Population Ageing and the A-B-C of Educational Demand. A Focus on Tasmania and South Australia

Dr Natalie Jackson[1]
Ms Britany Thompson[2]

University of Tasmania

Contact:
Natalie.Jackson@utas.edu.au
ph. 03 6226 2943

Jackson, N.O. and Thompson, B. (2002) The A-B-C of educational demand. A focus on Tasmania and South Australia, *People and Place* 10(3), 11-22.

ABSTRACT

Population ageing is bringing with it considerably more than the well-publicised increases in the numbers and proportions of elderly. Slowly emerging are also significant declines in the school, tertiary, and working age populations that together are likely to generate a very new situation at the young adult ages: substantial competition between the tertiary education and labour market institutions for the participation of the young. These interactions, which in Australia will be markedly different by region, may have even more profound social, economic and political implications than those of the increasing numbers and proportions of elderly *per se*—although this should not imply that the effects will necessarily be negative. Indeed, young people—and perhaps lecturers in tertiary institutions—should be able to look forward to a substantially more agreeable future, especially in the older regions. This paper outlines the argument for Australia, with a focus on Australia's two demographically oldest States: Tasmania and South Australia.

Almost globally, the focus of population ageing is the forthcoming increase in the numbers and proportions of elderly, and the associated decline in the Potential Support Ratio (PSR)—the ratio of those at 'working age' (15-64 years) to those over the age of 65. Attention is also increasingly being given to the projected decline—both proportionate and numerical—in the working age population itself, and to the sorts of strategies that might prevent this decline from becoming too severe.[3] By contrast, somewhat less attention is being paid to the channel through which the working age population must first pass, and where an equally profound impact of structural ageing is manifesting: the educational sector.[4] Specifically, school and tertiary education rolls in many regions are projected to decline by even greater magnitudes than the projected increases in the numbers and proportions of elderly. By contrast, at this moment, the primary concern in the educational sector appears to be the forthcoming loss of 'baby boomer' teachers to retirement, raising concerns of a looming 'crisis' in education as student numbers exceed available teachers.[5]

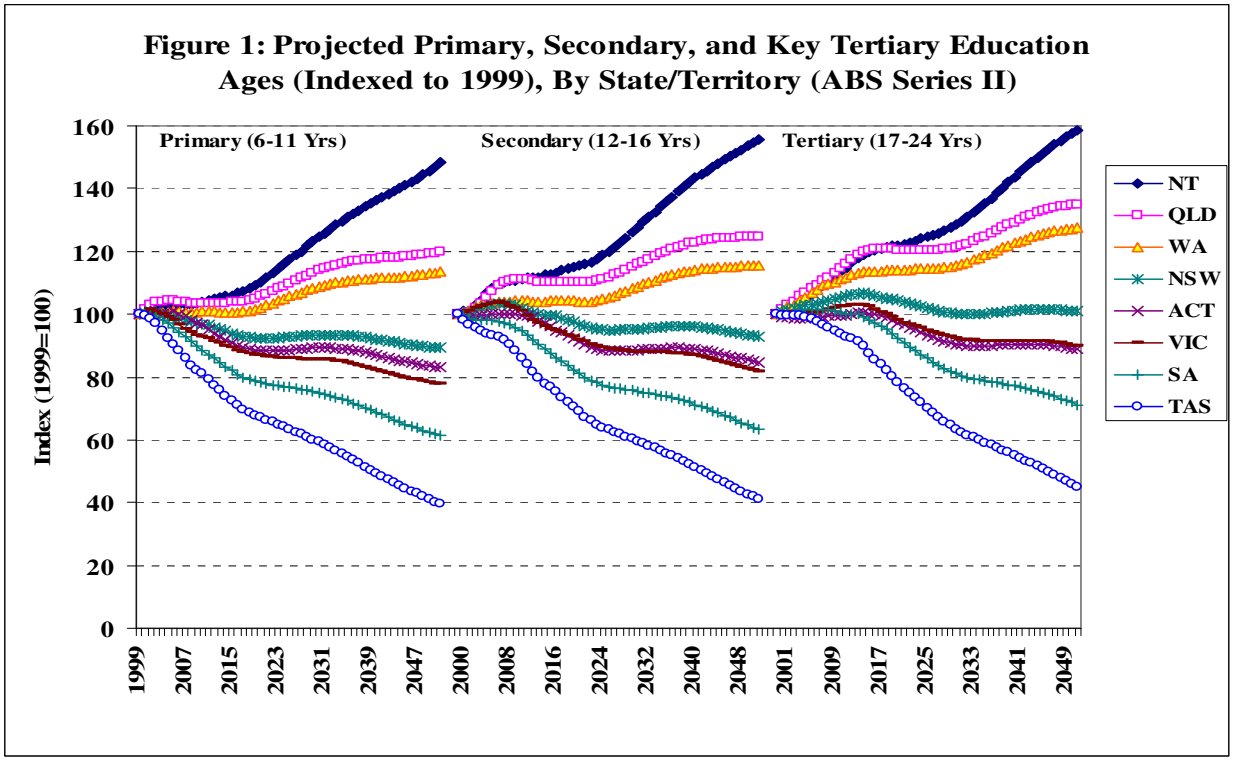
The latter concern is not without substance in some regions. However, the marked regionality of population ageing in Australia will see the ‘crisis in education’ take very different forms in each State and Territory. In the younger regions, projected student numbers may well exceed current staffing ratios for a period; in the older regions, the declining numbers of students that have not been—and are not being—born into the population will generate the opposite situation. Additionally in the older regions, fairly imminent interactions between declining student numbers and declining numbers of labour market entrants are likely to generate significant competition between higher education and labour market institutions for the participation of the young. These regionally divergent trends will have many implications, some negative, some positive, but most running counter to current views that seem to expect ever-increasing numbers and levels of higher education. This paper outlines the argument, with a focus on the projected trends in Australia's two oldest States, South Australia and Tasmania. The effects of structural ageing on these States’ current public/private division of primary and secondary schooling are also noted.

Birth rates, cohort sizes, and regional disparities in projected school and tertiary populations:

Although Australia's total fertility rate has been falling almost monotonically for four decades, actual numbers of births have, until recently, changed very little. This is because of the 'momentum effect'—an increase in the numbers of women arriving at reproductive age each year, due in part to higher and more universal fertility when the women themselves were born, and in part to international migration.[6] However, this effect is now almost played out; total birth numbers are now falling, and are projected to continue to decline slowly across at least the next half century.[7]

The situation at national level is not, however, evenly reflected across Australia's States and Territories. Total fertility rates range from 1.6 in the Australian Capital Territory (ACT) to 2.2 in the Northern Territory (NT), and are applied to markedly different age structures, these two regions being Australia's youngest. Australia's second-highest fertility rate (1.8) in Tasmania is, conversely, applied to Australia's second-oldest region, and moreover, to an age structure with a significant deficit of people of reproductive age, the result of recent net migration losses.[8] Together these regional differences, along with those assumed for future migration and fertility, mean that projected trends in the numbers of births—and thus of future school and tertiary age cohorts—differ markedly.

Using the Australian Bureau of Statistics medium variant (Series II) projections[9], Figure 1 shows projected numbers of 6-11, 12-16, and 17-24 year olds (indexed to 1999), representing the main primary, secondary, and tertiary education age groups. The patterns and trends are almost identical for each age group, reflecting relevant time lags. Across the projection period, numbers across the three age groups plummet in Tasmania (by an average 58 per cent) and South Australia (35 per cent), fall substantially in Victoria (17 per cent) and ACT (14 per cent), remain relatively stable in New South Wales (-6 per cent), and increase in Western Australia (19 per cent), Queensland (27 per cent), and the Northern Territory (54 per cent). Notably it is the projected experience of New South Wales that most closely approximates the situation for Total Australia, drawing attention to the increasing importance of regionally-disaggregated analyses of population ageing.



Two points of qualification are needed here. First, although Tasmania is currently Australia's second-oldest state, the above-noted disproportionate loss of population at the key reproductive ages is causing it to age faster than any other State or Territory, and it is soon expected take over from South Australia as the oldest—hence the greater decline in Tasmania's school and tertiary age populations. Second, these medium case trends assume an overall annual net international migration gain for Australia of 90,000 persons. During 2002-2003 net migration is to be increased to 117,000, and this number may continue to be increased in the future. However, without substantial changes to the current regional distribution of migrants,[10] the relative patterns are likely to remain similar. For example, if Tasmania were to experience the ABS 'high variant' assumptions, which for Total Australia involves a net migration gain of 110,000 (and is thus close to next year's target), the average decline in Tasmanian school and tertiary age populations would be 35 per cent, almost identical to that shown for South Australia on the medium case assumptions.[11] Such a significant relative increase for Tasmania would also imply a marked change in Tasmania's historical experience of migration.

Projected regional trends in public and private primary and secondary school participation:

In Australia, primary and secondary school participation is distributed between Government/Public (approximately 73 per cent) and Non-Government/Private (27 per cent) schooling, although these proportions differ somewhat at primary and secondary levels and regionally. The division between these delivery systems, or rather, the degree to which Federal and State/Territory Governments contribute to each sector, is the locus of much debate. While the actual funding formula is complex, by and large the almost complete underwriting of public schools by the Federal and State/Territory Governments, and the subsidisation of private schools, is undertaken on a per capita basis, with adjustments for regional rates of growth. Regions with low or negative growth are not penalised by the funding formula, but those with higher than average growth rates have additional funds directed to them,[12] with implications for the relative ability of slower growing or stable-population schools to keep abreast of new teaching and learning developments, equipment and technology. Accordingly, for many schools, the significance of the projected declines in student numbers will be large, and may call into question the continued viability of some—at least under present funding arrangements—and many hundreds or even thousands of down-line jobs.

Table 1 shows the current public/private division of South Australian and Tasmanian primary and secondary school students by key age group. As would be expected, total participation is more or less universal up to age 15 (or Year 10), although at age 5 it is noticeably lower in Tasmania than South Australia. From age 15 (Matriculation), participation declines rapidly, with the decline

substantially greater in public than private schools. Between ages 15-17 (i.e., Years 10 and 12), South Australian total age specific participation rates fall by 37 per cent, and their Tasmanian equivalents by 38 per cent. The underlying data (not shown) indicate that for South Australia these declines are 44 and 23 per cent for public and private schools respectively, and for Tasmania, 41 and 30 per cent. However, between Years 10 and 12, the public/private mix also alters in favour of private schools, with proportions attending the latter increasing from 34 to 41 per cent in South Australia, and from 27 to 31 per cent in Tasmania.

Table 1: Institutional Distribution (Public/Private) and Total Age-Specific Participation Rates of Primary and Secondary School Students, by Key Age Group, South Australia and Tasmania, 2000

	SOUTH AUSTRALIA			TASMANIA		
	Public	**Private**	**Participation Rate**	**Public**	**Private**	**Participation Rate**
(Primary) Age 5*	73.1	26.9	102.7	71.8	28.2	48.3
Balance Primary**	72.4	27.6	99.4	77.6	22.4	95.4
(Secondary) Age 12	…	…	…	73.9	26.1	99.0
Age 13	67.1	32.9	99.5	71.0	29.0	99.8
Age 14	67.3	32.7	97.9	72.8	27.2	97.9
Age 15	65.9	34.1	94.1	72.6	27.4	98.9
(Matric) Age 16	63.1	36.9	81.6	70.1	29.9	79.9
Age 17	58.8	41.2	59.6	68.9	31.1	61.8
Total Number	**172186**	**74538**	**246724**	**60681**	**20439**	**81120**

Notes: ** Called 'Reception' in South Australia; 'Pre-Year 1' in Tasmania. Age 5 Total Participation Rates in South Australia exceed 100% due to numerator including under 5's*
***In South Australia, primary school includes Year 7 (av. age 12); in Tasmania Year 7 students attend secondary school.*

Source: *Compiled from ABS Schools 2000, Catalogue 4221.0 and ABS Population Estimates 2000*

Primary Schools:

Tasmania: In the year 2000 there were approximately 43,705 Tasmanian primary school students aged 5-11 years.[13] Table 2 shows the effects of structural ageing on enrolments for each type of institution (public/private), by projecting current age specific participation rates through to 2050 according to ABS population projections Series I and II—the 'high' and 'medium' variants.[14]

Table 2: Primary Schools: Projected Numbers Aged 5-11 Years, By ABS Projection Series and Public/Private Institution, TASMANIA, 2000-2050

	SERIES I			SERIES II		
	Public	Private	Total	Public	Private	Total
2000	33835	9873	43707	33833	9872	43705
2005	31083	9084	40168	30666	8958	39624
2010	29290	8545	37835	27433	8007	35440
2015	28121	8206	36327	24569	7173	31742
2020	27342	7977	35319	22771	6643	29414
2050	21777	6354	28130	13691	3996	17687
Decline (number)	12058	3519	15577	20142	5876	26018
Decline (per cent)	36	36	36	60	60	60

Source: *Calculated from ABS Catalogues 4221.0 and 3222.0*

Notes: *Series I* *ANM -313; TFR 1.8 constant; Life Expectancy increases 1 year for every 10 years*

Series II *ANM -1870; TFR falling to 1.65 by 2009 then constant, same Life Expectancy as Series I*

Table 2 shows that under the medium variant (Series II) projections, total numbers of primary school students are projected to decline by 2050 to less than 18,000, a fall of more than 26,000 students (60 per cent). Should, instead, the ABS 'best case' (Series I) situation prevail, total numbers would decline to around 28,000, a loss of more than 15,500 students or 36 per cent. In both cases, numbers are already declining, and fall below 38,000 before the end of the present decade, reflecting a 13 per cent decline under Series I and 19 per cent under Series II. It is highly unlikely that this situation can be arrested in the short term, as even an abrupt reversal of Tasmania's recent migration experience to positive levels would be unlikely to deliver the required number of children in the required time—nearly 6,000 under the best case scenario, or 8,000 in the medium case. Alternatively such numbers would require the birth rate to rise immediately to between 2.1 and 2.2.

The quantum and tempo of the trends are almost identical for public and private schools. Given that Tasmanian student numbers are currently divided among some 142 public and 33 private primary schools,[15] the thorny question of the continued viability of some—even in the short term—must be raised. The problem is that—in addition to Tasmania's historical experience of net migration loss—it is simply not possible to create more 5, or 6, or 10 year olds; with structural ageing, the 'lost' births are, indeed, lost forever.

South Australia: Reflecting similar dynamics, South Australian primary schools (Table 3) are also projected to decline across the projection period, by between 31-38 per cent respectively under Series I and II. These trends, which are also already underway, represent losses of some 49,000-60,000 students respectively by 2050. In each case, public school numbers decline below 100,000 within 15 years, and private, below 38,000, representing relatively imminent declines of 13-17 per cent. South Australia students are currently divided between 452 public and 119 private primary schools, and 126 combined primary/secondary schools (74 public, 52 private) (ABS *Schools* 2000:12).

Table 3: Primary Schools: Projected Numbers Aged 5-12 Years, By ABS Projection Series and Public/Private Institution, SOUTH AUSTRALIA, 2000-2050

	SERIES I			SERIES II		
	Public	Private	Total	Public	Private	Total
2000	114883	43635	158518	114882	43635	158517
2005	110235	41874	152109	110228	41876	152104
2010	104163	39568	143731	102029	38761	140790
2015	99958	37971	137929	94575	35927	130502
2020	96512	36661	133173	90149	34244	124393
2050	79151	30066	109217	71348	27103	98451
Decline (number)	35732	13569	49301	43534	16532	60066
Decline (per cent)	31	31	31	38	38	38

Source: *Calculated from ABS Catalogues 4221.0 and 3222.0*
Notes: *Series I* *ANM -600; TFR 1.7 constant; Life Expectancy increases 1 year for every 10 years*
Series II *ANM 700; TFR falling to 1.55 by 2009 then constant, same Life Expectancy as Series I*

Secondary Schools:

With a small time lag, and assuming current age-specific participation rates, the same trends are evident at the main secondary school ages (12-17 years in Tasmania, and 13-17 in South Australia). By 2050, Tasmanian secondary school student numbers decline by 35 and 57 per cent under Series I and II (Table 4), and South Australian numbers by 30 and 35 per cent (Table 5).

Table 4: Secondary Schools: Projected Numbers Aged 12-17 Years, By ABS Projection Series and Public/Private Institution, TASMANIA, 2000-2050

	SERIES I			SERIES II		
	Public	Private	Total	Public	Private	Total
2000	26847	10566	37413	26848	10567	37415
2005	25728	10111	35839	25495	10020	35515
2010	24167	9521	33688	23565	9284	32849
2015	22538	8859	31396	21014	8269	29284
2020	21730	8548	30277	18895	7441	26336
2050	17396	6842	24238	11459	4511	15970
Decline (number)	9451	3724	13175	15389	6056	21445
Decline (per cent)	35	35	35	57	57	57

Source: *Calculated from ABS Catalogues 4221.0 and 3222.0*
Notes: *See Table 2 for Series I and II assumptions*

Table 5: Secondary Schools: Projected Numbers Aged 13-17 Years, By ABS Projection Series and Public/Private Institution, SOUTH AUSTRALIA, 2000-2050

	SERIES I			SERIES II		
	Public	Private	Total	Public	Private	Total
2000	57303	30902	88205	57304	30903	88207
2005	56146	30246	86392	56239	30295	86535
2010	54526	29432	83958	54848	29605	84453
2015	51147	27590	78737	50806	27444	78251
2020	49139	26515	75654	47079	25434	72513
2050	40119	21649	61768	37068	20016	57084
Decline (number)	17184	9253	26437	20236	10887	31123
Decline (per cent)	30	30	30	35	35	35

Source: *Calculated from ABS Catalogues 4221.0 and 3222.0*
Notes: *See Table 3 for Series I and II assumptions*

Again, this overall scenario of substantial decline in the student population must be considered more or less inevitable. Within the senior secondary school population, however (that is, at ages 16 and 17, or Years 11 and 12), participation is currently somewhat less than universal, meaning that institutions concerned about declining numbers have—at least in the short term—the potential to increase them. Tables 6 and 7 show the participation rates that would be required to keep current senior secondary school populations at their current levels.[16] As implied, percentages over 100 (denoted by the shaded cells) confirm the short-term nature of the capacity to offset declining numbers with rising participation rates. Within a few decades, total cohort sizes will be smaller than total enrolments today. Indeed, even under the high variant or 'best case' situation, present enrolment numbers will exceed cohort size at age 16 by 2025 in both Tasmania and South Australia. At age 17, where participation is lower, there is more room for increase.

Table 6: Age-Specific Participation Rates Required to Maintain Senior Secondary School Population (16 and 17 Years) at Current Size, TASMANIA

	SERIES I			SERIES II		
	Age 16	Age 17	Total	Age 16	Age 17	Total
2000	79.9	61.8	70.9	79.9	61.8	70.9
2005	84.9	67.2	76.1	85.5	67.8	76.8
2010	86.3	68.0	77.3	88.4	69.7	79.1
2015	96.0	77.4	86.9	100.1	80.8	90.7
2020	99.5	77.2	88.3	112.0	86.2	99.1
2025	103.4	80.5	91.9	124.9	96.5	110.7
2030	105.8	82.7	94.3	132.3	102.9	117.6
2035	109.2	85.0	97.1	141.0	109.5	125.2
2040	113.4	88.2	100.8	152.1	117.9	135.0
2045	118.9	92.4	105.7	167.6	129.5	148.5
2050	124.2	96.7	110.5	186.3	143.6	164.9
Current Number:	5,639	4,370	10,009			

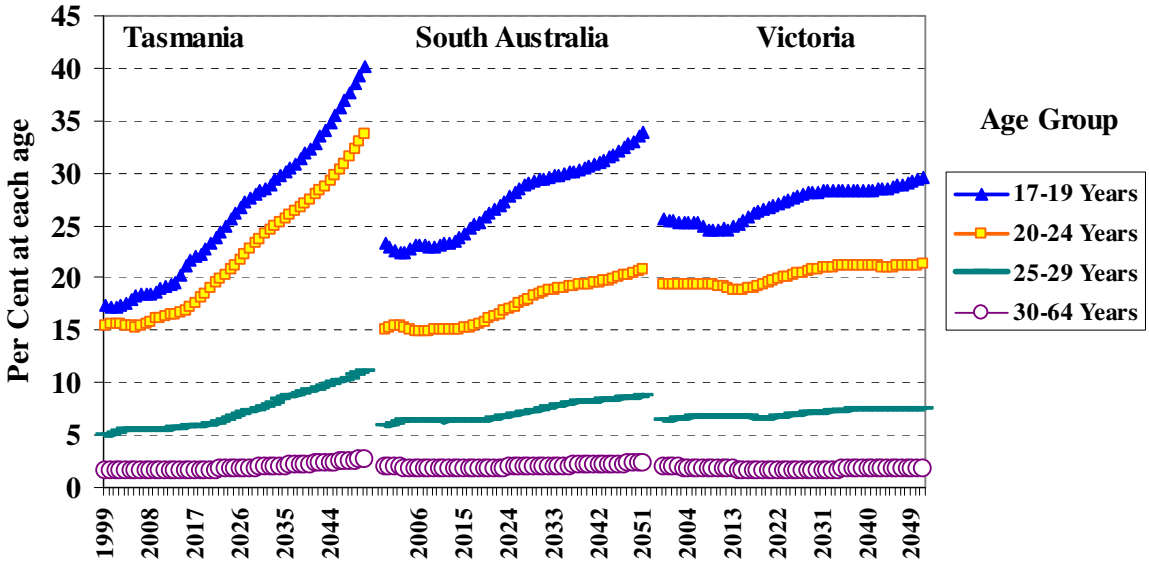
Table 7: Age-Specific Participation Rates Required to Maintain Senior Secondary School Population (16 and 17 Years) at Current Size, SOUTH AUSTRALIA

	SERIES I			SERIES II		
	Age 16	Age 17	Total	Age 16	Age 17	Total
2000	81.6	59.6	70.7	81.6	59.6	70.7
2005	85.4	61.3	73.4	85.2	61.2	73.3
2010	86.8	61.1	73.9	86.3	60.8	73.5
2015	93.0	65.7	79.3	92.1	65.0	78.5
2020	96.5	68.1	82.2	99.7	69.9	84.7
2025	100.6	70.9	85.7	107.2	75.4	91.2
2030	103.5	73.2	88.3	109.8	77.7	93.7
2035	106.1	75.0	90.5	112.0	79.2	95.6
2040	109.1	77.0	93.0	115.1	81.2	98.1
2045	113.4	79.9	96.6	120.4	84.6	102.4
2050	118.2	83.3	100.6	127.2	89.3	108.1
Current Number:	17,068	12,131	29,199			

University participation required to maintain current university population sizes:

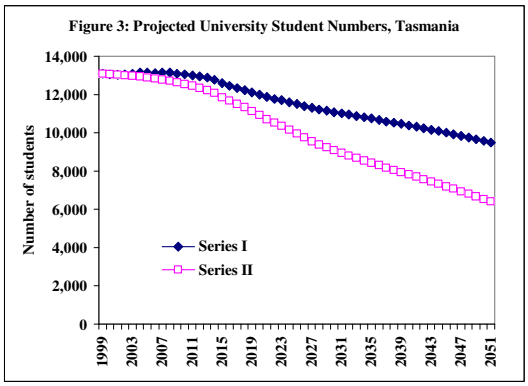
Similarly, it would take a substantial increase in age-specific participation ratios[17] to even maintain the university populations of these States at or near their current sizes. Using ABS Series II data (the medium case), Figure 2 illustrates the point for Tasmania and South Australia, adding in Victoria, Australia's third-oldest State, for comparison. In order to maintain the university student populations of these States around their current sizes, the participation rates of 17-19 and 20-24 year olds—who currently account for 60-64 per cent of students—would have to increase across the projection period by 132 and 117 per cent (Tasmania), 45 and 38 per cent (South Australia), and 15 and 10 per cent (Victoria) respectively. The comparison with Victoria reinforces the argued inevitability of the trends. Despite Victoria being a disproportionate receiver of Australia's international migrants (approximately 23 per cent of the net gain), structural ageing will soon see the same downward pressures on Victoria's school- and university-age populations as will occur in Tasmania and South Australia in the shorter term.

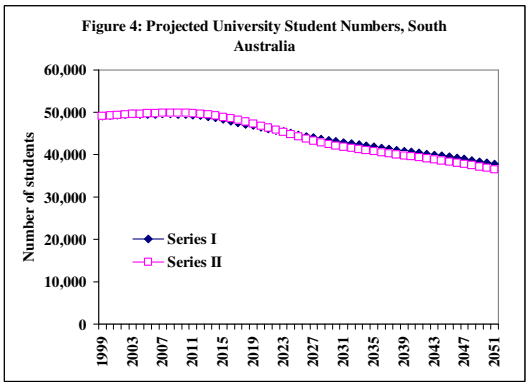
Figure 2: Age-Specific Participation Ratios* Required to Maintain Current University Numbers, Selected States (ABS Series II)



Source: Constructed from DETYA Students 1999: Selected Higher Education Statistics and ABS Population Projections Series II
*(*Student data include overseas students)*

In the absence of such increases in participation rates, Figures 3 and 4 illustrate the projected trends in university student numbers for Tasmania and South Australia according to ABS Series I and II. Little immediate change is forecast, but in Tasmania student numbers decline substantially from 2012 under both Series I and II. Equally noteworthy in the case of South Australia is that although there is a longer lead time until numbers begin to decline, the trends are almost identical under each projection series, indicating that they are highly likely to eventuate.

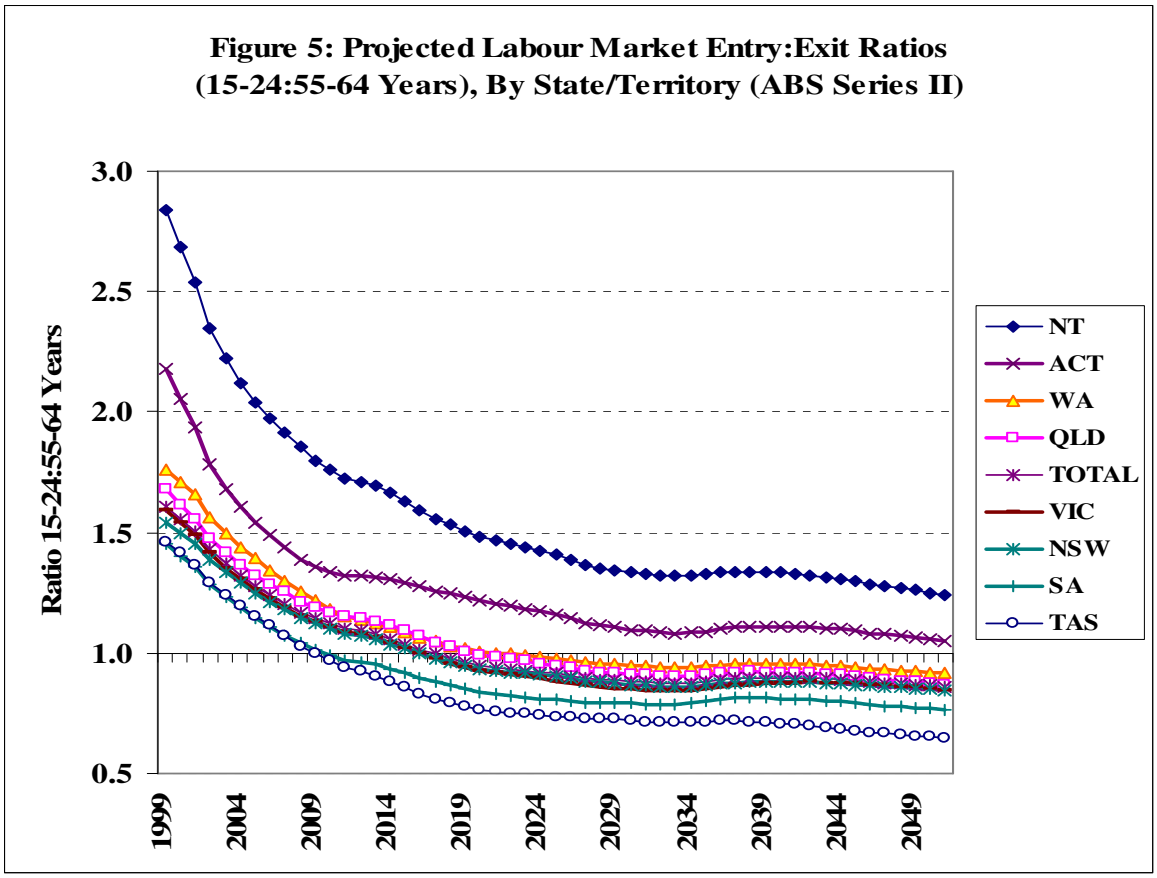




Notes: *Includes overseas students*
Source: *Constructed from DETYA Students 1999: Selected Higher Education Statistics, and ABS Population Projections Catalogue No. 3222.0*

Combined Higher Education-Labour Market Implications:

It cannot be assumed, however, that the 'required' increases in tertiary participation will necessarily follow. The same structural ageing that is driving down the supply of students is also bringing with it a substantial decline in the ratio of labour market entrants to exits, that is, those aged 15-24 and entering the labour market, to those aged 55-64 and approaching retirement. Also unfolding is thus an increase in competition between employers and tertiary institutions for the participation of the young. Regionally, the trends will develop in tandem, with entry:exit ratios as low as 0.7 in the older regions by the early 2020s (Figure 5) accompanying declining school and tertiary populations, while in the younger regions the latter will still be increasing—at least for a few more decades. In Tasmania by 2015 there will be eight young people approaching labour market entry for every ten leaving it, and by 2023, seven for every ten. By contrast, in the Northern Territory and Australian Capital Territory, entry:exit ratios will not decline below 1.0 before the end of the projection period. Added to this scenario will be absolute declines in the total working age populations (people aged 15-64 years) of the older regions, which will add to demand for younger workers, against medium- to longer-term increases in the working age populations of the younger regions.[18]



The extent to which this essentially unprecedented situation is likely to result in competition between educational and labour force institutions for youthful participants has yet seen very little investigation.[19] However, there are strong indications that at least some of the recent increase in tertiary education has reflected hidden unemployment, rather than a true upsurge in demand for tertiary participation. The above trends could thus well foreshadow a forthcoming decline in university and other tertiary numbers, emerging first in the oldest regions.

Summary and Conclusion

Population ageing is bringing with it considerably more than the well-publicised increases in the number and proportions of elderly. Slowly emerging are also significant declines in the school, tertiary, and working age populations that together will generate a very new situation at the young adult ages—substantial competition between the tertiary education and labour market institutions for the participation of the young. At first these changes may appear 'shocking' for institutions that have become used to growth, but it is not difficult to see the potential positives that will emerge. The past few decades have been very frustrating for the young, on the one hand exhorted to remain longer at school and to gain higher qualifications, and, on the other, finding that not even a graduate or post-

graduate degree necessarily delivers a job or good income. The emerging trends indicate that all of this is about to change. At secondary and tertiary institutions, currently overloaded lecturers may find that more time can be spent on quality- than mass-produced education, as those students for whom these institutions have really comprised an educational parking lot move on to the jobs they would have preferred to have all along. For employers there may well be an increase in labour costs, but this in turn implies better paid young consumers, potentially offsetting the decline in consumption that will otherwise come with declining populations. And for those who do stay on to gain higher qualifications, demand *and* increased quality should quickly exceed supply, with attendant advantages in income and conditions of employment.

Certainly there is likely to be some initial angst as public and private primary and secondary schools and then tertiary institutions compete over declining cohorts, but here perhaps it is the 'product' that is being offered that needs to be re-thought. The present duplication of courses and curricula reflects an historical moment in which school age populations grew and ever more schools were built to house them, especially in rural areas; as structural ageing causes school populations to decline, might not specialisation be at least one answer? Why should not a global student pick and choose academic subjects from a variety of schools and institutions, with local campuses becoming both education providers and on-line facilitating venues. In the short term, older populations like Tasmania and South Australia can offset their declining cohort sizes in more conventional ways, for example in Tasmania by increasing the participation rate of 5 year olds, and in both States by increasing participation at matriculation years, and by increasing the recruitment of overseas students. Both States could also look at incorporating newly emerging demands, such as the University of the Third Age (U3A); in China the transference of redundant primary schools into U3A networks is notable. But over the longer term declining school rolls are likely to be seen as less of a problem as the 'capital deepening' (investment in social and human capital) as opposed to 'capital widening' (provision of ever-more infrastructure) possibilities opened up by depopulation emerge.

We might see these endeavours as the A-B-C of future educational demand. Let 'A' stand for *acceptance*—that while short term fluctuations in the three main dynamics of population change (births, deaths and migration) may deliver short term fluctuations in educational demand, the profound structural changes occurring as a result of the demographic transition are inevitable, and must be prepared for. Let 'B' stand for *buffer*—the short-to medium-term measures that might be taken to maintain school and university (and labour force) populations at or near their current sizes. And let 'C' stand for *celebrate*—the idea that for the first time in human history we can look forward to deepening investment in the human capacity, rather than always having to stretch limited dollars across more and

more people. Overall, the opportunities engendered by the changing demographic may be much greater than the perceived losses; only time and creative forward planning will tell.

---

[1] Senior Lecturer in Social Demography, University of Tasmania.

[2] Britany Thompson (2001) Projecting Educational Demand in Tasmania, Unpublished Honours Thesis, University of Tasmania.

[3] For Australia, see G. Hugo (1999) 'Regional development through immigration? The reality behind the rhetoric', *Research Paper 9*, Commonwealth of Australia Parliamentary Library; and P. McDonald and R. Kippen (2001) 'Strategies for labour supply in sixteen developed countries. 2000–2050', *Population and Development Review* 27(1):1-32.

[4] Compared with P. Aungles, T. Karmel, and T. Wu (2000) 'Demographic and social change: implications for educational funding', Commonwealth Department of Education, Training and Youth Affairs. (www.detya.gov.au/archive/highered/occpaper/OOB/full.htm) (accessed 07/05/01); and G. Hugo (2001) who examines the situation for South Australia in 'The Demographics of the School Age Population in South Australia', Mimeo, Department of Geographical and Environmental Studies, Adelaide University.

[5] e.g., *The Mercury*, Tasmania, 30/01/02.

[6] It must be noted that the main effect of international migration is to add to the numbers of men and women at reproductive age, not to increase the birth rate. Typically, the birth rate of immigrants falls to—and even below—that of the host population. See M. Abbasi-Shavazi and P. McDonald (1997) 'Fertility and multiculturalism: immigrant fertility in Australia 1977–1991', Paper presented to the International Population Conference, Beijing.

[7] Australian Bureau of Statistics (2000) *Population Projections 1999-2100*. Catalogue No. 3222.0.

[8] Tasmania's decline in total population numbers is considerably smaller than the net loss at 18-38 years—22,000 in the decade to 2001, the magnitude of this loss having been largely offset by natural increase. For the decade to 1999 see Jackson. N.O. and Kippen. R. 2001. Whither Tasmania? A note on Tasmania's population 'problem'. *People and Place* 9(1):27-37.

[9] The detailed fertility, mortality, and migration assumptions underlying the Series II projections can be found in ABS, *ibid*, Chapter 4. In brief, fertility assumptions range from 1.41 in the ACT to 1.92 in the Northern Territory; life expectancy increases by approximately 1 year for every ten years projected for all States and Territories; while the bulk of net international migration gains are assumed to go to NSW (42%), Victoria (23%), Queensland (16%), and Western Australia (14%). For projected educational trends with Series I projections see Aungles et al. *op. cit*., where the patterns are almost identical.

[10] Australia's current population distribution, and net international migration to each region, are approximately as follows. New South Wales (34%; 42%), Victoria (25%; 23%), Queensland (18.3%; 16%), Western Australia (10%; 14%), South Australia (8%; 3.5%), Tasmania (2.6%; 0.2%), the ACT (1.7%; 0.3%) and the Northern Territory (1%; 0.7%). See also Hugo. G. 2000. Declining fertility and policy intervention in Europe: Some lessons for Australia? *Journal of Population Research* 17(2):175-197.

[11] These assumptions are given beneath Tables 2 and 3.

[12] Aungles et al. *op. cit.*

[13] Numbers differ slightly to Thompson *op. cit*. in that the present study includes those aged 5 years.

[14] With each successive Series assuming a higher net migration loss for Tasmania, the high and medium variants may be considered the 'best' and 'medium' case scenarios. The Series III 'worst case' scenario is not presented as it would require an average annual net migration loss of 3,430 across the entire projection period, which feedback mechanisms indicate is unlikely to eventuate. It should be noted, however, that the Series II migration assumptions of –1,870 per year are somewhat 'better' than Tasmania's actual experience of an average net migration loss of 2,400 per year over the past decade.

[15] In 2000 a further 52 combined primary/secondary schools existed in Tasmania; 26 were Government (public) and 26 Non-Government. There were also 9 special schools, 8 of which were Government schools. See Australian Bureau of Statistics, *Schools 2000*, Catalogue 4221.0.

[16] Current numbers attending secondary school at each age are calculated as a percentage of each future cohort.

[17] These data include overseas students attending university in each State. The data thus give *ratios* of numbers of students at each age to numbers of population at each age in each State, rather than *rates*.

[18] Here the short-term is considered to be the forthcoming 20 years, the medium term, 20-40 years, and the longer-term, 40-60 years. These time-frames are justifiable, given that demographic trends have, in general, long term predictability. For example, births occurring now permit their resulting cohort size to be 'predicted' for as much as 100 years.

[19] cf. R. Easterlin (1988) *Birth and Fortune*, 2nd Edition, New York: University of Chicago Press, who raised these issues theoretically.