Brain drain and brain gain: the challenges of internationalisation

Brain Drain: Fact or Fiction?

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It seems to have become conventional wisdom that Australia is permanently losing many of the most highly skilled members of its professional workforce. In addition, there is continued uncertainty about Australia’s position in the global market place for skilled workers. However, analysis of immigration records over the period 1995/96 to 2003/04 shows that in fact there has been a rapidly growing net gain from the international movement of skilled workers. Although there is a net loss of Australian residents, that loss is exceeded by net gains of long term visitors and permanent residents (settlers) moving to Australia. As well, thousands of former overseas students are obtaining permanent residence in Australia after completing their studies in Australia. There is further concern that it is the ‘best and brightest’ Australians who are quitting the country. However, a study of the movement of persons with PhDs indicates that Australia is losing relatively few of its recent graduates. Much of the movement of Australian residents abroad represents the longstanding keenness of young Australians to see the world. This paper reports on the situation in professional occupations overall, including science and technology occupations and university staff.
Introduction
In Australia as in many other countries, there is on-going concern that the best and brightest are leaving to graze on the greener pastures which apparently lie elsewhere (particularly in the United States). The sociological term ‘diaspora’ is now in common usage to describe the alleged outflow of Australians. The report ‘Skilled Labour: Gains and Losses’ (Birrell et al, 2001) took a sceptical approach to the concerns about an Australian ‘brain drain’. Based on analysis of immigration statistics, the report noted that the ‘losses’ “did not warrant any ‘brain drain’ hysteria…. the loss of skilled labour was more than compensated for by inflows of settlers and a substantial net gain of long-term temporary residents who reported they were skilled when they entered or left Australia” (Birrell et al, 2004:1).

The perceived exodus of scientists is an issue in Europe as well. In 2002, six European Nobel laureates ‘demanded EU action to stem the brain drain to the US’, demanding that research funds be doubled. They claimed that the EU’s target to increase research spending from 2% to 3% of GDP by 2010 was inadequate (Hagan, 2002). However, the German Ministry for Education and Research denied that brain drain was a major problem (Stafford, 2003). Germany and France, in fact, were actively recruiting science students from countries due to become EU members from May 2004. Apparently, 70% of science undergraduates from Bulgaria and other countries were actively contemplating leaving Bulgaria after graduation (Scott, 2004). Something Germany perhaps has in common with Australia is an absence of data to support allegations of a brain drain. However, a survey of German Research Foundation (DFG) fellowship recipients conducted in 2002/2003 found that the majority (about 85%) returned home (Stafford, 2004a; 2004b). If most German scientists return home, and if foreign scientists are being attracted from elsewhere, perhaps Germany also has a net ‘brain gain’.

In the Australian case, an increase in the late 1990s of Australian professionals leaving permanently or long-term set some scholars contemplating the effects of an ongoing loss of highly qualified persons. Media reports of a ‘brain drain’ though are “largely based on anecdotal accounts of high level scientists, computing professionals and others being attracted to the United States…There is a reciprocal concern that Australia will not be able to attract highly skilled migrants because of the competitive advantage of locations like the United States” (Birrell et al, 2001:7). Nobel laureate Professor Peter Doherty has stated that Australia now loses many more of its high quality people than in the past. Doherty notes that “…the relatively minor drain of talent from the scientific and academic communities [in the past] has broadened to a flood of people with a diversity of technical and business expertise. What we are dealing with is, of course, the globalisation of the marketplace for clever and highly effective people in every area of human endeavour…there is an intense, global competition to recruit and retain the best and brightest” (reported in Wood, 2004:1). Such observations are rarely supported by more than anecdote.

Other commentators have suggested that Australia is heading for a future shortfall in people with the scientific training necessary for the knowledge economy. Peter Andrew, chief scientist for the state of Queensland, for example, says “…the total need for a knowledge-based industry in Australia is on the order of 75,000 additional scientists by 2010” (Wood, 2004:50). Andrew goes on to consider the impact of the ‘brain drain’, in light of the increased demands for scientists in the USA and Europe, and what he describes as the ‘brain losses, the propensity for students to study ‘soft’ rather than ‘hard’ science (reported in Wood, 2004:50). The ‘brain loss’ argument has concerned others in Australia, to the point that the

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1 Data used for these analyses related to persons arriving in or leaving Australia on a permanent or long-term basis, including New Zealanders. The principal data source is the passenger cards filled in by people arriving or leaving Australia. Long-term arrivals are persons stating an intention of staying in Australia for a year or longer. Long-term departures are persons stating an intention to reside abroad for a year or longer (in the case of Australian residents), or in the case of visitors, to those were leaving Australia following a stay of one year or longer.
Australian Council of Deans of Science (of Australian universities) commissioned two reports to assess the extent of decline in science teaching (see http://www.ACDS.edu.au).

No one disputes that many Australians travel abroad at some stage of their life. It is also the case that some of these do not return. As noted by Immigration Minister the Hon Senator Amanda Vanstone, “Australians have always had strong ties, and many who were born here have spent some part of their lives in other countries. Conventionally, young Australians see the world as a prelude to returning home to settle down. However, there has also been a relatively small number of Australians who for various reasons, never return to live” (Hugo et al, 2003:3). Many commentators emphasise the outflow of Australians, but rarely comment on the extent of their return, or the scales of flows into Australia on the part of settlers or visitors coming to Australia with employment rights.

**Significance of the net loss of skilled residents**

Australia loses a considerable number of its professional and other skilled residents each year. Table 1 shows the numbers of residents leaving or returning to Australia over the eight year period from 1995/96 to 2002/03. As can be seen, a net total of almost 223,000 residents with a stated occupation left the country for elsewhere. Nearly 95,000 of these were professionals, including about 4,369 natural and physical science professionals and 2,964 university lecturers and tutors.

It has been the outflow of those in these professional occupations which has caused most concern. The extent of the outflow of resident professionals seems to be waning, though. A recently published report notes that the net loss of professionals had been 17,586 in 2000/01 and that the number had declined by 27% to 12,817 in 2003/04 (Birrell, Rapson & Smith, 2005:8). Other research has shown that a sizeable minority of persons marking the ‘permanent departure’ box on the passenger card compulsorily completed by everyone leaving Australia in fact do not leave Australia permanently (Birrell, Rapson & Smith, 2005:7, citing the work of Osborne).

<table>
<thead>
<tr>
<th>Residents Stating an Occupation Leaving or Returning to Australia 1995/96 - 2002/03</th>
<th>Residents Leaving</th>
<th>Residents Returning</th>
<th>Net Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers &amp; Administrators</td>
<td>97466</td>
<td>53838</td>
<td>-43628</td>
</tr>
<tr>
<td>Professionals:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural &amp; Physical Science Professionals</td>
<td>10806</td>
<td>6437</td>
<td>-4369</td>
</tr>
<tr>
<td>Mathematicians, Statisticians &amp; Actuaries</td>
<td>591</td>
<td>305</td>
<td>-286</td>
</tr>
<tr>
<td>Medical Practitioners</td>
<td>8021</td>
<td>5869</td>
<td>-2152</td>
</tr>
<tr>
<td>Nursing Professionals</td>
<td>21183</td>
<td>14646</td>
<td>-6537</td>
</tr>
<tr>
<td>School Teachers</td>
<td>39236</td>
<td>25776</td>
<td>-13460</td>
</tr>
<tr>
<td>University Lecturers</td>
<td>6689</td>
<td>3725</td>
<td>-2964</td>
</tr>
<tr>
<td>Other Professionals</td>
<td>198059</td>
<td>133178</td>
<td>-64881</td>
</tr>
<tr>
<td>Total Professionals</td>
<td>284585</td>
<td>189936</td>
<td>-94649</td>
</tr>
<tr>
<td>Associate Professionals</td>
<td>56827</td>
<td>38885</td>
<td>-17942</td>
</tr>
<tr>
<td>Tradespersons</td>
<td>45201</td>
<td>33995</td>
<td>-11206</td>
</tr>
<tr>
<td>Total Skilled Occupations</td>
<td>484079</td>
<td>316653</td>
<td>-167426</td>
</tr>
<tr>
<td>Other Occupations</td>
<td>152344</td>
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</tr>
<tr>
<td>Total</td>
<td>636423</td>
<td>413570</td>
<td>-222853</td>
</tr>
</tbody>
</table>

Source: DIMIA Overseas Arrival and Departures (unpublished); Birrell et al (2004), Table 5a.
This loss of about 95,000 trained Australian professionals between 1995/96 and 2002/03 may seem substantial. As stated by Birrell et al (2004:20), “a substantial loss of skilled Australian residents...naturally causes concern because it means the departure of people who have been trained at the Australian community’s expense”. They go on to note that “[M]uch of the commentary on Australian resident losses implies that it is caused by the unwillingness of Australian employers to compete in the market place for skilled workers against overseas competitors....While a plausible hypothesis, there are other possible explanations....” (Birrell et al, 2004:20). However, the outflow of professionals does not seem as drastic when taken as a proportion of the stock of employed professional persons. In the five years from 1998/99 to 2002/03, 5% of Australian resident professionals left Australia permanently or long-term, including a net outflow of 3,460 natural and physical scientists (7%) and 2,541 university lecturers and tutors (8%). The largest numbers leaving were nursing professionals (4,789: 3%) and teachers (12,671: 5%) (Birrell et al, 2004: Table 8).

There are three major reasons for the outward movement of residents. The first reason is that it is part of the phenomenon, well known in Australia, of the young (in particular) going away ‘to see the world’. This exodus and subsequent working abroad could reflect the desire to gain work experience, or it might relate to taking work overseas to defray living and travelling expenses whilst abroad.

About 35% of resident professionals have the United Kingdom as their destination. The great majority of this group return to Australia within two years. While 26,099 resident professionals left Australia for the United Kingdom in the period 1999/2000 to 2000/01, 22,354 returned in the subsequent period 2001/2 to 2002/3. These two figures suggest an overall return rate of about 86% (Birrell et al, 2004:Table 10). Country of birth is a relevant variable in the calculation of resident return rates. The majority of departing/returning residents were born in Australia (76% of the total) and the United Kingdom (12%).

Another possible explanation for the outflow of residents is that it is composed in part of recently arrived migrants. Since these migrants have fewer ties to Australia, if opportunities improved in the countries from which these settlers came, they might leave Australia, never to return. Birrell et al (2004:25) conclude that “[O]verall, the rate of departure for overseas-born professionals is markedly higher than for the Australia-born (11% c.f. 8%). But these departures are largely balanced by relatively high rates of return on the part of overseas-born persons who are Australian residents”.

A third reason is that the outflow is simply a reflection of a dynamic international labour market. This view is further supported by the overall orientation of residents leaving Australia for first world economies. In fact, the outflow of resident professionals in the three year period from 2000/01 to 2002/03 was predominantly to the United Kingdom (35%) and the USA (12%). The next largest destinations of attraction to departing resident professionals were Hong Kong (7%) New Zealand (6%) Singapore (5%) and Japan (5%). Losses to Western Europe were relatively low (about 4%) (Birrell et al 2004:26, calculated from Table 12).

Despite Australia’s losses of resident professionals, it is no indication of a disastrous ‘brain drain’. Such losses are inevitable in a globalised world, and every country loses some of its natives.

**Inflow of workers**

Although resident loss is perhaps inevitable in today’s global economy, there is a reciprocal inflow of skilled workers. If Australians move off shore to work, some never to return, it is also the case that there is an inflow of similarly qualified people from overseas. The fact that the Australian Government deregulated aspects of the temporary entry visa system in 1996 has meant that it is relatively simple for an Australian employer to sponsor skilled workers for up to four years.
The inflow to Australia’s labour force comes from two sources: settlers and long-term visitors, also known as temporary residents. The principal reason for growth in settler numbers has been the expansion of a range of skilled migrant immigration schemes. Table 2 (below) shows that settlers numbered 339,885 over the eight year period 1995/96 to 2002/03, including 135,501 professionals.

Long-term visitors to Australia also provide an important source of skilled workers. Over the period 1995/96 to 2002/03, a net 154,000 long term visitors were added to the Australian labour force. Of these, nearly 72,000 were in professional occupations. The rise in long-term visitors with work rights in Australia reflects decisions by successive governments to aid employers in recruiting overseas workers on a temporary resident basis. Many long-term visitors come to Australia from companies with branches in Australia. Largest numbers of long-term visitors come from the United Kingdom, Germany, North America, Japan and South Africa.

Table 2 summarises the three streams which make up the net international movement of the work force. The negative flow of Australian residents is more than compensated for by the positive flows of settlers and long-term visitors. In the six years to 2002/03, it can be seen that rather than there being a net outflow of workers, Australia experienced a strong net inflow. This inflow is particularly strong among professionals, the net flow of whom was 112,000 over the 1995/96 to 2002/03 period. Australia, therefore has been experiencing a ‘brain gain’, which is continuing. More recent figures indicate that in 2003/04 the net inflow of professionals was over 27,000 (Birrell, Rapson & Smith, 2005: 4).

Another increasing source of skilled labour must be added to these figures. Table 2, based on analysis of data collected from persons departing or arriving in Australia, does not include the considerable, and increasing number of non-residents who are already in Australia when they apply to become Australian residents. The main source of the on-shore increase in settlers comes from fee-paying overseas students who apply for residency once they have completed their courses, taking advantage of government incentives aimed at getting them to do so. The number of principal applicants receiving skilled visas on-shore increased from 5,480 in 2001/02 to 11,460 in 2003/04 (Birrell, Rapson & Smith, 2005:5). The number of settlers from this source is likely to continue to increase as long as the migration program continues to facilitate the process.

The end of the story?
An argument put in support of an Australian alleged brain drain is that Australia’s net loss of residents comes disproportionately from those with the highest qualifications. In recent years, there has been a rapid increase in the number of persons completing PhD degrees. This is particularly the case in the physical and life sciences, medical science and engineering.

In order to test the proposition, Birrell et al (2004: 45) examined Census data and figures published by the Department of Education, Science and Training concerning persons holding PhD qualifications. After allowing for the stock of PhD holders at the time of the 1996 Census, the number of PhDs granted in Australia between 1996 and 2001 and the inflow and outflow of PhD holders, they calculated that even at the PhD level, Australia has been the beneficiary of a ‘brain gain’, to the tune of about 1,730 in the five year period between the Censuses held in August 1996 and 2001 (Birrell et al, 2004:45).
This analysis of inflows and outflows of professional workers indicates that far from there being a ‘brain drain’, Australia has experienced a substantial net gain of skilled persons from international movements. There has been an increase in the number of Australian residents leaving Australia long-term or permanently, and there is no denying that this outflow does represent a loss of Australian talent. However, the numbers leaving have dropped in the last couple of years. But this outflow is compensated for by the simultaneous impact of more overseas persons coming to Australia. Government policy and practice is facilitating this inflow. In many cases, the loss of residents from Australia is a temporary thing, and those who return to Australia bring overseas experience and links to overseas networks back with them. The Australian media highlight an Australian ‘diaspora’ of up to one million, or about 5% of the resident population. These reports never provide the equivalent figure of overseas-born persons residing in Australia, which number about 4.5 million, or 23%.

Some proponents of the ‘brain drain’ argument (particularly in the case of scientists) blame the alleged exodus on inadequate levels of funding for research. As noted earlier, this is a reason also put forward as an explanation for the ‘brain drain’ in Europe. For highly qualified persons, ‘low’ levels of research funding could be part of the reason for their leaving Australia, but this component of the outflow of professionals is miniscule. In the Australian case, perhaps the expenditure would be higher if the private sector increased its relatively low level of support provided for research. According to OECD figures, 46.4% of research in Australia is funded by industry, compared with the OECD average of 61.6% (OECD, 2005).

For those who choose to stay overseas, whatever the reason, there are still possible gains for Australia. Australia, in common with most countries of the world, has a number of high-flying professionals who have become important players in business or civic endeavours overseas. There is no reason why Australia could not make use of such people to advance the nation’s cause. As noted by a Lowy Institute report,
“Australia’s offshore citizens represent a valuable resource: a market, a sales force, an ambassadorial corps and a constituency….The hope is that our opinion leaders and policy makers will catch on soon, and craft some modest but intelligent policies to encourage Australian institutions to harness this national asset” (Fullilove & Flutter, 2004). Perhaps Australia could aspire to this, but any analysis of a ‘brain drain’ has to take into account both sides of the migration equation: outflows and inflows.

References


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