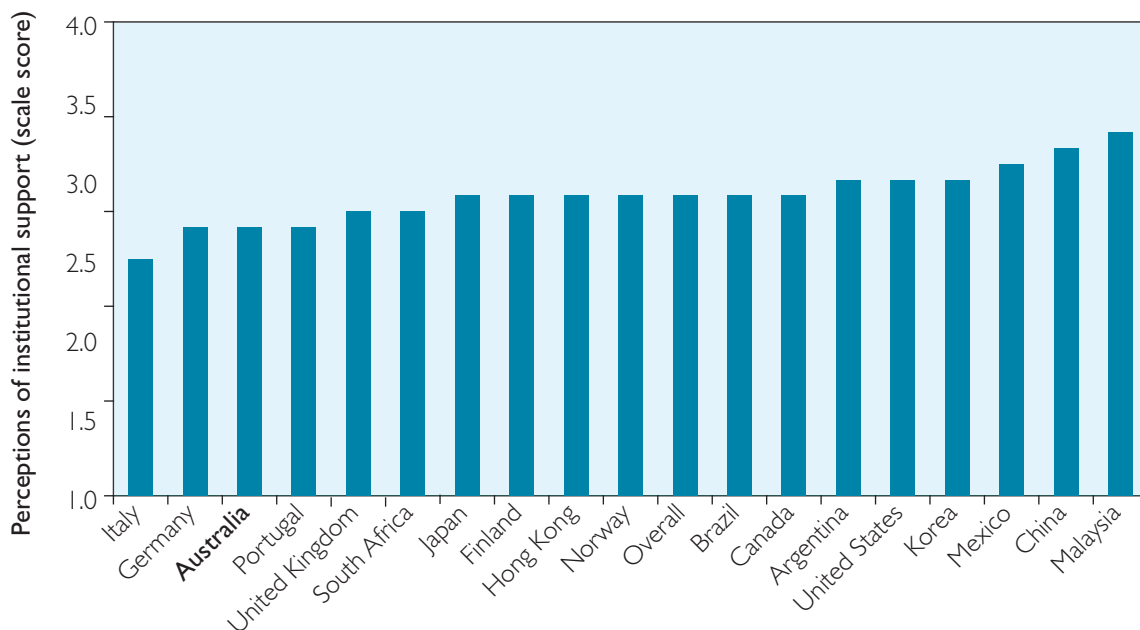


Figure 16 Perceptions of institutional support by country

Table 7 Fixed-term contracts by academic rank

| | Junior | | Middle | | Senior | |
|------------------|-----------|------------|-----------|------------|-----------|------------|
| | Permanent | Fixed term | Permanent | Fixed term | Permanent | Fixed term |
| Argentina | 71.9 | 28.1 | 75.5 | 24.5 | 69.1 | 30.9 |
| Australia | 53.0 | 47.0 | 22.8 | 77.2 | 21.2 | 78.8 |
| Brazil | 18.2 | 81.8 | 3.9 | 96.1 | 3.0 | 97.0 |
| Canada | 82.0 | 18.0 | 8.2 | 91.8 | 2.3 | 97.7 |
| China | 21.7 | 78.3 | 23.4 | 76.6 | 18.8 | 81.2 |
| Finland | 49.9 | 50.1 | 52.0 | 48.0 | 20.4 | 79.6 |
| Germany | 87.3 | 12.7 | 25.3 | 74.7 | 8.5 | 91.5 |
| Hong Kong | 92.1 | 7.9 | 83.9 | 16.1 | 27.5 | 72.5 |
| Japan | 26.6 | 73.4 | 11.1 | 88.9 | 9.4 | 90.6 |
| Korea | 81.4 | 18.6 | 66.2 | 33.8 | 4.2 | 95.8 |
| Malaysia | 7.8 | 92.2 | 8.0 | 92.0 | 17.0 | 83.0 |
| Mexico | 17.0 | 83.0 | 11.3 | 88.7 | 6.3 | 93.7 |
| Norway | 89.4 | 10.6 | 36.8 | 63.2 | 4.5 | 95.5 |
| Portugal | 94.4 | 5.6 | 55.0 | 45.0 | 14.8 | 85.2 |
| South Africa | 11.8 | 88.2 | 2.9 | 97.1 | 25.3 | 74.7 |
| United Kingdom | 27.2 | 72.8 | 2.3 | 97.7 | 0.9 | 99.1 |
| United States | 45.7 | 54.3 | 45.0 | 55.0 | 3.7 | 96.3 |

of facilities, Australian academics report among the lowest scores internationally, higher only than their Italian and German colleagues.

While academics in Australia report less confidence in institutional management and support, their perceptions regarding facilities are somewhat encouraging.

Contract conditions

Overall, 61.2 per cent of Australian academics report having a permanent contract. This puts Australia below the international average of 68.0 per cent and countries such as Japan (86.8%), the UK (81.9%), the USA (67.5%), Canada (67.1%) and Korea (61.5%), yet above Norway (56.0%), Finland (54.4%), Germany (42.2%) and Hong Kong (34.4%).

Table 7 reports the amount of fixed-term (as opposed to permanent) contracts for lower ranked (assistant and full lecturers), mid-ranked (senior lectures) and senior academics (associate and full professors), with countries sorted by the figures for junior staff. These figures vary slightly to those reported in Figure 3 due to the split across roles, as there is no classification of ‘casual’ in the CAP survey and there is likely to be slight measurement error associated with academics’ interpretation of the internationally agreed contract definitions along with errors of sampling. However telling patterns show clearly despite these methodological uncertainties. Broadly, while in certain countries such as Malaysia, Mexico and China there is little difference in the balance across positions between fixed-term and permanent contracts, there is a considerable disparity in Australia as there is in the UK, the USA, Korea and

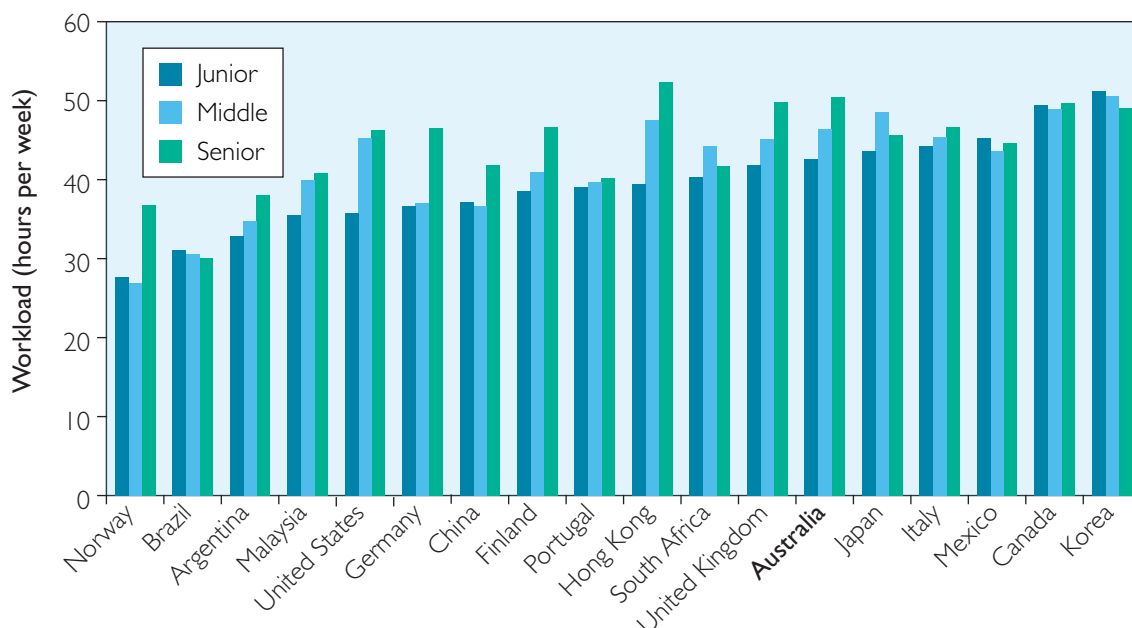


Figure 17 Total hours worked per week by country and rank

Canada. Among the 10 countries in this analysis, junior academics in Australia have the third lowest rate of employment on a permanent contract.

Workload

The CAP survey provided measurement of academics' workload. Specifically, it measured the number of hours spent on teaching, research, service, administration along with other academic activities. Figure 16 shows that Australian academics – both in junior and senior ranks – report among the highest number of hours worked per week among the countries so far included in the international study. Junior academics report working 43.8 hours, whereas senior academics report

50.4 hours worked per week. Indeed, senior academics report among the highest of any group internationally.

Drawing data from Williams (1979), McInnis (1996), Sheehan, Welch and Lacy (1996) and McInnis (1999), Table 8 clearly illustrates that since 1977 the average number of hours worked per week when classes are in session has increased by around 5 hours (about 10%). Interestingly, though, there has been no increase in working hours reported if we compare the 2007 study to the 1992 Carnegie study, despite a variety of claims of overload, pressures and the like. Over the full 30 year period the average number of hours dedicated to teaching has decreased by 5 hours, while the hours for research has increased by about 3 hours, with administration and service by about 2.5 hours per

Table 8 Average hours (and percentages) per week spent on major activities for full-time academic staff when classes are in session

| | 1977 | 1992 | 1993 | 1999 | 2007 |
|-------------------|-------------|-------------|-------------|-------------|-------------|
| Teaching | 23.3 (51.3) | 21.8 (43.1) | 25.3 (53.0) | 24.5 (49.8) | 18.3 (36.1) |
| Research | 11.5 (25.3) | 13.3 (26.3) | 10.1 (21.2) | 13.5 (27.3) | 14.6 (28.8) |
| Administration | 7.0 (15.4) | 8.4 (16.6) | 6.4 (13.4) | 7.7 (15.7) | 9.5 (18.7) |
| Community service | 1.9 (4.2) | 4.2 (8.3) | 1.8 (3.7) | 1.8 (3.7) | 4.4 (8.6) |
| Other activities | 1.7 (3.7) | 2.9 (5.7) | 1.1 (2.3) | 1.7 (3.5) | 3.9 (7.8) |
| Total | 45.4 | 50.6 | 47.7 | 49.3 | 50.6 |

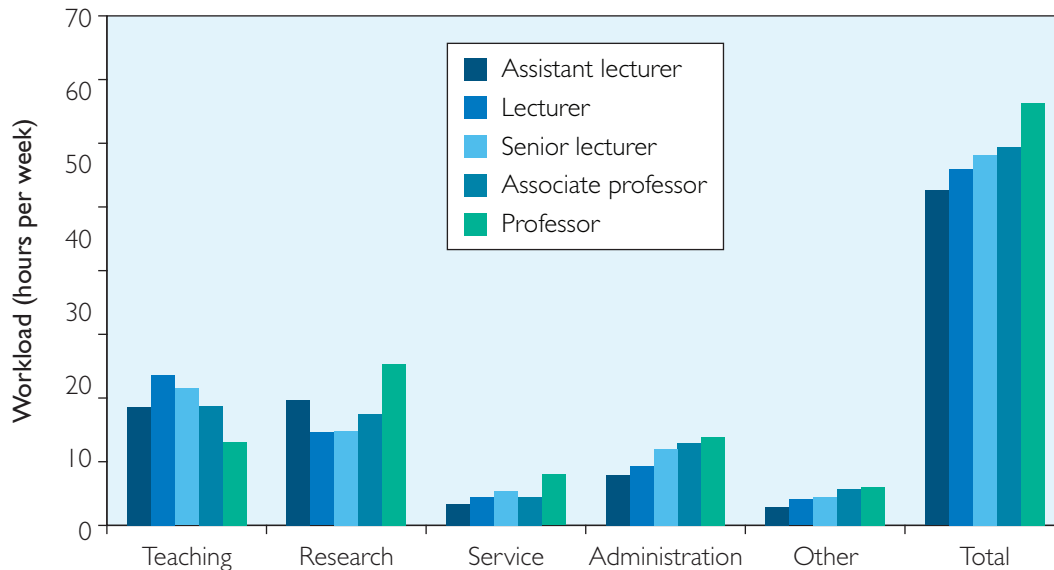


Figure 18 Work hours per week for academics in Australia by position when classes are in session

week. Yet, if we compare the early 1992 Carnegie with the 2007 CAP survey, in 15 years the only significant change has been the decrease in hours dedicated to teaching which becomes more pronounced if we look at the percentage figures.

A more detailed split of the hours for academics in Australia is given in Figure 17. These figures are

averaged across teaching and non-teaching periods. As indicated by Figure 11, work hours increase with rank. While the decrease in teaching hours is balanced by the increase in research, there is a steady increase in administrative duties along with a more modest increase in service and other commitments. Figure 18 shows how the average academic in Australia apportions their time across different work tasks.

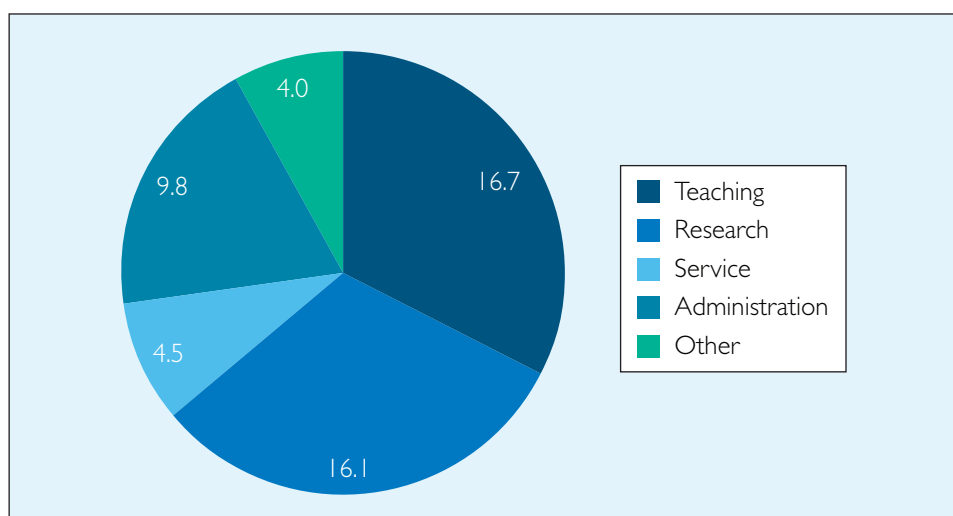


Figure 19 Distribution of work tasks per week for Australian academics

In 2007, the average number of hours worked by persons employed full-time across the whole of the Australian workforce per week was 39.4 hours (Australian Bureau of Statistics, 2008). Based on the CAP data, the academic workforce puts in more hours: 50.6 hours per week when classes are in session and 49.6 hours per week for non-teaching periods.

In summary, the figures suggest that compared with their peers in other countries Australian academics devote a significant number of hours per week to their work. Work hours are also high compared with the domestic workforce as a whole.

Weighing the odds

The above insights suggest that Australian academics earn salaries that are commensurate with their international peers but not compared to their Australian colleagues in other sectors, that they are less satisfied with their work than international colleagues and possibly other professionals in Australia, that they report one of the highest propensities for job change, that there is a disjunct between their preference for and participation in research, that they report one of the lowest levels of satisfaction with institutional management and support, that they sit slightly below the international average in terms of the extent of fixed-term contracts, and that they work among the longest hours – particularly those in senior ranks.

By way of summary, Table 9 presents correlations between many of the factors considered above and academics' reports that they have taken concrete actions

to move to another country or move outside academia. Of the seven factors listed, all except 'workload' are positively scored (assuming that it is more desirable to work less hours per week). Results are presented both for Australian academics and, the whole international sample. Bolded correlations are statistically significant at $\alpha=0.05$. These estimates are independent and have not been derived through simultaneous regression modelling.

Very few of the factors considered above are correlated with Australian academics' intentions to move to another country. There is a single statistically significant correlation for tenure status (the more likely the academic is to have a continuing position, the less likely they are to move to another country). It may be that the factors considered above are 'push' factors, and attempts to shift countries are motivated by 'pull' factors not considered in this paper like cultural experience, international networks or funding opportunities. Interestingly, there are different patterns for the overall international sample. These do not present an easily interpretable pattern, possibly given that the rationales underpinning international mobility are likely to vary across countries.

However, all of the factors considered in this paper except workload (measured as the number of hours worked each week) are linked with attempts to leave academia. The correlation of -0.14 means, for instance, that as salary increases so too does the desire to stay working as an academic. Lower levels of satisfaction are linked with attempts to leave the profession – the highest correlation overall. Less involvement in research, the lack of a continuous contract, lower

Table 9 Correlations between retention factors and mobility intention

| | Australia | | International | |
|-----------------------|-------------------------|-----------------------|-------------------------|-----------------------|
| | Move to another country | Move outside academia | Move to another country | Move outside academia |
| Total income | -0.03 | -0.14 | 0.07 | -0.04 |
| Satisfaction | -0.04 | -0.30 | -0.06 | -0.18 |
| Research activity | 0.10 | -0.14 | 0.13 | 0.02 |
| Continuous contract | -0.11 | -0.11 | -0.11 | -0.16 |
| Workload | 0.08 | -0.03 | 0.08 | -0.10 |
| Facilities | 0.02 | -0.18 | -0.01 | -0.07 |
| Environmental support | 0.02 | -0.18 | -0.10 | -0.13 |

quality facilities and less environmental support are linked with increased efforts to move. The same ‘push’ factors manifest with the international sample and, interestingly, the strength of the relationship is moderately stronger for the Australian context. This broad finding rounds out the more detailed analyses given in this paper, that Australian academics provide low reports of their experience compared with their international colleagues.

Figure 19 provides a summary of these results in the form of a traffic light report. In this, comparisons are made against academics internationally, and in terms of other professionals within Australia. For each factor, a green up arrow is provided where Australian academics have higher scores than the comparison group, an amber filled circle where the comparison is indeterminate or not available (unfilled circle), and a red down arrow where Australian academics have a lower score.

Clearly, the findings do not bode well for the future prospects of the academic profession in Australia. Read alone, the results suggest that conditions are

not conducive to encouraging new staff to enter the academic profession nor are they conducive for keeping existing staff enthusiastic and retained. If true, then given demand-side considerations this carries serious implications for sustaining and developing the academic profession. It suggests radical change is needed in the institutional climate within which academics operate. It also suggests that from an individual perspective this is more a matter of culture than of dollars. But from a systemic perspective clearly dollars need to be part of the equation as well.

Possible lines of action

The survey findings in combination with the additional statistical analyses presented above offer only one perspective on the academic workforce, and as far as the survey is concerned it represents an ‘interested’ perspective at that. Academics tend to be critical by profession, an attribute which may flavour the perceptions of this group over another. It would

| | Compared with academics internationally | Compared with other professionals |
|---------------------------------|---|-----------------------------------|
| Relative academic salary levels | ▲ | ▼ |
| Job satisfaction | ▼ | ▼ |
| Propensity for job change | ▼ | ○ |
| Opportunity for research | ▼ | ○ |
| Supportive environment | ● | ○ |
| Contract conditions | ● | ○ |
| Workload | ▼ | ▼ |

Figure 20 Summary report: attractiveness of the Australian academic profession

be unwise to form industry-wide policy on these perceptions alone. That said, however, there is not much more data available on which to form evidence-based insights. Also, the outcomes of the various empirical analyses consistently point in a similar direction: a crisis is looming and change is needed. While the above results shed important light on Australia's academic workforce, the more general contention of this paper is the need for more policy development, planning and research on Australia's academic workforce. In an attempt to contribute to thinking about ways forward, we end this briefing with some possible lines of action, realising that each one of them warrants much more elaborate treatment given their complexities and interrelationships. We start at the system level and then move to the institutional level.

Expanding staff numbers

From a system perspective there is no denying the fact that the move towards mass participation has not been matched with a sufficient increase in numbers of academic staff. The empirical evidence provided in this briefing paper points to the fact that in this respect the system may well have reached its limits. If the ambitious government targets for further expansion are to be met without a parallel increase in academic staff numbers it will be difficult to see how this cannot but lead to a deterioration of quality. This has nothing to do with the way our current or future quality assurance system operates, or whether Australia goes down the track of setting minimum standards. The results presented here essentially show that from a student/staff perspective the slack has gone out of the system. Government plans foreshadow relief in the medium term, but at the minimum one can ask the question of whether this is sufficient given the urgency of acting now. In suggesting that more resources are needed to meet the future challenges of repopulating and rejuvenating the academic profession we argue that these resources should not be used to increase salary levels but to increase the number of positions. The Australian university system needs more hands on deck.

Along side this is an evident need for careful succession planning. There are myriad unanswered questions in this area: What programs are in place to replace the current generation of senior academics with a new cohort? Have junior academics been given opportunities to experience and develop the skills required for more senior performance? What are the optimal ways to

identify talent and build capacity? Are there plans in place to sustain the expertise of departing senior staff, perhaps via casual appointments? Forming such questions into a careful line of analysis and developing an informed response would seem to be important for developing academic staff in Australian universities.

Streamlining accountability requirements

In order to get more qualified people into the profession it is paramount that its attractiveness be increased. One finding that clearly stands out in the survey results is the administrative burden that academics face, which takes them away from the core activities they still hold dear. Academics almost by definition hold a reserved view when it comes to the administrative estate that is part and parcel of the modern university. Much of the work that goes on in this domain is in response to increased accountability pressures from state and federal governments, and industry regulators. Accountability is an integral feature of any public system and Australia is no exception, however streamlining of federal and state reporting requirements could certainly diminish this burden.

It is important that new developments in this area reduce any such burden, particularly to the extent that quality assurance arrangements add to non-core workload and decrease perceptions of support. For the new Tertiary Education Quality and Standards (TEQSA) agency being established in Australia, this will be an important parameter to keep in mind. Quality assurance arrangements which reduce the attractiveness of the profession are unlikely to enhance the capacity of the education, institutions or the system overall. This is not just a job for each institution's continuous improvement. Rather, there would appear to be value in reflecting the 'quality of the academic experience' in the monitoring architecture itself. This could then serve as one basis for underpinning the growth of the workforce.

Of course accountability demands stem from sources other than regulatory requirements. The changing nature of teaching and learning along with a diversifying student body, for instance, has manifest in increased administrative demands on academics. Leading student learning has become a lot more complex in the last decade, requirement a consequent increase in the sophistication of its management.

Engaging the new generation of academics

The challenge of increasing the attractiveness of the Australian academic profession appears substantial overall, but particularly with respect to the younger generation. Efforts to attract, retain and train young academics need to be made on a variety of fronts. However, in a broad sense, three key issues are of crucial importance:

- attracting a greater number of high quality candidates to the PhD;
- increasing the completion rates of those who enrol in doctoral degrees; and
- encouraging a larger proportion of PhD completers to take up academic postings.

Attracting more students to the qualifications required for entering the academic workforce is closely linked to the conditions and incentives provided to students and their perception of their future employment prospects. Recent action by the Australian Government (2009b) has resulted in an increase to the stipend for students with scholarships to undertake a higher research degree and an increase in the overall number of scholarships granted. Developing mentoring schemes whereby senior academics mentor their junior counterparts could also play a role in this regard.

Such policies are designed to not only attract new students, but also to provide an impetus for increasing the likelihood that those who begin a research degree will complete it. The Australian Government's *Powering Ideas* policy document notes that the new policies 'will help Australian universities attract and retain high-performing research students and boost completion rates' (Australian Government, 2009b: 37). This may read well in a policy paper, but the harsh realities of the academic coalface discussed before cast a somewhat different perspective on this.

Attracting the best young researchers to remain in the university sector following completion of their degree is the third major hurdle mentioned above. According to figures from the 2006 ABS Census, analysed by Edwards et al. (2009: 39), 25.9 per cent of those with a doctorate who were employed in Australia in 2006 were working as 'University and Vocational Education

Teachers'. This reveals that there is a potentially a large group to draw into the higher education sector – if the conditions are right. In this respect the Australian Research Council Future Fellowship (ARC, 2009) scheme launched this year for mid-career researchers may be an example of an attempt to turn the tide and provide clear career perspectives. But despite its laudable objectives, much hard and creative policy work lies ahead to mainstream programs like this in the face of increased world-wide competition for the most promising brains.

Increasing understanding of the casual workforce

Moving from research to teaching, this paper paints a clear need for developing further policy insight on the nature and implications of the casualisation of the Australian academic workforce. This should develop better information on the characteristics of the Australian workforce – on who they are, it should identify if these people have the capacity to replenish the current workforce, and it should identify if the current 'casuals' even want to work as tenured academics or whether in fact they enjoy the flexibility of their position.

While central to a key national industry, myriad uncertainties surround these matters. It remains unclear, for instance, whether the current pool of casual staff would be sufficiently well prepared to take on a mainstream academic role. Presumably some may be casual because they have not been considered competitive for academic posts or are still completing the formal qualifications required to become a fully-fledged academic. While programs are taking shape, casual staff have not usually had the opportunity to benefit from the kinds of professional learning opportunities available to tenured staff. Their peripheral or contingent involvement in institutional learning communities may inhibit their capacity to develop coordination and management skills.

Stimulating mission diversity

Clearly, a 'one size fits all' approach to renewing the Australian academic profession will not work. While

it appears that the majority of academics aspire to a research career, it is also apparent that most academics will spend most if not all of their time doing teaching. As suggested by the CAP data, and as we have argued elsewhere (Goedegebuure et al. 2009: 60), “there appears to be a misalignment between aspirations, activities and achievements” of many academics. A partial solution to this problem would be to re-think the reward structures for teaching and research, with the intention of putting both on an equal footing (something discussed but not achieved over several decades). But we would argue that this is not possible so long as the pretence of a teaching/research nexus remains a fundamental symbolic aspect of Australian higher education.

In the last few years a few universities have introduced a teaching only staff classification. This may have an impact on improving the status of a teaching intensive research career trajectory. But it still does not solve the fundamental problem of competition for staff and resources in either the teaching or research areas. An obvious (if not inconvenient) truth is that no country can afford to fund all of its higher education institutions as world-class research intensive universities. And it is highly likely that the world-wide competition for the best researchers and research teams will become even more intense and expensive. Only a few institutions will have the resources to engage successfully in this competition.

Without some form of formal differentiation of universities by mission broadly along the lines of being teaching or research intensive, most universities will be left in a position of winning few of the research spoils while nonetheless diverting attention and resources from teaching in order to engage in the competition. On the other hand, institutions with an explicit and uninhibited mission of being teaching intensive may be in an advantageous position, particularly in terms of attracting and cultivating the majority of academics who will spend most of their careers dedicated to teaching. There is not space here to fully develop this argument, but suffice it to say that the issue of diversity is one of the most important facing the future of Australian higher education and that of the women and men who will devote their careers to it.

Of course, along with institutions individual academics may also choose to become ‘teaching only’ in their focus. Indeed, this is very likely to already be the case given the high level of casualisation in the workforce.

There is a major need to develop a structure for understanding and supporting this development. This structure should take the form of a set of calibrated industry-wide professional standards for university teaching, document a series of methods for assessing performance against these standards (most notably, evidence on the quality of student engagement and achievement), and provide a harmonised approach to professional learning (very likely by aligning university-specific certificates). This structure would provide a foundation for ensuring that minimum standards have been met, and ensuring portability of academics’ experience. The cross-institutional nature of this structure is important given the mobility of academics, particularly those who have casual appointments. The structure could build on parallel developments underway in schools, and substantially augment the current approach which is based on one-off awards not tied to specified professional standards.

Building institutional leadership capability

The challenges facing Australian universities are vast and complex. Hence they will require clear leadership devolved from the top throughout the institution. It is worrying that Australian academics – together with their British colleagues – are the least complimentary when it comes to the leadership and management of their institutions. One possible explanation for this is that in these two countries the higher education systems have been driven through the most profound government induced changes anywhere in the developed world, with the possible exception of the transformation taking place in China. The prevalent New Public Management ideologies underlying these changes have changed management practices in both systems, though not necessarily to what commonly is referred to as ‘managerialism’ (Meek, Goedegebuure, Carvalho & Santiago, 2009). Restructuring is the order of the day in many Australian universities, and of course one can find examples of failed or under-delivering policies in this respect. Yet it would not do justice to the commitment of many in leadership and management positions in our universities to simply point to the executives as the root of all evil.

What it does show is the increased need for management and leadership styles that are aligned with the specific nature of the university. As a major industry, higher education requires serious management. At the same time it is an organisational type *sui generis*,

characterised by professional autonomy, multiple missions, organisational fragmentation and devolved decision making. These have been the classic university characteristics and despite environmental changes, still need to be taken into account. It is through academic management and leadership that institutional fabrics and organisational sagas (Clark, 1972) are created and research points to the importance of this for the profession (Birnbaum, 1989, 2000). This statement is not a nostalgic call for 'the good old days', if ever these existed. Rather it points to the sophistication needed to create a stimulating and challenging institutional environment in which the academic profession can continue to thrive in order to keep making its pivotal contributions to the Australian society and the international academic community.

References

- American Association of University Professors (AAUP) (2008). *AAUP Faculty Salary Survey*. Accessed 1 July from: <http://chronicle.com/stats/aaup>.
- Australian Bureau of Statistics (2009). *Measures of Australia's Progress*. Accessed 1 July from: <http://betaworks.abs.gov.au/betaworks/betaworks.nsf/projects/MeasuresOfAustralia'sProgress>
- Australian Business Deans Council (ABDC) (2008). *Business as usual: final report*. Sydney: Carrick Institute.
- Australian Council for Educational Research (ACER) (2009). *Staff Survey of Student Engagement (SSES)*. Camberwell: ACER.
- Australian Education International (AEI) (2009). *Export income to Australia from education services in 2008. Research Snapshot June 2009*. Canberra: AEI.
- Australian Government. (2009a). *Transforming Australia's Higher Education System*. Canberra: Department of Education, Employment and Workplace Relations.
- Australian Government. (2009b). *Powering Ideas: An Innovation Agenda for the 21st Century*. Canberra: Department of Innovation, Industry, Science and Research.
- Australian Research Council (ARC) (2009). *Future Fellowships Scheme*. Accessed 1 July from: http://www.arc.gov.au/ncgp/futurefel/future_default.htm
- Birnbaum, R. (1989). *How Colleges Work: the Cybernetics of Academic Organization and Leadership*. San Francisco: Jossey-Bass.
- Birnbaum, R. (2000). *Management fads in Higher Education. Where they come from, what they do, why they fail*. San Francisco: Jossey-Bass.
- Birrell, B. & Edwards, D. (2009). The Bradley Review and access to higher education in Australia. *Australian Universities' Review*, 51(1), 4-13.
- Bradley, D., Noonan, P., Nugent, H. & Scales, B. (2008). *Review of Higher Education in Australia: Final Report*. Canberra: Australian Government.
- Clark, B.R. (1972). The Organizational Saga in Higher Education. *Administrative Science Quarterly*, 17(2), 178-184.
- Coates, H., Goedegebuure, L., van der Lee, J. & Meek, L. (2008). The Australian academic profession: A first overview. *The Changing Academic Profession in International Comparative and Quantitative Perspectives. Report of the International Conference on the Changing Academic Profession Project, 2008*. Hiroshima University: Research Institute for Higher Education.
- Considine, M., Marginson, S., Sheehan, P. & Kumnick, M. (2001). *The Comparative Performance of Australia as a Knowledge Nation: Report to the Chifley Research Centre*. Melbourne: Monash Centre for Research in International Education.
- Dawson, N. (2007). Post Postdoc: Are New Scientists Prepared for the Real World?, *Bioscience*, 57, 16.
- Department of Education, Employment and Workplace Relations (DEEWR) (various years). *Higher Education Staff Collection*. Canberra: DEEWR.
- Edwards, D. (forthcoming). The future of the research workforce -- estimating demand for PhDs in Australia. *Journal of Higher Education Policy and Management*, 32.

- Edwards, D. & Smith, T.F. (2008a). *Consultation Report: Supply, demand and approaches to employment by people with postgraduate research qualifications in science and mathematics*. Canberra: Department of Education, Employment and Workplace Relations.
- Edwards, D. & Smith, T.F. (2008b). *Literature Review and Data Analysis, Supply, demand and approaches to employment by people with postgraduate research qualifications in science and mathematics*. Canberra: Department of Education, Employment and Workplace Relations.
- Edwards, D., Radloff, A. & Coates, H. (2009). *Supply, Demand and Characteristics of the Higher Degree by Research Population in Australia*. Canberra: Department of Innovation, Industry, Science and Research.
- Goedegebuure, L., Coates, H., van der Lee, J. & Meek, V.L. (2009) Diversity in Australian higher education: an empirical analysis. *Australian Universities Review*, 51(2), 49-61.
- Glanz, J. (1998). Young physicists despair of tenured jobs. *Science*, 279(5354), 1128.
- Halyard, R.A. (1995). Special challenges for nineties' scientists--The meaning for college science teaching. *Journal of College Science Teaching*, 24(4), 225.
- Harmam, G. (2003). Australian academics and prospective academics: Adjustment to a more commercial environment. *Higher education Management and policy*, 15(2), 105-122.
- Harman, G. & Meek, V.L. (2007). Key challenges to the academic profession in Australia: Adjustment to the new management and entrepreneurial environment. In Locke, W. & Teichler, U. (Eds.) *The Changing Conditions for Academic Work and Career in Selected Countries*. Kassel: University of Kassel.
- Harman, G. (2000). Academic work and values in Australian higher education, 1977 to 1997. In Tight, M. (Ed.) *Academic Work and Life: What it is to be an academic, and how this is changing*. Amsterdam: Elsevier.
- Horsley, M. & Woodburne, G. (2005). *Australian Academic Salaries Time Series Project 1977-2002*. Canberra: DEEWR.
- Horsley, M., Martin, G. & Woodburne, G. (2005). *Salary Relativities and the Academic Labour Market*. Accessed 17 August from: http://www.dest.gov.au/sectors/higher_education/publications_resources/profiles/salary_relativities.htm#publication
- Hugo, G. (2005a). Academia's own demographic time-bomb. *Australian Universities Review*, 48(1), 16-23.
- Hugo, G. (2005b). Demographic trends in Australia's academic workforce. *Journal of Higher Education Policy and Management*, 27(3), 327-343.
- Hugo, G. (2005c). Some emerging demographic issues on Australia's teaching academic workforce. *Higher Education Policy*, 18(3), 207-230.
- Hugo, G. (2008). *The demographic outlook for Australian universities' academic staff*. CHASS occasional paper no. 6. Adelaide: Council for Humanities, Arts and Social Sciences.
- Huisman, J., de Weert, E. & Bartelse, J. (2002). Academic Careers from a European Perspective. *Journal of Higher Education*, 73(1), 141-160.
- Huisman, J., de Weert, E. & Bartelse, J. (2002). Academic Careers from a European Perspective. *Journal of Higher Education*, 73(1), 141-160.
- Kidd, J. M., & Green, F. (2006). The careers of research scientists: Predictors of three dimensions of career commitment and intention to leave science. *Personnel Review*, 35(3), 229-251.
- Kubler, J. & C. DeLuca (2006). *Trends in academic recruitment and retention: A Commonwealth perspective*. London: The Association of Commonwealth Universities.
- Kubler, J. & Lennon, M. C. (2007). *2006-07 Academic Staff Salary Survey*. London: Association of Commonwealth Universities.
- Lambeck, K. (2009). Internationalisation of Australian Science. *National Press Club Address, September 9*. Accessed September 10 from: <http://www.science.org.au/events/lectures-and-speeches/lambeck.htm>
- Laudel, G. & Glaser, J. (2008). From Apprentice to Colleague: The Metamorphosis of Early Career Researchers. *Higher Education: The International Journal of Higher Education and Educational Planning*, 55(3), 387.

- Lazarsfeld Jensen, A. & Morgan, K. (2009). *Overload: the role of work-volume escalation and micro-management of academic work patterns in loss of morale and collegiality at UWS: The way forward*. South Melbourne: NTEU.
- Leggon, C. B. (2001). The Scientist as Academic. *American Academic Profession*, 221.
- Long, A. (2005). Happily Ever After? A Study of Job Satisfaction in Australia. *The Economic Record*, 81(255), 303-321.
- McGinnis, R., Allison, P. D., & Long, J. S. (1982). Postdoctoral Training in Bioscience: Allocation and Outcomes. *Social Forces*, 60(3), 701-722.
- McInnis, C., Hartley, R., & Anderson, M. (2001). *What did you do with your science degree? A national study of employment outcomes for science degree holders 1990-2000*. Parkville: Australian Council of Deans of Science.
- Meek, V.L, Goedegebuure, L., Carvalho, T. & Santiago, R. (Eds.) (2009). *The Changing Dynamics of Higher Education Middle Management*. Dordrecht: Springer.
- Metcalf, H., Rolfe, H, Stevens, P. & Weale, M. (2005). *Recruitment and Retention of Academic Staff in Higher Education*. Nottingham: National Institute of Economic and Social Research. Accessed 17 August from: <http://www.dcsf.gov.uk/research/data/uploadfiles/RR658.pdf>
- Monastersky, R. (2007). The Real Science Crisis: Bleak Prospects for Young Researchers. *Chronicle of Higher Education*, 54(4).
- New Zealand Vice Chancellors Committee (NZVCC) (2008). *University Staff Academic Salaries and Remuneration: A comparison of New Zealand and selected international (Australia, Canada, England, USA) data*. Wellington: NZVCC.
- Nolch, G. (2001). *Why do a science degree? Australasian Science*, 22(8), 35-39.
- OECD (2008). *Tertiary Education for the Knowledge Society; Vols. 1 & 2*. Paris: OECD.
- Paldy, L. G. (1994). Employment patterns of scientists and engineers in the 90s. *Journal of College Science Teaching*, 23(4), 196.
- Percy et al. (2008). *The RED Report. Recognition, Enhancement, Development*. Sydney: Australian Learning and Teaching Council.
- Productivity Commission (2007). *Public Support for Science and Innovation: Productivity Commission research report*. Canberra: Australian Government.
- Robinson, P. (2006). *The Status of Higher Education Teaching Personnel in Australia, Canada, New Zealand, the UK, and the United States*. Brussels: Education International.
- Trow, M. (2000). From Mass Higher Education to Universal Access: The American Advantage. *Research and Occasional Paper Series: CSHE.1.00*. Berkeley: CSHE.
- Williams, B. (1979). *Education, Training and Employment: Report of the Committee of Enquiry into Education and Training*. Canberra: Australian Government Publishing Services.

We would like to acknowledge the academics that took the time to respond to the Changing Academic Profession survey, many of who did so with great detail and passion. We are grateful to the team at INCHER-KASSEL for their support in coordinating this project and their ongoing work in preparing the international datasets. The authors are also grateful to several people who provided very helpful feedback on an earlier version of this briefing.

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ISBN: 978-0-86431-933-3

Design by ACER

Printed in Australia by Printgraphics