THE 40 PER CENT DEGREE-QUALIFIED TARGET: HOW FEASIBLE?

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The Australian Government has made a commitment to increase the level of higher education training in Australia. Its target by 2025 is that 40 per cent of all 25- to 34-year-old Australians will possess degree qualifications or above (from 29 per cent in 2006). This article examines whether this target is feasible. Various assumptions about domestic enrolment and immigration are modelled which take account of ageing-into and ageing-out of the 25- to 34-year-old cohort. The conclusion is that the 40 per cent target is very unlikely to be achieved because it would require an increase of at least 50 per cent in domestic undergraduate completions by 2020 and a sharp rise in immigration.

The Review of Australian Higher Education (the Bradley Report), published in December 2008, recommended as a target that 40 per cent of 25- to 34-year-olds should have attained at least a bachelor-level qualification by 2020. It went on to say that: 'This will be quite testing for Australia as current attainment is 29 per cent' [referring to data for 2006].[1] On 4 March 2009, the then Education Minister, Julia Gillard, presented the Labor Government's response to the Review. She said that the Government accepts this challenge, though the target date was pushed out to 2025. 'I announce today that our ambition is that by 2025, 40 per cent of all 25- to 34-year-olds will have a qualification at bachelor level or above ... Today that figure stands at 32 per cent' [referring to data for 2008].[2] The Minister also left no doubt that this ambition was directed towards enhancing opportunities for young Australians in the higher education sector. Immigration did not get a mention.

This is a welcome commitment. For too long, official thinking about skill training in Australia has been sidetracked by industry and some academic claims that the focus should be at the trade level. Yet the Australian economy is restructuring towards the service industries, where skill needs are heavily oriented towards those with professional qualifications—almost all of which these days require a university degree as a minimum entry level.[3] This is documented in Table 1, which shows that, by 2006, 77 per cent of the persons aged 25 to 29 who were employed in professional occupations held degree qualifications. This compares with 62 per cent of professionals aged 50 to 54 years. When this trend is combined with the rapid growth in professional jobs, it is easy to see why it is so important that young Australian job seekers should be given the opportunity to gain degree qualifications. Between 2000 and 2009, 31.5 per cent of the total growth in jobs in Australia was in occupations classified as professional.[4]

Degree qualifications, of course, are not confined to persons holding professional occupations. As Table 1 shows, new entrants as managers and clerical and administrative workers are much more likely to hold degree qualifications than are their older counterparts.[5] A recent projection prepared by Access Economics for Skills Australia (the Commonwealth Government's advisory body on skills policy) concluded that there was likely to be rapid increase in the degree intensity of workers across a range of occupations. Access Economics based its projection on recent trends in skill intensity by occupation and on its estimates for productivity growth. The assumption was that the more rapid the growth in productivity, the greater would be the need for persons with post-

Table 1: Employed persons by occupation and age, percentage with a bachelor or higher degree, 2006

	Professionals	Managers	Clerical and administrative workers	Community and personal service workers	Sales workers	Technical and trade workers, machinery operators and drivers, labourers	Total employed[1]
Occupation: per cent of workforce	21	14	16	9	8	31	100
Percentage of workers who have a bachelor or higher degree							
20–24 years	63	16	15	10	11	4	16
25–29 years	77	31	25	20	18	8	32
30–34 years	74	34	21	17	14	6	30
35–39 years	68	32	16	13	11	5	26
40–44 years	64	28	13	10	8	4	23
45–49 years	64	28	12	10	7	4	23
50–54 years	62	27	11	10	6	4	22
55–59 years	59	22	10	9	6	3	19
60–64 years	56	16	10	9	5	3	17
Total	67	27	15	12	10	5	24

Source: Australian Bureau of Statistics (ABS), *Census 2006*, Table Builder
Note: [1] Includes not stated and inadequately described occupations

school qualifications. Under the Access Economics high-productivity scenario, the proportion of employed persons in Australia holding degree qualifications would need to increase from 24.0 per cent in 2007 to 33.8 per cent in 2025. By comparison, over the same period, the proportion holding Certificate III/IV qualifications would need to increase from 18.2 per cent to 22.2 per cent and those holding Diploma/Advanced Diploma qualifications from 9.4 per cent to 12.9 per cent.[6]

The Australian Government's 40 per cent target for the proportion of 25- to 34-year-old persons holding degree qualifications is in tune with these trends. If the share of all those employed in Australia who hold degree qualifications must increase from 24 per cent to 33.8 per cent às Access Economics believes, the increase will have to be derived from an increase in the share of younger Australian residents who are still in school or in the prime university age group of 18 to 22. The only alternative, apart from an increase in the immigration intake of degree-qualified persons, would be a mass re-education of older Australians.

If the government's target of 40 per cent of 25- to 34-year-olds with degrees by 2025 is to be achieved, how rapidly should domestic higher education enrolments increase over the next decade or so? Is it achievable and does it make sense given the short time available?

The Bradley Report did not initiate any detailed modelling of the number of domestic completions and/or of degree-qualified migrants necessary to achieve the 40 per cent target. The target was drawn from estimates of what had been achieved for graduate attainment amongst 25- to 34-year-olds in some European countries. The 40 per cent target was just a symbol of the Review's commitment to increasing participation in higher education in Australia.

Unfortunately the target now has a life of its own. The Labor Government, as noted, has embraced it, again without any apparent investigation as to its feasibility. The statement of Government policy accompanying Minister Gillard's commitment to the 40 per cent target simply asserts, without any backup evidence, that the additional places flowing from the government's decisions on financing university places will deliver the 40 per cent attainment level.[7]

THE SCALE OF THE 40 PER CENT OBJECTIVE

Table 2 provides a projection of the required increase in the number of persons who possess degree qualifications in 2025 if the 40 per cent target is to be achieved. The Australian Bureau of Statistics (ABS) Series B population projection has been used to estimate the number of persons aged 25 to 34 in 2025. The assumptions in Series B were that net immigration would be 180,000 per year and that the total fertility rate would be 1.8. These assumptions are close to those used by the Treasury in its third Intergenerational Report published in 2010. The projections start from a base of 2,893,734 persons aged 25 to 34 in 2006.

Based on the Bradley Report assumption that the share of 25- to 34-year-old residents with degree qualifications was 29.2 per cent in 2006, it can be calculated that 844,970 of the 25- to 34-year-old cohort in 2006 would have held degree qualifications. Table 2 shows that, under the Series B assumptions, the number of 25- to 34-year-olds is projected to increase to 3,677,393 by 2025. If there were no increase in the degree-qualified share (of 29.2 per cent), the number in this age group with degrees would be 1,073,799 in 2025. This represents an increase of 228,828, or 27 per cent, between 2006 and 2025. This increase is entirely a consequence of the projected increase in Australia's population to 2025. We refer to this as the demographic component of the projected increase.

Table 2: Projected increase in numbers of bachelor degree holders indicated by Bradley Report goals, 2006 to 2025

	Population	Per cent with degrees	Estimate of number of persons with bachelor degrees	Required increase in number of degree-holders 2006 to 2025	Increase as percentage of 2006 estimate	Share of projected increase per cent
Persons aged 25 to 34, 2006	2,893,734	29.2	844,970			
Persons aged 25 to 34, 2025						
Demographic increase	3,677,393	29.2	1,073,799	228,828	27.0	37.0
Further increase needed to raise the share of degree-holders from 29.2 to 40.0 per cent (Participation increase)		10.8		397,158	47.0	63.0
Demographic and Participation total	3,677,393	40.0	1,470,957	625,987	74.0	100.0

Source: Based on Series B population projections, ABS, 2008

There would have to be a further increase in the number of the degree-qualified if the share is to increase from 29.2 per cent to 40 per cent. We refer to this as the participation component. Table 2 shows that this would require an increase in the number of degree-qualified persons aged 25 to 34 by a further 397,158 (47 per cent) to 1,470,957. In sum, the number of degree-qualified persons aged 25 to 34 under these assumptions would have to increase by 74 per cent between 2006 and 2025, or by about 626,000 persons.

VIEWS ABOUT THE FEASIBILITY OF THE 40 PER CENT TARGET

The only published official estimate of the enrolment implications of the 40 per cent target is included in a recent Victorian government review of Victoria's higher education enrolment outlook. Because degree attainment rates are much higher in Victoria than for Australia as a whole, the review assumed that, in Victoria, the share of 25- to 34-year-old residents with degrees would have to increase from 33.8 per cent in 2006 to 47 per cent in 2025 (this increase roughly matches in scale the 29 to 40 per cent target embraced by the Commonwealth Government). The Victorian review concluded that, for the 47 per cent target to be achieved, Victoria 'will need to increase undergraduate commencement numbers by about 10,000 to 12,000 students per year across the period to 2025'. Since undergraduate commencements in Victorian universities were 55,080 in 2007, such an increase would be herculean.[8] In fact, modelling commissioned by the Victorian inquiry concludes that there must be a rapid increase in commencements of this order, but only over the next few years. After this there must be a sharp contraction in the following years, because a sustained annual increase of 10,000 to 12,000 commencements will lead to a massive overshoot of the 47 per cent target by 2025.[9]

The Victorian modelling should have provided a warning about the feasibility of the 40 per cent target, but it has been ignored. To the extent that there has been public discussion about enrolment trends in relation to the 40 per cent target, it has been influenced by statistics which indicate that there has been a recent rapid rise in the proportion of residents aged 25 to 34 who hold undergraduate or higher qualifications. These statistics come from the *Education and Work* release from the ABS. They are not census-based but rather derive from the ABS labour force survey.

Education and Work states that the proportion of Australian residents aged 25 to 34 who hold such qualifications has increased from 29.2 per cent in 2006 to 34.6 per cent in 2009. According to these data, shown in Table 3, the total number of residents aged 25 to 34 with degree qualifications has increased from 811,100 in 2006 to 1,026,900 in 2009. More than half of this 215,800 increase occurred in just one year—2009.[10] If this rate of growth were to continue, the 40 per cent target would be easily achieved by 2025. (The *Education and Work* figures for 2006 are smaller than those shown in Table 2. This is because the *Education and Work* survey excludes some categories of people included in the census—see notes to Table 3).

Maybe no major policy change is required. This conclusion is implied by the Group of Eight research universities which declared in early 2010 that, if the recent annual growth in participation rates of 20- to 24-year-olds in higher education continues, 'then it is probable that the Government's 40 per cent target could be reached naturally, well before 2025, allowing for enrolment pipelines, and without accounting for the contribution of degree qualified immigrants'.[11]

Table 3: Persons aged 25 to 34 and percentage with bachelor or higher degree, and implied annual change in number with bachelor or higher degree, May 2000 to May 2009

	Per cent with bachelor degree or higher[1]	All persons[1]	Implied number with bachelor degree or higher[2]	Implied annual change
2000	22.2	2,852,100	633,200	—
2001	24.0	2,854,600	685,100	51,900
2002	24.8	2,867,700	711,200	26,100
2003	25.0	2,877,400	719,400	8,200
2004	27.0	2,801,400	756,400	37,000
2005	29.2	2,793,500	815,700	59,300
2006	29.2	2,777,900	811,100	-4,600
2007	30.6	2,809,800	859,800	48,700
2008	31.9	2,861,300	912,800	53,000
2009	34.6	2,968,000	1,026,900	114,100

Sources: [1] ABS, *Education and Work*, Catalogue no. 6227, May 2008 and 2009
[2] Calculated from the ABS data.

Notes: The *Education and Work* survey excludes various groups of people that are included in the five yearly Census of Population. These groups include those permanently unable to work, institutionalised persons such as those in hospital and prisoners.

We begin by examining the Group of Eight proposition. As part of this inquiry, we introduce the modelling techniques needed to understand what is driving the recent surge in the proportion of 25- to 34-year-olds with degree qualifications. These techniques are the basis of the second part of the paper which examines what would be required to achieve the 40 per cent target by 2025.

SOURCES OF EXPANSION IN THE DEGREE QUALIFIED 25- TO 34-YEAR-OLD AGE GROUP TO 2009

Domestic completions

As Table 4 indicates, the number of domestic bachelor pass completions[1][2] was relatively stable at around 95,000 between 2005 and 2008, but increased to nearly 99,000 in 2009. This figure is well above the level of the

Table 4: Domestic bachelor pass completions, total number and estimate of ageing effect of completions on target cohort of 25- to 34-year-old persons with a bachelor or higher degree

Year	Total pass bachelor completions[2]	*Impact of ageing of past years completions through 25 to 34 year cohort*		
		Ageing-in estimate[2]	Ageing-out estimate	Net gain
1990	51,731			
1991	57,709			
1992	68,806			
1993	77,359			
1994	80,395			
1995	79,941			
1996	77,822			
1997	81,626			
1998	82,444			
1999	81,524			
2000	81,057			
2001	85,907			
2002	89,127			
2003	92,173	75,000	—	—
2004	93,456	76,000	—	—
2005	94,647	77,000	—	—
2006	94,672	80,000	—	—
2007	94,196	83,000	-65,000	18,000
2008	95,669	85,000	-68,000	17,000
2009	98,732	87,000	-69,000	18,000

Source: Calculations based on DEEWR, DEST, DEETYA, DEET Higher Education Statistics, published and unpublished completions data

Notes: [1] Over the last decade, 10 per cent of completions were aged 35 or older and so will never contribute to the 25 to 34 target. A further 60 per cent of bachelor pass completions were aged 22 or under so that the time lag until they added to the 25 to 34 year target would be at least three years. Likewise, it would take around 13 years until they age out of the target group by turning 35. Because of the long time lag before ageing out and lack of data from the 1980s we were unable to estimate ageing out before 2007.

[2] Ageing-in estimate includes new graduates reported for the year who were aged 25 to 34 at time of completion. They comprise less than 20 per cent of those included in the ageing-in column.

For the completions during the early 1990s, where we did not have access to age structure data, we applied the age structure reported for completions in 1996 as a substitute.

Course completions are reported in the year following actual completion. Thus the data reported as 2009 are for courses completed in 2008. Some students may complete more than one course in a given year so the number of completions may overstate the number of students completing.

previous decade. However, the current year completions do not immediately have a large effect on the percentage of 25- to 34-year-olds with a bachelor degree. The main reason is that, of the completions shown in Table 4 for the years 1990 to 2009, the vast majority (around three-quarters) are for students aged less than 25, with around 60 per cent aged less than 22. Therefore there is a time lag of around three years before these younger completions add to the 25- to 34-year-old stock of residents with degree qualifications. The effect of this has been modelled (based on recent age distribution data for domestic student completions). The outcome is detailed in Table 4 in the column headed 'ageing-in estimate'. The table shows that in 2003 some 75,000 persons would have been added to the stock of degree-qualified persons aged 25 to 34 as a result of completions reported in that year and the preceding years. Similarly 87,000 would have been added in 2009.

But this is not the end of the matter. Account must also be taken of those ageing out of the 25 to 34 age group. This ageing-out effect occurs on average some 13 or more years after completion (when the graduate reaches age 35). The outcome is shown in Table 4 in the 'ageing-out' column for the years 2007 to 2009. When the ageing-in and ageing-out estimates are combined they indicate that the current net gain in the number of residents aged 25 to 34 with degree qualifications from domestic completions is around 17,000 to 18,000 per annum—adding some 51,000 to 54,000 graduates over the three years to 2009. This addition reflects the increase in the number of completions over the last 10- to 15-year time frame.

On this evidence, growth in domestic completions has only made a minor contribution to the recent increase in the number of 25- to 34-year-olds with degree qualifications. As indicated, this is estimated in the *Education and Work* release to be some 215,800 between 2006 and 2009 and thus domestic completions account for barely one quarter of this increase.

Overseas movements

There are two distinct possible sources of the degree-qualified migrants who might add to the stock of residents aged 25 to 34 who hold degree qualifications. The first is the annual net intake of overseas-born migrants with professional occupations, almost all of whom would have had to be degree-qualified in order to meet current skilled migration requirements. This group includes settlers holding permanent residence visas, temporary migrants holding work visas (usually the 457 visa) and New Zealanders.

The second major potential group is overseas students. These are not counted in the above category because their student status excludes them from being recorded as possessing an occupation on arrival in Australia. However, students may add to the stock of degree-qualified persons either by achieving a degree while studying and then obtaining a temporary or permanent residence visa while in Australia or because, though students, they may already hold a university degree from their country of origin. This will be the case for those who come to study for masters by course work qualifications (about half of all overseas students in the university sector), and we also know that many who enrol in the vocational education and training (VET) sector are already graduates when they arrive.

Settlers and net long-term movement of professionals

Table 5 indicates the movement of overseas-born professionals (settlers arriving and net temporary residents) aged 25 to 34 over the years 2000–2001 to 2008–09. As might be expected, given the expansion of the skilled immigration program over the period, and the surge in the inflow of New Zealand citizens, the net intake of these persons has nearly doubled to some 35,646 by 2008–09.

However, as with estimating the contribution of domestic completions, the impact of professional migrants on the stock of 25- to 34-year-old residents is determined by the number of migrant professionals who have entered Australia in the past and who may be ageing into the 25- to 34-year-old cohort or ageing out of it. Someone arriving in 2005–06 aged 32 would have aged out of the target cohort by 2009. This ageing-out from the 25- to 34-year-old cohort for migrants occurs more quickly than it does for domestic completions because the age structure of the two groups is quite different. Fifty per cent of migrants are aged 30 or older, whereas 75 per cent of domestic completions are for students aged less than 25.

Using the age distribution data from the Department of Immigration and Citizenship (DIAC) source on which Table 5 is based, we have modelled the effect of settler arrivals and the net movement of temporary residents stating a professional occupation on the 25- to 34-year-old cohort with degree qualifications (using professional occupations as a surrogate for degree qualifications). The result of this modelling is that this movement, since the mid-1990s, of migrants stating a professional occupation has resulted in a net gain of some 50,000 graduates in the relevant cohort over the last three years—an average of 16,700 per annum (Table 6). This accounts for around one quarter of the growth reported by in the *Education and Work* survey between 2006 and 2009.

It is important to note that, when considering the long term implication of migration (to 2025), the net annual contribution from this source over the three years to 2009 will not be maintained into the future without ever-increasing migration movements each year. This is because the net gain each year is dependent on more migrants entering the cohort (whether as new arrivals aged 25 to 34 or earlier-arriving younger migrants ageing into the

Table 5: Settler arrivals, net movement of temporary residents with professional occupations and the total movement of persons aged 25 to 34 years, Australia, 2000–01 to 2008–09

	Professionals			Total movements of persons aged 25 to 34 years	Professionals as share of all movements (per cent)
	Settlers arriving	Net temporary residents	Total		
2000–01	11,585	7,337	18,922	45,898	41
2001–02	10,848	7,663	18,511	43,370	43
2002–03	11,671	7,864	19,535	46,082	42
2003–04	14,736	8,511	23,247	50,986	46
2004–05	15,524	10,376	25,900	57,500	45
2005–06	14,577	14,392	28,969	68,704	42
2006–07	13,322	18,826	32,148	80,375	40
2007–08	14,224	23,234	37,458	93,840	40
2008–09	14,841	20,805	35,646	104,062	34

Source: Department of Immigration and Citizenship, Overseas Arrivals and Departures data
Notes: Any former settlers departing are included in Table 7 which indicates the movements of Australian residents.

cohort) than leaving the cohort (whether departing Australia or ageing out). If the future movement of migrants replicates the number and age distribution of those in 2009, our modelling indicates that the net gain each year will decline to fewer than 4,000 in 2015 and will totally disappear well before 2025. At this point the contribution of this migration movement to the annual increase in the number of residents aged 25 to 34 holding a degree will be nil because those ageing into the cohort will equal the numbers ageing out.

As far as the 2006 to 2009 period is concerned, the two sources so far considered (domestic completions and overseas migrants stating a professional occupation) as contributions to the remarkable increase in the stock of degree holders aged 25 to 34 have yielded barely half of the apparent increase of some 215,800, as each group appears to have contributed around 50,000 over the three-year period.

There must also be some discounting of this gain through the loss of residents each year. As most readers will be aware, Australia experiences a net loss of residents to overseas destinations each year—sometimes referred to as the 'brain drain'. This loss is the product of the annual number

Table 6: Estimates of effect of arrivals of settlers and net movement of temporary residents with professional occupations on age group 25 to 34 years

Year	Arrivals of settlers and net temporary residents aged 20 to 34 reporting a professional occupation[1]	Estimates of impact of movements and ageing on cohort aged 25 to 34		
		Gain (new arrivals aged 25 to 34 plus ageing-in)	Loss (departures of temporary residents aged 25 to 34 plus ageing-out)	Annual net gain
1997	9,440			
1998	10,693			
1999	15,423			
2000	16,692			
2001	22,102			
2002	21,946			
2003	22,329			
2004	26,105			
2005	28,896	28,855	-14,157	14,698
2006	32,633	31,812	-16,030	15,782
2007	36,255	35,213	-18,776	16,437
2008	42,339	41,056	-22,029	19,027
2009	40,650	39,638	-24,879	14,759

Source: Centre for Population and Urban Research modelling based on Department of Immigration and Citizenship, Overseas Arrivals and Departures

Notes: For the purposes of the modelling, the data for the early to mid 1990s was assumed to be similar to that of 1997.

[1] Younger migrants aged 20 to 24 are included because they subsequently age-in to the 25 to 34 year cohort.

of residents (who are citizens or former settlers holding permanent residence visas) who say they are departing Australia, either permanently or for at least a year, relative to those returning from overseas after an absence of a year or more. Table 7 provides an estimate of this loss for professionals aged 25 to 34. The table provides support for the 'brain drain' nature of the loss since it shows that around half of the estimated losses of Australian residents each year are professionals.

As indicated in Table 1, the great majority of these professionals would have held a degree-level qualification. (The overseas arrivals and departures data do not provide information on qualification levels but a minority of those reporting other occupations would also have held a degree qualification.) Table 7 is no more than indicative since there are many uncertainties about these numbers, not the least being recent evidence that only a minority of residents who say they are leaving for a year or more actually stay away that long.[13] Nevertheless, it means that the additions to the degree-qualified stock of 25- to 34-year-olds from domestic completions and from settler arrivals have to be reduced somewhat to take account of net resident departures.

The implication is that there is a very large gap in the supply of 25- to 34-year-olds with degree qualifications identified in *Education and Work*, at least over the 2006 to 2009 period, that remains unexplained. The main source is likely to be overseas students, as explained below.

Overseas students

One component of the overseas student contribution to the stock of graduates derives from former overseas students who have obtained permanent residence onshore over recent years. Their numbers have increased rapidly since DIAC introduced new onshore skilled permanent-entry visa categories for former overseas students in 2001. Until the very recent surge in those studying VET courses, almost all would have been degree qualified. The numbers since 2006–07, as well as the numbers aged 25 to 34, are shown in Table 8. As is evident, most of these former overseas students were in the 25 to 34 age group, or would age into this cohort shortly after visa approval.

This group helps solve the puzzle, since it has added at least 30,000 to the stock of Australian residents aged 25 to 34 with degree qualifications over the years 2006

Table 7: Net permanent long-term overseas arrival and departure movements of resident professionals and all residents aged 25 to 34 years, Australia, 2000–01 to 2008–09

Year	Professionals Net PLT residents	Total Net PLT residents	Professionals as share of total net PLT movements (per cent)
2000–01	-7,857	-17,234	46
2001–02	-7,736	-15,017	52
2002–03	-4,969	-10,249	48
2003–04	-4,762	-10,673	45
2004–05	-6,980	-14,966	47
2005–06	-8,582	-17,791	48
2006–07	-9,246	-18,747	49
2007–08	-9,532	-19,382	49
2008–09	-5,392	-11,887	45

Source: Department of Immigration and Citizenship, *Overseas Arrivals and Departures.*

and 2009. Nevertheless, there remains an unexplained shortfall of 70,000 to 90,000 if we are to account for the overall increase of 215,800 degree holders aged 25 to 34 between 2006 and 2009.

It is likely that this shortfall derives from overseas students who are still studying in Australia, or have remained in Australia after obtaining a Graduate Skills visa (subclass 485), or are on some form of bridging visa pending the evaluation of an application for a permanent residence visa. The Graduate Skills visa allows those who complete tertiary courses in Australia to stay for 18 months and work full time. This visa category was introduced from September 2007. The number of these students or former students has increased dramatically over the past few years. As noted above, many of these overseas students already hold degree qualifications when they arrive, as would most of those who have remained in Australia on temporary visas after completing courses here.

The best indication of the number of persons holding student visas actually present in Australia is the monthly DIAC stock counts. These counts grew from 242,425 in June 2006 to 386,257 in June 2009.[14] No accurate figure is available for the number of former students still in Australia on the Graduate Skills visa or on bridging visas. However, one indication is that 11,807 former students applied for a 485 visa in 2007–08 and 22,888 in 2008–09.[15]

Most of these students or former students would have been eligible for sampling in the Labor Force Survey and its *Education and Work* offshoot, because they would have met the requirement to be considered as a resident for the purposes of the survey. To be eligible, persons must be in Australia for at least 12 months out of the 16-month period after their arrival. If included in the sample, they would mostly add to the 25- to 34-year-old category. Unfortunately the ABS was unable to provide an estimate of the numbers in the labour force survey by category of international student or former international student.

IMPLICATIONS FOR THE 40 PER CENT TARGET

The analysis has shown that the recent rapid rise in the proportion of 25- to 34-year-olds with degrees is not a precursor to an easy pathway to achievement of the 40 per cent target, as asserted by the Group of Eight. Barely one quarter of the increase of 215,800 to the stock of degree-qualified 25- to 34-year-olds between 2006 and 2009 is attributable to growth in domestic student completions. The rest comes via the movement of settlers, temporary workers, overseas students and former overseas students still in Australia who have either obtained permanent residence visas or who hold bridging or other temporary visas.

The net permanent and long term movement (which includes settler arrivals) contribution will not continue at the rate exhibited for the years 2006 to 2009. This is because our modelling shows that the additions to the stock of 25- to 34-year-olds with degree qualifications from the net intake

Table 8: Onshore permanent residence visas approved for former overseas students, principal applicants by age, 2006–07 to 2008–09

Age	2006–07	2007–08	2008–09
18–24	8,326	7,056	n.a.
25–34	10,505	10,182	n.a.
Other	521	640	n.a.
Total	19,352	17,878	12,201

Source: Department of Immigration and Citizenship, unpublished
Note: Includes visa subclasses 487, 880, 881, 882, 885 and 886

of overseas professionals will diminish in size over the period to 2025 because of the ageing-out phenomenon.

As to the overseas student component, our analysis indicates that they probably generated around a half of the 215,800 increase in the stock of degree holders aged 25 to 34 between 2006 and 2009. Over the next 15 years to 2025 this contribution will be affected by the ageing- out phenomenon as well. Thus, if the entry of overseas students does not hold up, there may be a contraction in their contribution to the stock of 25- to 34-year-olds by 2025.

The overseas student industry is entering at least a short period of contraction because the Australian Government has introduced a series of changes to the way skilled migrants are selected since early 2009. One consequence is that the number of former overseas students who will be able to obtain permanent residence after completing their qualifications will decline sharply (relative to the numbers shown in Table 8). This will diminish the attraction of study in Australia for the substantial minority who were motivated to study here because of the access it gave to permanent residence. As a consequence, the number of overseas students studying in Australia is likely to fall over the next few years.[16] In 2009–10 the number of student visas issued overseas fell by 30 per cent relative to 2008–09. This total included falls of 59 per cent for VET students and 25 per cent for higher education students.[17]

The impact of these policy changes will take a few years before they affect the estimates of degree-qualified persons reported in the ABS *Education and Work* survey. Unpublished government projections of the student contribution to Net Overseas Migration (NOM) suggest that students will continue to make a positive, but reduced, contribution over the years to 2013–14.[18] This outcome partly reflects the fact that the Australian Government has put in place generous transition arrangements allowing all those holding an overseas student visa as of February 2010 to apply for a 485 Graduate Skills visa and to apply for a skilled permanent residence visa on concessional terms.

In this context, estimates of the number of overseas students and former overseas students likely to be in Australia over the next 15 years are highly speculative. The meteoritic growth of recent years, particularly in the VET sector, seems certain to come to an end. But enrolments in the higher education sector, where the attractions of permanent residence have been less central to the choice of Australia as a study destination, are likely to remain substantial. They will continue to add to the stock of degree-qualified persons in Australia. Whether future overseas student numbers will be sufficient to offset the ageing-out effect of the current cohort remains to be seen.

This means that the next fifteen years will be very different from the last three. There will be no repeat of the huge addition to the ranks of the degree qualified from overseas student sources. If the 40 per cent target is to be achieved, it will have to be from migrants drawn from overseas and from domestic sources.

THE 2025 TARGET

The scale of the increase in the stock of 25- to 34-year-olds with degree qualifications, if the 40 per cent target is to be achieved by 2025, was outlined in Table 2. Given the current government population policy, it was projected that the number of 25- to 34-year-old Australian residents would increase from 2.89 million in 2006 to 3.68 million in 2025. If the share of this cohort with degree qualifications is to reach 40 per cent then the number so-qualified would have to increase from 844,900 to 1,470,953, or by 626,000. Table 2 shows that 37 per cent of this increase (the demographic component) will be due to growth in the size of the 25- to 34-year-cohort and 63 per cent due to raising the share of

the cohort with degrees (the participation component) from 29.2 per cent in 2006 to 40 per cent in 2025.

By 2009, according to the ABS *Education and Work* release, considerable progress had been made. By that time the share of 25- to 34-year-olds with degrees had increased to 34.6 per cent and, as a result, some 215,800 degree persons had been added to the stock of the age group holding degree qualifications. This means that there is still another 410,000 to be added if the 626,000 target increase is to be achieved.

One possibility is immigration. The Australian Government maintains a commitment to high immigration and is under pressure from business interests to bring in more migrants. For its part, the Department of Immigration has set in place policies that will re-orient the skilled intake towards offshore rather than onshore (former overseas student) sources.

Table 9: Immigration scenario 2010 to 2025

Year	Settlers arriving and net temporary resident professionals aged 25 to 34	Ageing-in [of earlier arivals aged under 25 at time of arrival]	Ageing-out [of earlier arrivals turning 35 during the year]	Addition to stock over time period
2007	32,148	3,065	-18,776	
2008	37,458	3,598	-22,029	
2009	35,646	3,992	-24,879	50,223
	2 per cent annual increase begins			
2010	36,360	4,440	-27,440	
2011	37,090	4,830	-30,020	
2012	37,830	5,150	-33,030	
2013	38,580	5,250	-34,610	
2014	39,360	5,310	-35,810	
2015	40,140	5,410	-37,760	
2016	40,950	5,520	-39,420	
2017	41,760	5,630	-40,490	
2018	42,600	5,750	-41,850	
2019	43,450	5,860	-42,950	
2020	44,320	5,980	-44,180	
2021	45,210	6,100	-45,360	
2022	46,110	6,220	-46,490	
2023	47,030	6,340	-47,420	
2024	47,970	6,470	-48,320	
2025	48,930	6,600	-49,290	124,110

Source: Centre for Population and Urban Research modelling based on Department of Immigration and Citizenship, Overseas Arrivals and Departures

One plausible immigration scenario that reflects these pressures has been modelled for this study. This assumes that the recent high level of settler arrivals and net inflows from temporary workers will be augmented by two per cent every year between 2010 and 2025. This flow builds on the actual PLT numbers of migrant professionals aged 25 to 34 to 2009 as detailed in Table 5. The results of the modelling (shown in Table 9) indicate that, on these assumptions, there will be a net gain in the stock of degree-qualified 25- to 34-year-olds of some 124,110 between 2009 and 2025. This may seem a small increment given that an immigration influx of the size assumed will add some 36,000 professionals per annum by 2010 and nearly 49,000 per annum by 2025. The reason that the net addition is just 124,110 over the 15 years is because of the ageing out of the 25 to 34 cohort, also shown in Table 9. It would take a truly massive increase in immigration for this source to constitute even half the growth in the number of degree-qualified young people needed to reach the 40 per cent target by 2025.

The bottom line is clear. If there is to be an addition of 410,000 to the stock of degree holders aged 25 to 34 by 2025, most of it will have to come from increases in the number of domestic university completions. This increase will have to be at least 300,000. This is because there will be some loss of Australian residents to other countries.

Given the direction of the Australian economy towards knowledge intensive service industries there is no doubt that a major increase in domestic completions is appropriate. As argued earlier, young Australians are not being trained in sufficient numbers for the jobs of the future. One indication is the relatively low proportion of Australian-born young people who are degree qualified. As is shown in Table 10, at the time of the 2006 census only 23.8 per cent of Australian-born residents aged 25 to 34 were degree-qualified compared with 33 per cent of those born in main English-speaking countries and 45.1 per cent of those born in non-English-speaking countries. This disparity reflects the relatively low participation rate of Australian youth in higher education and the heavy dependence on immigrant professionals. (This is reflected in Table 10 in that nearly half the overseas-born with a degree in 2006 had arrived in Australia since 2000.)

DOMESTIC COMPLETIONS—WHAT IS REQUIRED?

Our inquiry addressed the question of what level of domestic completions would deliver around 300,000 additions to the stock of 25- to 34-year-old degree holders between 2009 and 2025. One possible scenario is detailed in Table 11.

The modelling for this scenario assumes that domestic undergraduate commencements will increase at a rate sufficient to produce the completion outcome detailed in Table 11. Completions up to 2012 (when they will reach around 110,000) reflect commencements that have already occurred in the years to 2010. After 2012 it is assumed that completions will increase by two per cent in 2013 to 112,200, three per cent in 2014 to 115,500, then five per cent per annum to 2021, as described in Table 11. It has been assumed that the current completion to commencement (three years earlier) rate of around 60 per cent will continue.

After 2021 we have reduced the pace of growth in completions. This is because the government of the day will understand that, if this does not occur, there will be a huge overshoot of the 40 per cent target in the years after 2025. Even with the assumed slowdown in the rate of growth of completions after 2021, the stock of 25- to 34-year-olds with degrees in the five years after 2025 continues to expand beyond that required to meet the 40 per cent target (Table 11).

By 2025 this scenario will deliver an additional 280,500 graduates aged 25 to 34. In combination with the immigration scenario described above, the total increase in the number of degree qualified 25- to 34-year-olds will approximate the 40 per cent target.

There are serious questions about whether this scenario is achievable. First and foremost, it will require an increase in domestic completions from around 98,732 in 2009 to 179,600 in 2025, or by 82 per cent. Neither Australia's higher education sector nor the government departments that administer it appear to understand that their target will require such an enormous increase. Those involved with the issue appear to have been misled by the rapid increase in the share of the degree qualified over the years 2006 to 2009. As well, few anticipated how brittle the contribution from overseas students would turn out to be. Second, it is unlikely that successive governments over the next 15 years would be prepared to pay for the recurrent and capital costs of financing growth in completions of around 82 per cent.

There are positive developments in the higher education sector which imply some increase in domestic undergraduate commencements and thus of completions in the medium term. They include the Labor government's decision to remove the caps on individual university undergraduate enrolments from 2012, the incentives given to universities to recruit students from low socio-economic-status backgrounds, and the impetus that the current decline in overseas student commencements will give universities to compensate by recruiting more domestic students.

But there are a series of constraints in place—all a product of past government policies—which will mean that any increase deriving from the incentives listed will fall way short of the required 82 per increase in completions. These include the limited capacity of Australian universities to take on more domestic students. New universities will have to be built, quickly, especially in poorly served outer metropolitan areas and in fast growing regional areas like the Gold Coast, where university places are already inadequate.

University participation will have to be raised sharply in these underserviced areas. A good example is the rapidly growing south-eastern corridor of Melbourne. In 2007 just

Table 10: Qualification level of 25- to 34-year-old persons by birthplace, and percentage of the degree-qualified who had arrived 2000 to 2006, Australia, 2006

Birthplace	Bachelor or higher degree	Not bachelor or higher[1]	Total	Number	Per cent of those with bachelor or higher degree who arrived 2000 to 2006
	per cent				
Australia	23.8	76.2	100	1,881,589	—
Main English-speaking country	33.0	67.0	100	191,182	48.0
Non-English-speaking country	45.1	54.9	100	412,678	49.7
Unknown	3.5	96.5	100	190,948	2.9
Total	26.3	73.7	100	2,676,397	17.5

Source: Australian Bureau of Statistics, *Census 2006*, Table Builder

Note: [1] Includes those who did not state their qualification level. If these are excluded from the calculation, the percentage for the total shown here (26.3 per cent) would have been nearer the 29 per cent figure reported in the Bradley Report and the birthplace percentages would also reflect this.

21 per cent of young people aged 18 to 20 living in the South Eastern Outer Melbourne Statistical Subdivision (SSD) were enrolled in a university. By contrast, 55 per cent of those in this age group living in the wealthy Eastern Melbourne statistical subdivision of Boroondara were enrolled in a university.[19]

For university participation to increase, underserviced areas will not only require new local campuses, but also more encouragement to lower middle- and working-class families to send their children to university. This will also require improvements in the high schools in these areas such that they provide the appropriate university-oriented curriculum. Finally, massive changes to the student Youth Allowance arrangements are required so that young people from working families are eligible for income support while studying.

Table 11: Domestic bachelor pass completions scenario, 2007 to 2025 and 2030

Year	Annual increase in total completions (per cent)	Total completions (all ages)	Subset of total completions by persons aged 25 to 34	Ageing-in of earlier completions into 25 to 34 cohort	Ageing-out of earlier completions from 25 to 34 cohort	Addition to stock over time period[1]
2007		94,196	14,048	69,400	64,600	
2008		95,669	14,306	70,600	67,900	
2009		98,732	14,764	72,200	69,600	53,218
2010		101,000	15,100	71,200	70,500	
2011		102,000	15,300	69,600	71,400	
2012		110,000	16,400	69,100	73,000	
2013	2	112,200	16,800	70,300	74,400	
2014	3	115,500	17,300	69,900	75,300	
2015	5	121,400	18,100	71,400	77,300	
2016	5	127,400	19,100	73,700	80,300	
2017	5	133,900	20,000	75,400	84,700	
2018	5	140,600	21,000	76,100	86,500	
2019	5	147,700	22,100	82,100	88,700	
2020	5	155,100	23,200	83,700	89,300	
2021	5	162,800	24,400	86,300	90,100	
2022	4	169,400	25,300	90,600	91,200	
2023	3	174,400	26,100	95,100	93,700	
2024	2	177,800	26,600	99,900	96,400	
2025	1	179,600	26,900	105,000	99,800	280,500
2026	0	179,600	26,900	110,300	103,600	
2027	0	179,600	26,900	115,800	107,800	
2028	0	179,600	26,900	121,600	112,100	
2029	0	179,600	26,900	126,400	116,700	
2030	0	179,600	26,900	130,200	121,900	176,700

Source: Centre for Population and Urban Research modelling based on DEEWR Higher Education Statistics
Note: 2010 to 2012 completions reflect commencements that occurred before 2010
[1] Addition equals new completions by persons aged 25 to 34 plus ageing-in minus ageing-out.

None of these measures appear to be on the government's policy agenda. As a consequence, there is little prospect of achieving the enrolment increases needed to achieve the 40 per cent target.

CONCLUSION

The 40 per cent target is now enshrined in almost all discussions of the higher education outlook in Australia. It is seen as a welcome indicator of the Labor government's commitment to improving training opportunities for Australians. All involved seem to take it for granted that someone with expertise has evaluated its feasibility.

This study shows that the 40 per cent target is not realistic. It is highly unlikely that the present or future Australian Governments will increase either the intake of young migrant professionals or the number of domestic undergraduate completions to the scale needed to achieve the target.

The case for enhancing higher education training opportunities for young Australians is strong and targets for this objective are needed, but these should be well grounded, understandable and accountable. One focus might be to increase the proportion of young Australians in the main university age group who are enrolled as undergraduates. As of 2007, just 25.3 per cent of Australians aged 18 to 21 were enrolled in a university undergraduate course.[20] Targets could be set which gradually increased this level and which ensured that regions with very low enrolment rates were given the most attention. Such targets would be understandable, their achievement readily assessed and thus accountable.

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POPULATION DYNAMICS IN QUEENSLAND: A REVIEW

Ross Barker and Alison Taylor

Population growth in Queensland has been strong for the last 30 years, but has slowed in 2009 and 2010. There are three drivers of Queensland's growth: natural increase, net overseas migration (NOM), and interstate migration. For most of the 30-year period interstate migration was the strongest factor. Currently, however, it is weak, while national increase has grown and NOM, though lower than in 2008, is still significant.

Why has interstate migration fallen? New South Wales has been the main source of internal migrants, attracted by plentiful jobs, lower house prices, and by the Queensland lifestyle. But levels of job creation in Queensland have eased and the cost of housing has risen steeply, thus mitigating two of the three main incentives for making a long-distance move.

Though NOM has also fallen since 2008 this was from a record level and numbers remain high. Many immigrants are temporary workers sponsored not so much by the mining industry as by employers in healthcare and construction. Others are New Zealanders who are disproportionately attracted to Queensland. Whatever happens to interstate migration NOM will almost certainly continue to be a key driver of Queensland's population growth, as will natural increase.

INTRODUCTION

In terms of population growth, Queensland has in recent decades had the reputation of being the nation's powerhouse state—often accompanied by strong economic growth. However, this was not the case during the 1940s, 1950s and 1960s when Queensland recorded a disproportionately low share of Australia's population growth. In the post World War II period from 1946 to 1970, Queensland's average annual population growth was less than 30,000 people each year (29,300), with the state capturing only 13.9 per cent of the national increase over this period. This was primarily due to Queensland not experiencing the same influx of overseas migrants from the United Kingdom, Ireland and Europe as the southern states, as it did not offer the same employment opportunities in manufacturing industries. These dynamics were to change markedly in the following decades.

In the last three decades (1981–82 to 2009–10), average levels of growth in Queensland more than doubled to 74,700 per annum and accounted for 30.3 per cent of Australia's total growth. This continued high population growth saw Queensland increase its share of the nation's population from 14.2 per cent in 1970 to 20.2 per cent by 2010. Queensland has frequently (15 times over the last 30 years) recorded the highest annual population growth of any Australian state despite its current population being 2.7 million less than New South Wales (NSW) and one million less than for Victoria's. However, for the last two years Queensland's pre-eminent position in terms of population growth has been overtaken by both these states, each of which has experienced unprecedented levels of overseas migration. While Queensland also recorded high levels of net overseas migration in the last few years, population growth has slowed due to historically low levels of net interstate migration.

This paper explores these trends in Queensland's population change: specifically, the dynamics of growth experienced over the last three decades with a focus on the recent past. The paper argues that there has been a fundamental change in the drivers of growth in this period. This change has resulted, in more recent years, in a significant decline in the contribution to growth from interstate migration, while

the contribution from overseas migration has risen substantially and this growth is also being supported by record levels of births. The paper concludes with a view on the likely future levels of population growth in Queensland.

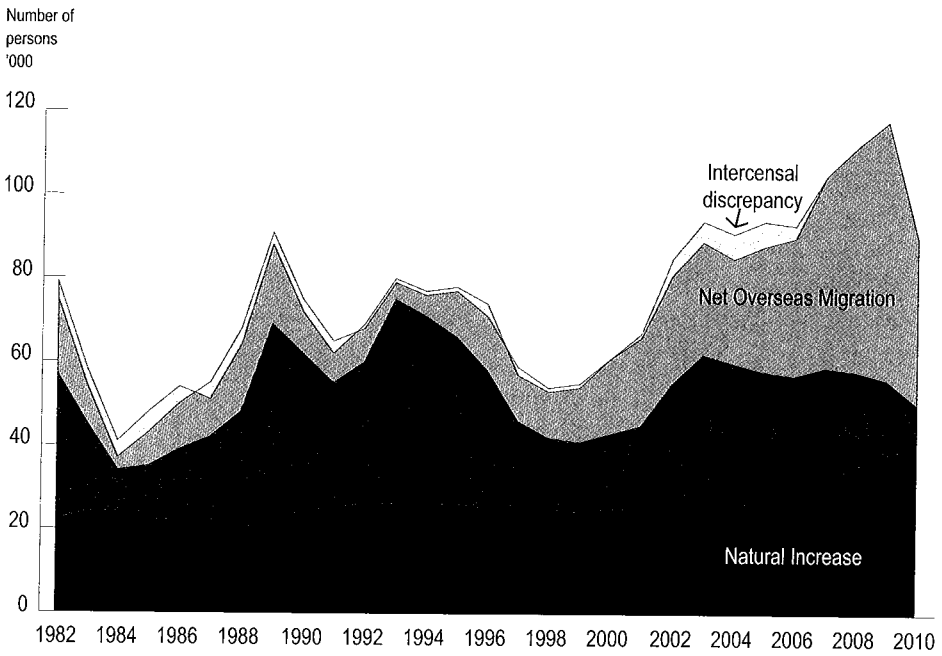
POPULATION GROWTH SINCE THE 1980s

Queensland experienced considerable fluctuations in annual growth over the past three decades. Annual growth ranged from a low of 41,557 in 1983–84 to a high of 118,700 in 2008–09 (more than two and a half times larger than the lowest amount of growth). Not only did the level of annual growth fluctuate substantially over this period, but the contribution of each of the components of population growth also varied widely (Figure 1).

While natural increase was by far the most stable component of population change up until 2004–05, ranging between 20,000 and 26,000 each year, it has risen dramatically since the mid 2000s to reach a record level of 39,800 in 2009–10. This was due to the rising number of births, peaking at 66,300 in 2009–10. In contrast, the number of deaths (at between 22,000 and 27,000 each year) has remained fairly stable for the past decade.

It is noteworthy that natural increase in Queensland is currently higher than in Victoria even though that state's population substantially exceeds that of Queensland. A closer examination reveals two contributing factors. First, Queensland has a higher total fertility rate meaning that Queensland women have, on average, more children than do Victorian women (2.1 for Queensland and 1.8 for Victoria in 2009–10). Second, Queensland's relatively young age structure resulted in a lower proportion of the population in the age

Figure 1: Components of population change, Queensland, 1982 to 2010, years ending June



Source: ABS, *Australian Demographic Statistics*, Catalogue no. 3101.0 (various issues)

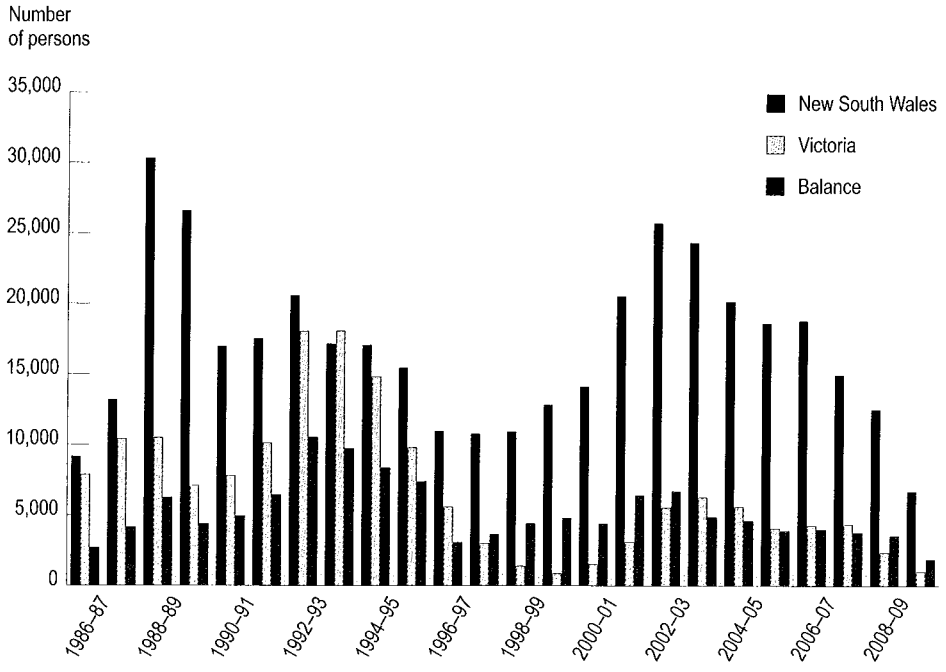
group accounting for the majority of deaths (in 2009–10 persons aged 65 years and over accounted for 77 per cent of deaths in Queensland and 81 per cent in Victoria). Some 13.7 per cent of Victorians were aged 65 years and over at June 2010 compared with 12.6 per cent of Queenslanders.

A seldom recognised aspect of consistently high population growth is the additional number of House of Representative seats allocated to Queensland at the expense of the southern states. Since 1977, Queensland has received an extra seven seats by redistribution. Currently it has 30 lower house seats in the Australian Parliament out of a total of 150. Over the last thirty years Queensland has gained seats from NSW, Victoria and South Australia while those states have lost seats because of below average national population growth.[1]

THE CONTRIBUTION OF INTERSTATE MIGRATION

Net interstate migration had been the main driver of population growth in Queensland in recent decades, accounting for just less than half (43.2 per cent) of its total growth in the 20 years to 2001. This was the largest contributor to Queensland's population growth over this time. Natural increase made the next largest contribution of 37.0 per cent while net overseas migration was less than half that of interstate migration at 19.4 per cent (plus a small amount for the intercensal discrepancy or that amount of growth not attributed to any individual component). Over more recent years, the contribution of net interstate migration to Queensland's population growth has declined sharply from 29.7 per cent in 2000–01 to 10.7 per cent in 2009–10 even though the state's total population growth has increased from 67,400 to 89,100 over

Figure 2: Queensland, net interstate gains, 1986–87 to 2008–09



Source: ABS, *Australian Demographic Statistics*, catalogue no. 3101.0

the same period. What is behind this sharp fall in Queensland's net interstate migration gain? How have the push and pull factors that lead to interstate movement altered in the last decade?

An investigation into the flows of internal migration into and out of Queensland over the last three decades reveals that, in the 1980s, NSW and Victoria combined accounted for more than 80 per cent of the net interstate migration gain to Queensland. However, the contribution from Victoria changed dramatically in the early 1990s. In a three-year period (1991 to 1994), net interstate migration gains to Queensland from Victoria more than doubled to reach just over 18,000 in 1993–94 and again in 1994–95. In 1993–94, Victoria overtook NSW as the primary source state for movement to Queensland.[2] (See Figure 2.)

This substantial increase in interstate migration flows from Victoria to Queensland can be attributed to both push and pull factors, in this case related to economic conditions and employment opportunities.[3] During the early 1990s the then Premier of Victoria, Jeff Kennett, undertook a program of public sector reform which reduced the size of the state's public sector substantially.[4] As a consequence many former public-sector employees took the opportunity to move interstate, particularly to Queensland, seeking better employment opportunities. Many also sought improved lifestyle outcomes, in some cases associated with early retirement. In addition, this was a period of low economic growth in Victoria. This provided further push factors and encouraged the move to comparatively better economic conditions in Queensland.

The high interstate migration movement out of Victoria was, however, relatively short lived. While the state registered a record net loss to the remainder of Australia of 29,200 in 1993–94, by 1998–99 this had reversed to a small net gain of 2,500. During this period the Victorian economy also grew strongly in terms of employment growth, thus reducing the strength of economic push factors encouraging interstate movement out of the state.

Since the late 1990s, NSW again became the primary source for interstate movement to Queensland and, since 1997–98, has regularly accounted for 60 per cent or more of Queensland's net gain. Substantial differentials in house prices between Sydney and South East Queensland during the early part of this period are considered to have been the main driver of this movement. In addition, close proximity between Northern NSW and South East Queensland (SEQ) encouraged movement, probably in response to a range of push and pull factors.

In the last decade, Queensland's net interstate migration gain peaked at just under 38,000 in 2002–03 and remained above 30,000 for the following two years. However, from 2005–06, Queensland's net interstate migration gains steadily declined to reach only 9,600 in 2009–10. This rapid decline in net interstate migration to Queensland (plunging more than 28,000 in the eight years since 2002–03) suggests considerable change may have occurred in the drivers of interstate movement during this period.

Previous research on internal migration suggests that the main reasons people move long distance, including across state boundaries, can be broadly categorised into three groups.[5] First, the availability of jobs and improved employment prospects with higher incomes are key pull factors (the loss of employment, retrenchment, unemployment or job dissatisfaction are the corresponding push factors). Second, differentials in house prices that allow movers to take advantage of better returns at their source location and more affordable properties in their destination location provide an important combination of push and pull factors. Finally, a group of amenity, lifestyle and family factors form the third

group of pull factors, factors that have been found to be of increasing importance to the long-distance mover.[6] In reality, it is the cumulative effect of a range of push and pull factors that influences an individual's decision to move long distances. Each of these broad categories is investigated below to determine what has changed in the last decade compared with earlier periods.

First, how significant have economic reasons, specifically the availability of jobs, been to declining levels of net interstate migration in Queensland? Total employment growth of 591,700 in Queensland over the last nine years has been higher than for either NSW (445,300) or Victoria (494,300) (Table 1). However, employment growth has been very volatile from year to year. In the year when net internal migration gains to Queensland peaked (2002–03), there were an additional 68,400 people employed in Queensland, compared with 61,500 in NSW and 46,600 in Victoria. More recently however, in two of the last three years, Queensland's employment growth has been less than the other two states. This was particularly evident in 2009–10 when the increase in the number of people employed in Victoria (74,900) was more than three times the increase for Queensland (21,300). A similar story is evident at the capital city level where, over the last three years, employment growth in Melbourne has exceeded growth in Brisbane by close to threefold.

Second, a persistent theme underpinning the high level of interstate migration to Queensland from NSW and Victoria (particularly from Sydney and Melbourne) has been the sizeable differences in house prices in the southern capitals compared with Brisbane and other popular destinations in SEQ, namely the Gold Coast and Sunshine Coast. According to the Real Estate Institute of Australia and BIS Shrapnel, in June 2001 median house prices in Sydney and Melbourne were $364,000 and $302,000 respectively, compared with $160,000 in Brisbane (Table 2). In proportional terms, Sydney and Melbourne house prices were

Table 1: Employment growth NSW, Victoria and Queensland 2000–01 to 2009–10

Year ending June	New South Wales Employed[a] '000	New South Wales Employed[a] per cent change	Victoria Employed '000	Victoria Employed per cent change	Queensland Employed '000	Queensland Employed per cent change
2001	3,035.5	1.9	2,272.3	3.4	1,681.7	1.8
2002	3,060.3	0.8	2,293.5	0.9	1,723.9	2.5
2003	3,121.8	2.0	2,340.1	2.0	1,792.3	4.0
2004	3,151.7	1.0	2,376.2	1.5	1,852.8	3.4
2005	3,188.4	1.2	2,450.1	3.1	1,953.3	5.4
2006	3,251.0	2.0	2,505.7	2.3	2,031.4	4.0
2007	3,320.5	2.1	2,586.8	3.2	2,128.3	4.8
2008	3,419.0	3.0	2,669.5	3.2	2,192.2	3.0
2009	3,440.9	0.6	2,691.8	0.8	2,252.2	2.7
2010	3,480.8	1.2	2,766.6	2.8	2,273.4	1.0

Source: ABS, *Labour Force, Australia*, Catalogue no. 6202.0 (various issues)
Note: [a] 12-month average of original series data.

127 per cent and 89 per cent higher than the median house price for Brisbane at that time.

During the early and mid 2000s, investment in Queensland residential real estate was heavily promoted in the southern states. Combined with strong employment growth in Queensland, it is reasonable to conclude that this acted as a compelling pull factor for an increasing number of people to move to Queensland. Annual data for the period 2000 to 2003 show that net interstate migration gains to Queensland from NSW increased from 14,100 to 25,700 (an increase of 82 per cent). Similarly the net gain from Victoria to Queensland increased from 1,500 to 5,600 over the same period (a 270 per cent increase).[7]

Since 2003, median house price differentials between Sydney and Brisbane have declined from 121 per cent to a low of 30 per cent in 2008, reaching 36 per cent in June 2010. The narrowing of the house price differential between Melbourne and Brisbane is even more dramatic, dropping from 60 per cent in 2003 to only five per cent in 2009 but increasing to 22 per cent by June 2010. It is reasonable to assume that, over the last two to three years, the incentive to move to Queensland because of this factor would have diminished.

The remaining key reasons driving long-distance moves relate to liveability, a concept including aspects of lifestyle and general amenity. It is difficult to find quantitative evidence for these factors and we acknowledge that the strength of their push and pull impacts are likely to be related to perceptions based on knowledge available to each individual. Thus, national media reporting on water restrictions in SEQ in 2007 and 2008, and perceived worsening traffic congestion in the Brisbane region, may have reduced the attraction of SEQ to some potential interstate movers.

It appears, then, that the dynamics of the range of push and pull factors that have led to strong net interstate migration gains to Queensland over past decades have changed. Current economic conditions in the key source states of NSW and Victoria are providing job opportunities (albeit subdued in NSW, although there was still a larger increase in employed persons in 2009–10 in NSW than in Queensland). Combined with relatively affordable housing in new estates in the Victorian case, this appears to be leading to a lull in interstate departures. A result of this has been that Victoria has recorded net interstate migration gains over the past two years (700 in 2008–09 and 2,500 in 2009–10) after six successive years of net interstate migration losses.[8] Similarly, in 2009–10 NSW recorded the lowest number of interstate departures (93,500) and net interstate migration loss (10,500) since 1996–97. This followed the lowest level for the past decade in the median house price differential between Sydney and Brisbane of $126,000 at June 2008.

Finally, there is a long-held perception that Queensland has been a popular destination for retirement migration in Australia. However, analysis of census data since 1976 and more recent data based on Medicare enrolments shows that the available evidence does not support this perception.[9] Data for 2008–09 reveals that net interstate migration for people aged 60 years and over represents only 3.1 per cent of the net interstate movement to Queensland.

OVERSEAS MIGRATION CLIMBS SIGNIFICANTLY

Historically, overseas migration has made a lower contribution to Queensland's population growth than has either interstate migration or natural increase. In the post-World War II period from 1946 to 1970, net overseas migration (NOM) accounted for less than four per cent of the state's growth compared with 27 per cent from net interstate migration and 69 per cent

from natural increase. In 1975–76, NOM to Queensland was at a record low of 968 people and accounted for only three per cent of the state's total growth of nearly 33,000 people. The primary reason Queensland has historically recorded a relatively low level of Australia's immigration intake was due to the southern states having a much larger manufacturing base that provided abundant job opportunities for new migrants in the 1950s, 1960s and 1970s.

In the decades following, there have been two clear cycles evident in Queensland's NOM. The first, where NOM peaked at 18,200 in 1980–81, also coincided with a period of relatively high net interstate migration. The second peak occurred in 1988–89 and may have been related to the successful staging of the Expo in Brisbane in 1988 (net interstate migration also reached a peak in 1988–89). Following a subsequent decline to a low of 3,700 in 1992–93, Queensland's NOM steadily increased to reach a high of 61,800 in 2008–09. In this year, NOM also accounted for more than half of Queensland's population growth (52.1 per cent). In contrast, net interstate migration to Queensland recorded a further peak in 1992–93 but then slumped to 20,000 or less between 1996–97 and 1999–2000.

While the overall size of the official migration program covering family, skilled and humanitarian components increased during the 2000s, there has been a changed emphasis towards skilled migration at the expense of family reunion. Over this time, Queensland's share of the nation's NOM increased from 15.5 per cent in 2000–01 to peak at 25.4 per cent in 2003–04 and has since declined to be slightly less than its pro-rata share of Australia's population by 2009–10 (18.4 per cent and 20.2 per cent respectively).

At both the national and Queensland level, the largest contributor to NOM in recent years has been from people on a range of temporary visas. There are a variety of drivers for such movement with the growth in particular visa types providing some hints. For Queensland, students comprised the largest category of temporary net overseas migration and accounted for 26.3 per cent of all NOM in 2007–08. At the

Table 2: Median house prices, Sydney, Melbourne and Brisbane, 2001 to 2010

	Sydney		Melbourne		Brisbane	
quarter ended June	$'000	per cent variance	$'000	per cent variance	$'000	per cent variance
2001	364.0	8.0	302.0	14.4	160.0	3.2
2002	452.0	24.2	330.5	9.4	185.0	15.6
2003	519.0	14.8	355.0	7.4	235.0	27
2004	552.0	6.4	365.0	2.8	307.3	30.7
2005	528.0	-4.3	360.0	-1.4	315.0	2.5
2006	526.8	-0.2	371.1	3.1	326.0	3.5
2007	532.6	1.1	415.0	11.8	366.3	12.4
2008	546.0	2.5	450.0	8.4	420.0	14.7
2009	551.2	1.0	442.0	-1.8	419.0	-0.2
2010	624.0	13.2	559.0	26.5	460.0	9.8

Source: *QBE Australian Housing Outlook 2010–2013*, prepared by BIS Shrapnel

Australian level, the corresponding figure was 39.0 per cent of all NOM reflecting the disproportionately high contribution of students to NOM in NSW and Victoria. The number of overseas students contributing to Queensland's NOM has more than doubled from 5,300 in 2005–06 to 14,230 in 2007–08.[10]

This increase coincided with a concerted program by Australian tertiary education institutions to attract overseas students. Combined with favourable exchange rates and a perception of Australia as a clean, green and safe developed country in which to obtain qualifications, this formed a set of strong pull factors. An increasing number of students also looked to gain permanent residency following their period of study. However, in 2009 and 2010, the Australian government progressively tightened eligibility conditions in order to contain the large growth in student numbers. Many overseas students currently in Australia will have to return home because their qualifications will not be sufficient to lead to a skilled permanent resident visa.[11]

The next largest visa category for temporary entrants to Queensland over recent years has been the Temporary Business Entrant (sub-class 457—Business visa). People entering on 457 visas are sponsored by an employer to fill skilled positions for a period from several months, up to four years. In response to the large and increasing demand for skilled labour (a significant economic pull factor), net migration to Queensland of people on 457 visas increased fourfold between 2004–05 and 2007–08 to reach 7,310.

Contrary to popular belief, it is not workers in the mining industry that dominate the numbers entering Queensland under this program. In 2009–10, the main industry sponsoring applicants that were granted visas were Health care and social assistance (23.3 per cent), followed by Construction (13.7 per cent) and then Mining (10.8 per cent).[12]

However, migration of New Zealand citizens has been Queensland's largest single contributor to NOM over the four years to 2007–08 (larger than any single temporary entrant visa category). Under the Trans-Tasman travel arrangements, New Zealand citizens have the right to enter Australia and to stay indefinitely. They are not included in the official migration program. New Zealanders have tended to favour Queensland as their preferred destination in Australia with the state consistently attracting over 40 per cent of the nation's net gain from New Zealand over the four years to 2007–08. Why does Queensland attract a disproportionate share of New Zealanders moving to Australia?

One key driver attracting New Zealanders to Queensland is the positive wage differential between New Zealand and Australia. Combined with a diminishing difference in unemployment rates between the two locations, it appears that economic reasons, and especially employment opportunities, are acting as strong pull factors that are attracting increasing numbers of New Zealanders to move to Australia. A further important reason that attracts New Zealanders to settle in Queensland in particular, is the large number already resident in the state.

The push and full factors of amenity, lifestyle and family are no doubt contributing reasons for this movement. Anecdotal evidence suggests that the preference for New Zealanders to holiday in Queensland may also play a role in later permanent movement. Frequent and cheaper flights between Brisbane–Gold Coast and New Zealand have facilitated this easier and regular movement across the Tasman. As a result of all of these drivers, the contribution of New Zealanders to Queensland's NOM over the three years to 2007–08 almost doubled from 8,810 to 16,550.

QUEENSLAND'S FUTURE POPULATION GROWTH

What does the future hold in terms of expected levels of population growth in Queensland and how will each of the components of change contribute to that growth?

In terms of migration to Queensland both from other states and territories in Australia and from overseas, the state's future economic growth and individuals' perceptions about Queensland will markedly influence the number of future migrants. It is clear that economic conditions form a very strong set of push and pull factors driving long-distance migration. In this regard, it is significant that Queensland's pending resources boom will lead to robust employment growth. This is particularly so for the Coal Seam Gas (CSG) industry in the Surat and Bowen Basins and associated Liquid Natural Gas (LNG) development. These activities will see a substantial increase in the demand for labour over the next decade. Increased employment growth arising from known expansion in coal mining and subsequent exports, which are predicted to increase from 170 million tonnes in 2009–10 to nearly 300 million tonnes by 2020, is also anticipated to drive labour demand.[13]

It should be remembered, that while Queensland is currently experiencing historically low levels of interstate migration, past volatility suggests that net interstate migration will rebound in the future—provided the fundamental drivers of long-distance internal migration have not altered permanently. Past data on interstate migration show that net interstate migration to Queensland peaked at 49,200 in 1992–93 (after being less than 10,000 only nine years earlier), but that within four years in 1996–97 the level had fallen to less than 20,000. This volatility over a relatively short term suggests that the complex mix of economic, social and personal push and pull factors driving an individual's decision to move is difficult to predict with any certainty and can alter dramatically over a short period. However, it does seem clear that future levels of interstate migration will largely depend on the state's share of the nation's employment and economic growth—assuming that house price differentials for Brisbane and SEQ remain positive compared with Sydney and Melbourne.

Given extensive reporting on impending labour shortages, and with large numbers of the baby-boom generation leaving the workforce during the 2010s, it is likely that the size of the skill component of the migration program will be at least maintained if not increased.[14] There is already considerable pressure from a range of business organisations seeking to increase the skilled migration intake because of pending labour shortages. In contrast, based on the strong likelihood that current policy will be unaltered, the family reunion and humanitarian components of the migration program will remain fairly stable.

While the growth in the number of overseas students in both Australia and Queensland has been exceptional in the second half of the 2000s, it is expected, based on policy decisions already implemented, that there will be a decline in the number of students in the short term. A number of factors are weighing against the current high numbers being maintained. These include changes to the eligibility criteria for students wanting to gain permanent residency in Australia, a high Australian dollar and strong competition for overseas students from other developed countries including the United States of America, Canada and the United Kingdom.

However, at June 2010, Queensland accounted for only 14.4 per cent of the number of overseas students in Australia, significantly below the state's share of the nation's resident population. Therefore, there is clearly an opportunity for

Queensland to increase its future share of Australia's overseas student population.

It is also important to recognise that much of the rapid increase in NOM between 2005–06 and 2008–09 was due to a rising number of temporary entrants. This was largely due to the upswing in the number of students; however, many of those students' visa conditions oblige them to leave Australia after their course of study and any work contract is complete. In addition, as noted above, the Australian government has recently announced a tightening in the eligibility requirements for overseas students who want to apply for permanent residency.

While some students will be able to apply to stay in Australia under the old rules, the record high NOM figure for both Australia and Queensland in 2008–09 can be viewed to some extent as a bubble created by a one-off substantial excess in long term arrivals over long term departures.[15] Evidence that the peak has passed is already available with the preliminary NOM for Australia of 215,600 in 2009–10 being almost 100,000 lower than the 2008–09 figure. Similarly in Queensland, NOM has dropped to 39,700 in 2009–10, about 22,200 lower than the previous year.

Due in part to the worldwide economic downturn, the number of applications granted to 457 visa holders with a destination in Queensland has declined in recent years. However, increasing skills shortages driven by the resource sector, and related industries, suggest that the level of applications granted under this category will rise.

CONCLUSION

Each of the three components of population growth is expected to continue to make a large contribution to Queensland's future population growth. For example, natural increase will rise slowly over the coming decades. This is because, assuming current fertility levels are maintained, the number of births will increase in line with the growing number of women in key child-bearing age groups.

Net interstate migration is expected to slowly recover over the next decade as the resource boom and concomitant employment growth gathers momentum. The level could to rise to more than 20,000 per annum over the next few years—provided the resource boom proceeds as expected, and as rebuilding following the January 2011 floods occurs. In fact, rebuilding associated with the Queensland floods is expected to provide a boost for economic growth lasting until 2012–13 and beyond, and by one estimate totalling $10 billion.[16] In addition, as increasing numbers of baby boomers reach retirement age over the next decade or so, larger numbers of retirees may well move to Queensland—assuming the propensity to move at such ages remains the same—simply due to the increased numbers of retirees.

The level of future net overseas migration is largely dependent on the size of the Australian government's official migration program, the net movement of New Zealanders to Queensland, and the number of temporary entrants in the key categories of international students, 457 visa holders and working holiday makers. While policy changes relating to eligibility and residency entitlements will be a key determining factor affecting the numbers contributing to NOM, economic factors will continue to exert a strong pull encouraging people to move to Queensland and suggest that NOM to the state will remain relatively high.

It seems clear then that NOM will remain a significant contributor to Queensland's future population growth. It is probable that, on average, NOM, will exceed net interstate migration over the coming decades. However, one clear lesson evident from an analysis of past population trends is that volatility in patterns of growth is unpredictable. Unexpected events can

intervene and individuals will react in a variety of ways to the entire range of push and pull factors discussed here. A deeper understanding of the impact and dynamics of the drivers of long-distance migration, and how they may be changing, would provide an important contribution to the art of projecting future population growth.

Authors note

The views expressed in this paper are those of the authors and do not necessarily reflect those of the Queensland Treasury.

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