Population Ageing in Tasmania's Local Governments: A Community-Level Perspective

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March 2005

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Reference details (please note that this report has not yet been peer reviewed)

Jackson N.O and and Felmingham, B. (2005) *Population Ageing in Tasmania's Local Governments: A Community-Level Perspective,* ARC-Linkage Funded Research Report to the Tasmanian Local Government Association and Council for Economic Development of Australia, University of Tasmania.

Abstract

A comprehensive analysis of the four dimensions of population ageing—numerical and structural ageing, natural and absolute decline—was undertaken for each of Tasmania's 29 local government areas (profiles may be viewed at http://www.taspop.tasbis.com). With few exceptions, all child, youth, young and middle-adult populations are projected to decline in size between 2004 and 2021, while at 55 years and above the picture is reversed, with all LGAs experiencing significant growth. This 'age transition' has its sequel in declining ratios of labour market entrants to exits, which become negative at state level by 2012 but are already negative in eight LGAs. Structurally older regions that are adjacent to each other will experience increasing difficulties in recruiting young workers; the 'problems' are further differentiated by industrial and occupational differences at LGA level. However there are tantalising indications of declining unemployment as labour market entry/exit ratios decline, demonstrated here empirically.

A second structural crossover occurs in the ratio of elderly to children (defined as 0-14 and 65+ years), which sees Tasmania with more elderly than children by 2012, a situation already extant in at least one LGA. This crossover foreshadows a shift to natural decline (where deaths exceed births), again already extant in five Tasmanian LGAs. Insufficient migrants to offset natural decline will result in absolute decline. The overall outcome of these trends indicates that between 2004 and 2021, 12 (41 per cent) of Tasmania's LGAs are likely to decline in size, while four (14 per cent) may expect growth of less than 5 per cent, and the remaining 13 (45 per cent), growth greater than 5 per cent. In sum, the changes herald the need for a major shift in local government thinking about what constitutes population 'growth' and how to prepare for the ageing. Population ageing will be played out at the level of local government: working at state- and national-level is both inappropriate and counter productive.

Background and Overview:

Like the populations of all developed regions, Tasmania's population is ageing. It is ageing *numerically*, as improvements in life expectancy bring about an absolute increase in the numbers at old age, and it is ageing *structurally*, as the declining birth rate brings about a decrease in the proportion of the population that is young and an increase in the proportion that is aged. As elsewhere, these two dimensions will soon come together, as the baby boomers—born in Australia 1946-65—contribute to both the numbers and proportions at old age.

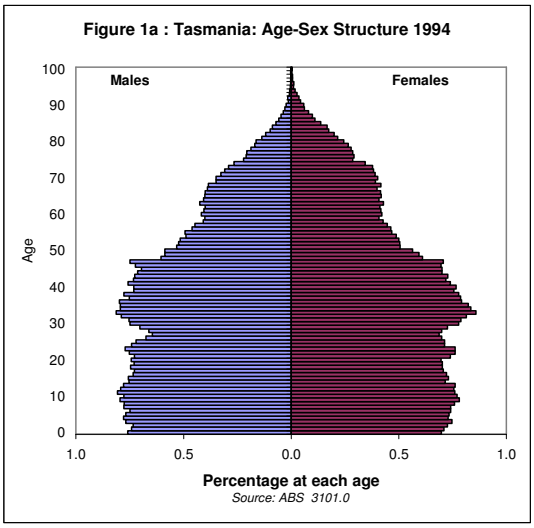
These two dimensions of ageing, which have different implications for Tasmania's (and Australia's) different institutions, have two further but somewhat less understood features—natural decline, which will occurs as deaths exceed births (expected in Tasmania within two decades and Australia within three) and absolute decline, which will occur if the numbers of migrants become insufficient to replace the 'lost' births and increased deaths (in Australia during the second half of the century; in Tasmania somewhat earlier).

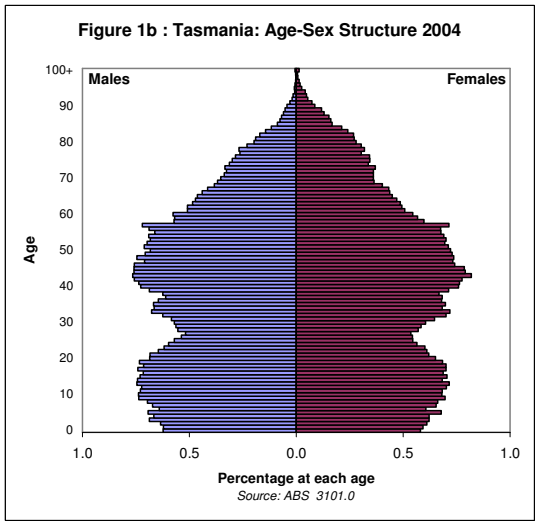
Importantly, each of these trends can be 'weighted' in terms of the degree of confidence with which they can be anticipated. Also of major significance for Tasmania's policy makers and planners is that the structural ageing that Tasmania is experiencing is not of the conventional kind, the primary cause of which is low fertility. Rather, it is a 'premature' form (Jackson and Kippen 2001), due in part to a decade (1991-2001) of excessively high net migration loss at the young adult ages (observable as a deepening 'bite' at those ages in Figures 1a and 1b below), and in part to smaller but equally significant gains of older migrants. Although net migration is currently positive (around 3,500 for the year ended December 2003), the past 12 years have seen Tasmania lose a net 25,000 people aged 18-38 years.[1] This loss is now having a compounding effect on the speed of structural ageing. The current birth rate of 1.9 is relatively high (compared with Australia at 1.7) and not that much below the level required for the replacement of each generation (2.1 births per woman). However the relatively small number of people at these key reproductive ages means that the total number of children being delivered into the base of the population age structure is rapidly declining (see the base of Figures 1a and 1b). Currently just on 40 per cent of Tasmania's population is aged 20-49 years (the key reproductive ages), compared with 43.5 per cent for Australia.

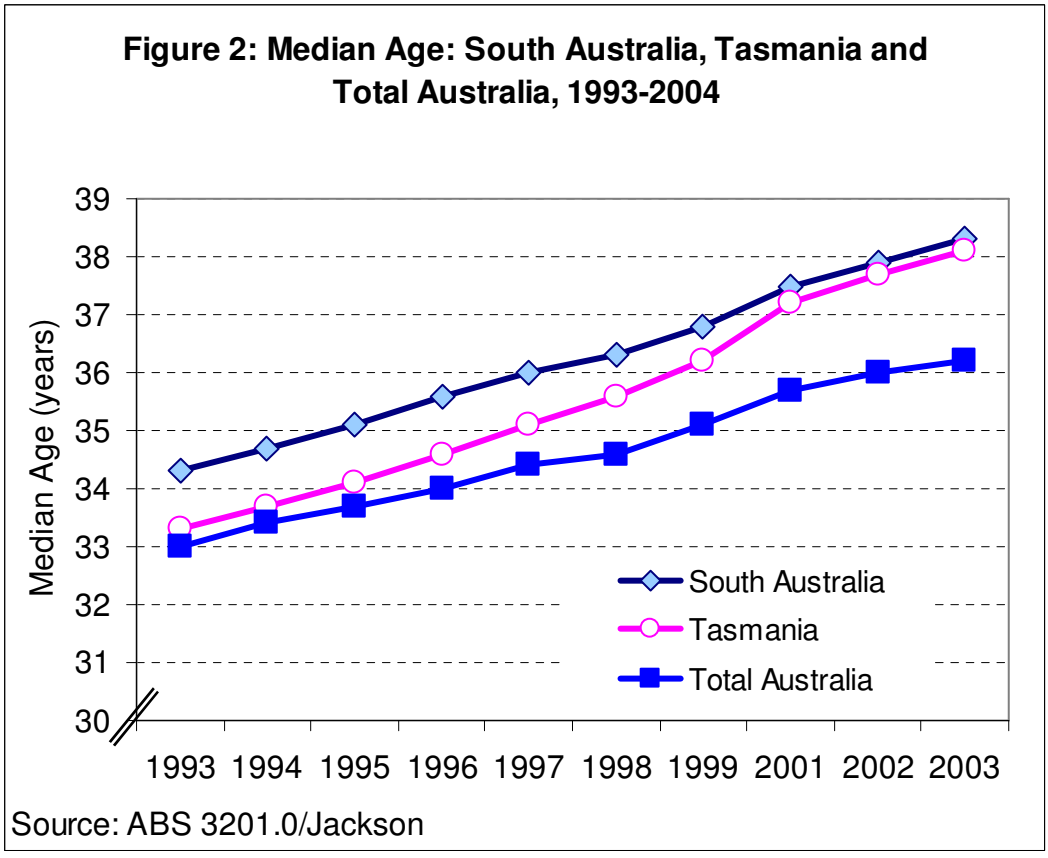
Together these dynamics have caused Tasmania's age structure to shift from being the nation's most youthful at the middle of the 20th Century, to its currently second-oldest and fastest-ageing. It is also likely that the state will soon take over from South Australia as the nation's oldest. Currently only one month separates the median ages of Tasmania and South Australia, down from 12 months just one decade ago (Figure 2). Supporting the argument, Tasmania already has the distinction of having Australia's structurally oldest male population (ABS 2004).

[1] A small portion of this loss will reflect declining birth rates across the period.

Figure 1: Tasmania: Age-Sex Structures 1994 and 2004







Placing these disparities in a national context, Table 1 provides an overview of projected structural population ageing for the states and territories in terms of percentages aged 65+ years (according to medium variant assumptions), and the 'speed' of ageing (see notes for definition). The currently youngest to oldest regions are arranged from left to right. It should be noted that the already sizeable disparity (11 percentage points) between the regions will now open up, with the gap between the youngest and oldest regions opening to around 22 percentage points by 2050. This marked regionality of Australia's population ageing is also reflected in the different speed of ageing for each region, which ranges from an annual average percentage point increase in the proportion aged 65+ years of 0.17 for Northern Territory to 0.42 for Tasmania. These statistics translate into an average increase of one percentage point (for the population aged 65+) every 2.4 years for Tasmania, compared with every 5.9 years for Northern Territory. The data clearly indicate that some states will be dealing with profound ageing-related issues well ahead of their structurally younger counterparts.

Table 1: Percentage Aged 65+ years, Australia's States and Territories, 2004-2050 (selected years)

	NT	ACT	WA	QLD	VIC	NSW	TAS	SA	TOTAL
2004	4.2	9.3	11.6	12.0	13.3	13.4	14.5	15.1	12.9
2010	5.3	11.2	13.2	13.6	14.6	14.7	16.6	16.6	14.3
2020	7.9	16.0	17.9	18.1	18.7	18.6	22.7	21.7	18.6
2030	9.9	19.6	22.3	22.3	22.8	22.6	28.7	26.7	22.7
2040	11.2	22.0	25.2	25.1	25.6	25.3	31.9	29.6	25.5
2050	12.0	23.4	26.7	26.7	27.2	26.7	33.6	31.0	26.9
Speed	0.17	0.31	0.33	0.32	0.30	0.29	0.42	0.34	0.30

Source: *Australian Bureau of Statistics (2003) Catalogue 3222.0*

Notes: *Medium Variant Assumptions (including annual net migration 100,000)*

Speed (or 'force') of ageing refers to the annual average percentage point increase in the proportion aged 65+ years; here the speed pertains to the entire 46 year period 2004-2050

The regional disparities are even more pronounced and volatile at the level of local government. Jackson (forthcoming) argues that the changing demography has significant implications for the basis upon which local governments (and state governments) receive population-oriented financial assistance from the Australian Government. Specifically, she argues that the use of 'own state' comparisons as the basis of this assistance is defective; that as population ageing proceeds, it will cause some local governments to be under- or over-compensated by contrast with their similarly-aged counterparts in other states; and that population projections should form part of the funding methodology mechanism—currently they do not.

Illustrating the first issue, when compared on the 'own state' methodology, both Tasmania and Western Australia in 2001 had 48 per cent of their local government areas with higher than own-state average proportions aged 65+ years. However, when compared against the national average, Tasmania had 62 per cent, while Western Australia had only 29 per cent. Assuming that both states were using a 'higher than average proportion aged 65+ years' disability factor, the difference would mean that Tasmania would have four (or 14 per cent) of its local government areas that arguably 'should' be being financially assisted for being 'old', but would not be, while Western Australia would have 27 (19 per cent) that would (or could) be being assisted, but probably 'shouldn't' be.

The situation is even more problematic when the relatively youthful Northern Territory is added to the equation. Currently Australia's structurally 'youngest' region (in 2001, 3.4 per cent aged 65+ years), the Northern Territory in 2001 had no local government areas with proportions of elderly above the national average, but 33 per cent when compared against its own average, increasing to 44 per cent by 2019. In reality none of the Northern Territory's local government areas in 2001 exceeded six per cent aged 65+ years (none were thus 'officially old', denoted as 10 per cent aged 65+), while by 2019 only one (Coomalie) is projected to have passed the 10 per cent mark. Yet, all of those above the state average could conceivably be/have been being compensated.

Such outcomes, which will now quickly become more pronounced, seem antithetical to the intended objectives of 'horizontal equalization', the main principle underlying fiscal transfers to local governments, which is basically to level the playing field between them, albeit currently within-state.

Illustrating the second issue, Jackson explains that the base populations on which the various relativities ('disability factors') are currently calculated are those of the previous year; there is no inclusion of population projections. The markedly different speeds at which population ageing will unfold across Australia's local government areas will cause this aspect of the funding methodology to become increasingly problematic as councils experiencing rapid increases in their 'old-old' populations will struggle to respond *vis-à-vis* funds made available on the previous year's numbers.

Among other findings, Jackson also shows that:

- between now and 2019, the percentage of population aged 15-24 years in almost every LGA across the nation is projected to decline. This change has significant implications for the age profile disability factor 'percentage aged 15-24 years *above* state average', which should perhaps be reconceptualised to assist LGAs with the most rapidly *declining* percentages at those ages
- until 2006, none of Australia's states or territories will have more elderly than children. However local government experience of the phenomenon has already well and truly begun, with, respectively, 24, 18 and 16 per cent of South Australia's, Victoria's and the ACT's local government areas already having more elderly than children. By comparison, reflecting its premature ageing, in 2001 *none* of Tasmania's local government areas were this 'old', while by 2019, 76 per cent will be.
- 314 (or 44 per cent) of Australia's 714 local government areas analysed in Jackson's paper are projected to be smaller in 2019 than they were in 2001. If the 53 local government areas for which no change has been assumed were to be added, this would bring the number and proportion projected to decline and/or not to increase to 367, or 51 per cent. For Tasmania the data show up to 18 (62 per cent) of local government areas declining. (A background paper, Felmingham, Jackson and Zhang (2002), illustrates some of the economic impacts of these changes for Tasmania's local governments.)

Jackson argues that some resolution to these problems (at least as far as their funding implications go) may be achievable if States Grants Commissions were to shift the

basis of their population-related assistance from 'own state' to national comparisons, and from cost adjustments based on current age profile, to future age profile.

The following analysis updates and elaborates these issues for Tasmania specifically. The analysis begins with an overview of population ageing at state level, and then at the level of local government. It is developed around individual socio-demographic profiles for each of Tasmania's 29 local government areas (as they were defined in 2001). The profiles, which comprise Appendix A and are downloadable from **http://www.taspop.tasbis.com**, include a detailed analysis of projected labour market entry: exit ratios (see Glossary) and their implications for *organisational renewal* (Management Advisory Committee [MAC] 2003). Organisational renewal refers to expected difficulties associated with the future recruitment of labour market entrants *vis-à-vis* forthcoming baby boomer retirement. It is argued that structurally older LGAs that are geographically adjacent to each other may experience particular difficulties in recruiting their future labour forces, and may need to consider new models of recruitment. However declining labour market entry/exit ratios are also correlated with trends unemployment to indicate that the two may fall in tandem. The profiles also give projected trends in school age populations (indicating future educational demand); and future trends in the elderly population in terms of their implications for elder-oriented goods, services and facilities. The paper concludes with several recommendations.

The database – and a word about projections

The following analysis draws on data developed by the Australian Bureau of Statistics (ABS). The projections used are those of the 'old' high variant Series A updated in 2001 (to a 2000 base). It is acknowledged that these projections (ABS 2001) are not the most desirable to be using in 2004, nor are they the most recent set of projections available. However, for the reasons outlined below, it was decided (by the authors) that they are the most appropriate. First, the most recent ABS projections (updated to a 2002 base – ABS 2003a) are available by the medium variant only. These assume for Tasmania a constant average annual net migration loss of 1,110 (comprised of a net interstate loss of 1,500 partially offset by a net international gain of 390) across the projection period. While it is true that Tasmania experienced an average net loss above 1,600 in each of the past the past ten years—inclusive of the substantial gains experienced over the past two years, it has never experienced *sustained* losses of that magnitude. Since 1962, for example, Tasmania has experienced an annual average net loss of 631; since 1972, -499; and since 1982, -546 (ABS 3101.0 various years).

By comparison, the 'old' Series A projections assume an annual net loss of 310, comprised of a net interstate loss of 500 partially offset by a net international gain of 190. The fertility assumptions are almost identical to those in the 'new' medium variant Series B, both of which have the birth rate falling from its present 1.9 to around 1.8 by 2009-2011 and then remaining constant; and life expectancy at birth continuing to improve by around one year for each ten years projected, but at a decelerating rate.[2] As implied it is our considered opinion that the 'old' Series A data more accurately reflect historical levels and patterns than the 'new' Series B.

[2] For the 'old' projections, see ABS (1999) Population Projections, Catalogue 3222.0, Table 4.60. For the 'new' projections, see ABS (2003) Population Projections, Catalogue 3222.0, Table 5.60 (Series 29B).

By way of comparison, Table 2 provides a summary of the two sets of data, and compares the projected numbers for 2002 with actual (observed) numbers. The 'old' Series A base population is clearly lower than both the 'new' Series B base and numbers actually observed for 2002. However, by 2021 the situation is reversed, while in both 2002 and 2021 the broad age group proportions indicate very little difference between the Series A and B age structures. The dates of expected crossovers—the point at which Tasmania will have more elderly than children, and more labour market exits than entrants—also differ very little, both occurring 1-2 years later under the Series A projections. Accordingly it should be considered that the following analysis—based on the 'old' Series A—may slightly underestimate the speed at which ageing will occur, but may be closer in terms of the eventual size of local government populations. Indeed, before proceeding with the community level profiles, it should be remembered that population projections are not forecasts, but indications of what future population size and composition will be *if* the underlying assumptions regarding births, deaths and migration actually prevail.

Table 2: Comparison Between 'Old' and 'New' Projection Series in 2002 and 2021

	Old' Series A	New' Series B	Actual
2002			
Number at 2002	470,523	472,725	472,612
Percentage aged 0-14	20.4	20.7	20.7
Percentage aged 15-24	13.6	13.3	13.3
Percentage aged 25-64	52.1	52.1	52.1
Percentage aged 65+	13.9	14.0	14.0
Ratio Elderly: Children	0.7	0.7	0.7
2021			
Number at 2021	479,272	474,586	…
Percentage aged 0-14	15.6	15.9	…
Percentage aged 15-24	11.1	11.2	…
Percentage aged 25-64	51.5	49.5	…
Percentage aged 65+	21.7	23.5	…
Ratio Elderly: Children	1.4	1.5	…
Crossovers expected			
More elderly than children	2012	2011	…
More labour market entrants than exits	2012	2010	…

Source: ABS Supertable Datacubes 2001 and 2003a; and ABS 3201.0

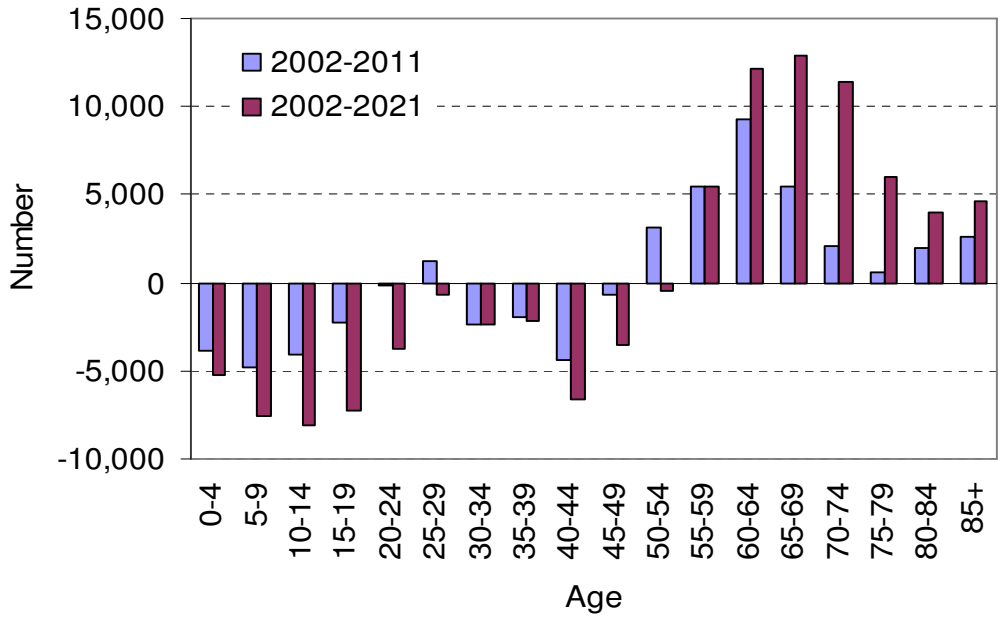
The other data used for this report to develop the industrial, occupational and educational profiles come from the Australian Bureau of Statistics Basic Community Profiles (BCPs) and Time Series Profiles (TSPs). Note that there are small variations in these data - see Glossary notes for entry/exit ratios.

Population Ageing in Tasmania

Structural ageing: Figure 3 provides an overview of the projected changes by age for Tasmania. (Data for individual local government area will be found at Appendix A, see http://www.taspop.tasbis.com). Most striking is that not only Tasmania but all local government areas experience significant declines at the younger ages and increases at the older ages. The trends are not simply artefacts of the database issues outlined above. Jackson (2004a, 2004b) shows similar patterns for Australia and every state, territory, and local government area, separated only by time. It should

also be recalled that these high variant projections assume only a minor reduction in Tasmania's birth rate—to 1.8 births per woman—somewhat above the level for total Australia today (1.7). Should the birth rate decline further, the declines in numbers at the younger ages will be greater. Of course, should the birth rate undergo an increase (for example as a result of the Australian Government's 'Baby Bonus') the declines at younger ages will not be as great. However, it should be recalled that a significant part of Tasmania's structural ageing 'problem' is the deficit of young men and women of reproductive age and not the birth rate *per se*: in the short- to medium-term it would take a sizeable increase in the birth *rate* to compensate for the relatively small *numbers* of potential parents.

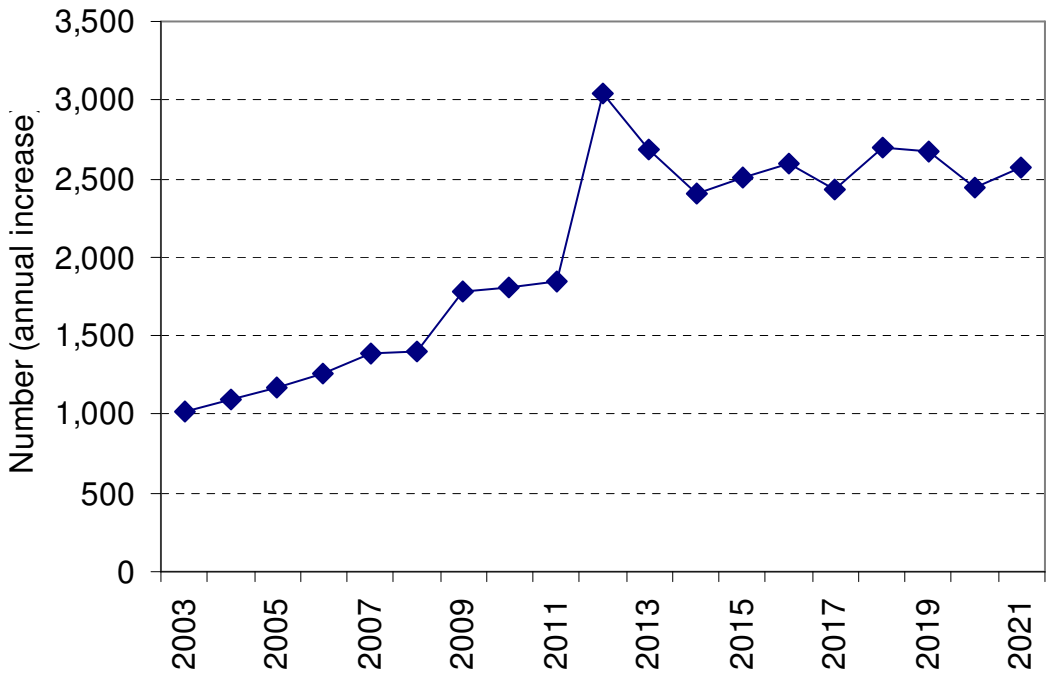
Figure 3: Tasmania: Projected Change by Age, 2002-2011 and 2002-2021



We can thus assume with a fair degree of confidence that the near future will look much like that depicted in Figure 3 and its local government analogues (Appendix A). The data vividly illustrate the changing *ratio* of young to old. It is this picture that is informing growing government interest in the phenomenon of structural ageing; specifically, the minimal growth at the 'working age population' / primary tax base years (15-64 years) *vis-à-vis* that at the elderly and potentially dependent ages.

Numerical ageing: Figure 4 focuses on changes at the older ages only: the phenomenon of numerical ageing. The data vividly illustrate the significance of the changes. In Tasmania as a whole, 1,260 additional people aged 65+ years will be added to the population between 2005 and 2006. This number will increase steadily to an annual increment of 2,000 by 2011, and then escalate to around 3,000 for the year 2012—the year that the baby boomers begin reaching 65. The rate of increase will then reduce, but will continue to hover around an additional 2,500 persons of this age every year across the following decade (and a decade beyond, not shown here).

Figure 4: Tasmania: Projected Annual Increase in Numbers Aged 65+ Years, 2002-2021



Importantly, unlike structural ageing, numerical ageing is not dependent on what is happening with the birth rate. Instead, the increase in numbers at older ages is 100 per cent guaranteed; they are already born and well into the age structure: those who will be aged 65+ years in 10 years time are already 55+ years, and so on. We know the approximate rates at which they migrate, and die—these dynamics have already been added in to the projections (and in the short to medium term differ only minutely by ABS projection series).

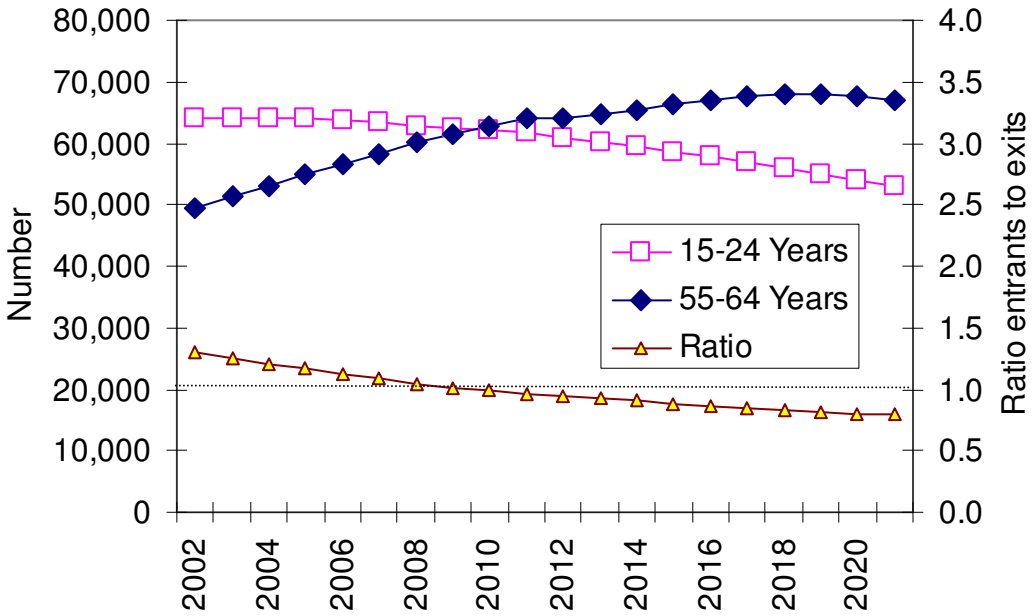
Drawing the numerical and structural dimensions of population ageing together, it can be understood that it is numerical ageing that is driving up the demand for elder-oriented goods and services, while it is structural ageing that is the constraining factor (in terms of the ability of governments to fund them). That is, even if the working age population (read primary tax-base) were to remain constant in size, it will soon decline in relative terms *vis-à-vis* the increased proportions at older ages.

Labour market implications: The information in Figures 3 and 4 can be drawn upon to indicate a broad range of other implications arising out of population ageing. For example, there will soon be larger numbers of working age people approaching retirement age than labour force entry age (see Glossary for 'entry/exit ratio'). This situation foreshadows not only a relative contraction of the labour market but also an absolute contraction. The trends will be further compounded by the fact that they are not unfolding in Tasmania or Australia alone. Data for a range of OECD countries indicate that over the next 25 years, around 70 million workers will retire, to be replaced by just 5 million labour market entrants—and this takes account of current levels of net migration for these countries. The situation contrasts markedly with the

past 25 years, during which around 45 million people in OECD countries retired, but were replaced by 120 million baby boomers.

Figure 5 illustrates the changes for Tasmania. Currently the ratio of people at labour market entry age to those approaching exit age is 1.2 (or 12 entrants for every ten exits - down from 2.0, or 20 for every ten in the 1970s). As was indicated in Table 1, a crossover is expected to occur around 2010-2012. From that point the number of Tasmanians at labour market exit age will exceed the number at entry age and the ratio will become negative; the data further imply that by 2017 there will be only eight entrants for every ten exits. This crossover is unprecedented in the history of the developed world, and will have wide ranging implications. As Australia's fastest ageing state, it is also likely that the phenomenon will be experienced first in Tasmania.

Figure 5: Tasmania: Projected Numbers Aged 0-14 and 65+ Years, and Entry/Exit Ratio, 2002-2021



Among the many implications of the crossover is likely to be an increase in competition for the participation of the same young (and presumably older) workers, played out between the labour market and the tertiary education institutions. That is, the same decline in the numbers of people at labour market entry age will also impact upon university and other tertiary education populations, while it could be assumed that the 'managers' of both will wish to keep their respective numbers constant for as long as possible (Jackson and Thompson 2001). It takes little imagination to consider other possible outcomes of such competition, such as an increase in the earnings of workers, especially young workers, and declining unemployment levels. These also imply a potential increase in labour costs.

Tables 3 and 4 outline the situation for Tasmania's occupations and industries as it was in 2001. While the overall ratio of entrants to exits (defined here as *employed*

persons aged 15-24 years to those aged 55+ years) for Tasmania is 1.4 (that is, 14 people at entry age for every ten approaching retirement age), these ratios differ once disaggregated by occupation or industry (see Appendix B for LGA data). Among the occupational groups we find already negative ratios (less than one entrant per exit) for Managers and Administrators, Professionals, and Associate Professionals; and by industry for Agriculture, Forestry and Fishing; Mining; Government Administration and Defence; Education; and Health industries. Reflecting its older age structure, the individual occupation and industry ratios for Tasmania are generally lower than for Australia (for example, in Tasmania there are currently five Professionals at labour market entry age for every ten approaching retirement age, compared with eight for every ten in Australia – data not shown here).[3]

Table 3: Tasmania: Entry: Exit Ratios By Occupation, 2001

	15-24 years	55+ years	Ratio
Advanced Clerical and Service Workers	491	704	0.7
Associate Professionals	2021	2535	0.8
Elementary Clerical, Sales and Service Workers	7494	1421	5.3
Intermediate Clerical, Sales and Service Workers	5406	2632	2.1
Intermediate Production and Transport Workers	2142	1953	1.1
Labourers and Related Workers	3851	1924	2.0
Managers and Administrators	590	3408	0.2
Professionals	2042	3877	0.5
Tradespersons and Related Workers	4442	2099	2.1
Total	28,479	20,553	1.4
Source:	ABS (2003d) Basic Community Profiles		

Table 4: Tasmania: Entry: Exit Ratios By Industry, 2001

	15-24 years	55+ years	Ratio
Accommodation, Cafes and Restaurants	2,903	928	3.1
Agriculture, Forestry and Fishing	1,435	2,619	0.5
Communication Services	287	198	1.4
Construction	1,188	973	1.2
Cultural and Recreational Services	841	501	1.7
Education	889	1,993	0.4
Electricity, Gas and Water Supply	121	157	0.8
Finance and Insurance	604	298	2.0
Government Administration and Defence	656	1,092	0.6
Health and Community Services	1,528	2,501	0.6
Manufacturing	3,057	2,065	1.5
Mining	110	122	0.9
Personal and Other Services	1,124	692	1.6
Property and Business Services	1,941	1,769	1.1
Retail Trade	9,512	2,394	4.0
Transport and Storage	668	1,151	0.6
Wholesale Trade	1,293	936	1.4
Total	28157	20389	1.4
Source:	ABS (2003d) Basic Community Profiles		

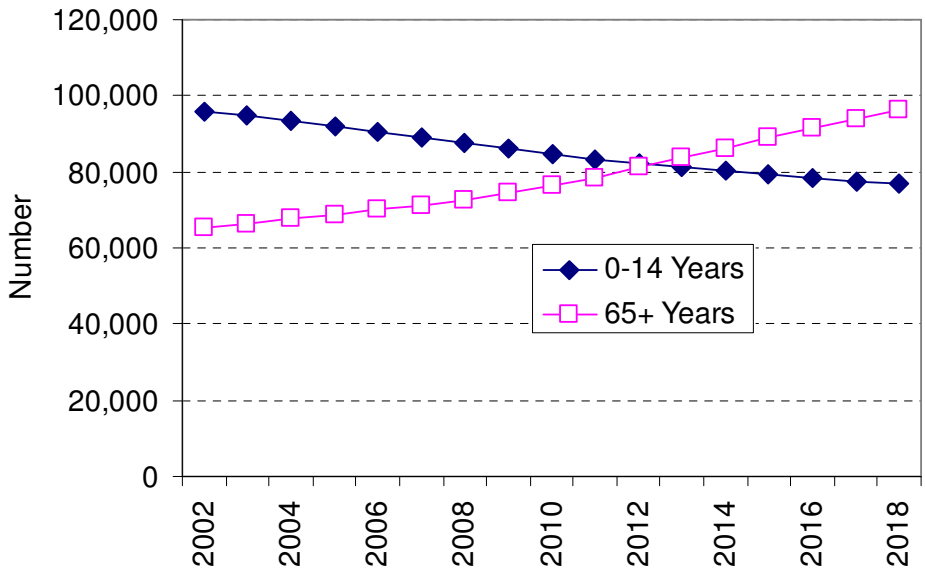
While it would be correct to claim that the ratio of entrants to exits *is* likely to be low in some of these categories—for example, among Managers and Administrators,

[3] The total ratio (1.4) differs from that shown above in Figure 5 (1.2). The difference is due to the data in Figure 5 being based on all persons aged 15-24 and 55-64 while the data in Table 3 pertains to the employed population only, and to age groups 15-24 and 55+ years.

Professionals, Associate Professionals, and Education and Health workers, where occupation often equates with seniority—the *continuously declining* entry: exit ratios referred to above indicate that competition in these occupations/industries will soon become extreme. It will not be possible (easily) to simultaneously replace all the managers and administrators, doctors, nurses, lawyers, accountants, health and education professional etc. who will soon be retiring. It may certainly be that some will be encouraged to remain in the workforce longer, but there is sufficient international evidence to suggest that this will not be the case among professionals (Henkens and van Dalen 2002). In particular, it appears that those persons of most interest to the government—older highly skilled, highly superannuated professionals (who are mostly male)—are those most likely to take early retirement, while those with lower skills, lower levels of private superannuation, and disproportionately female, have a greater imperative to work longer (Living in Australia 2003). Current information also suggests that 'leading-' and 'lagging-edge' boomers (those born approximately 1946-55 and 1956-65) differ in their motivations and imperatives to remain in the workforce, and that these intentions and options also differ by gender, industry, and state.

Intergenerational Implications: A similarly unprecedented crossover is projected to occur in the ratio of young to old *per se*. This is illustrated for Tasmania in Figure 6. From around 2012, Tasmania will have more elderly than children (see Glossary for 'elderly/child ratio'). This is the same year in which, in Tasmania as a whole, there will also be more labour market exits than entrants. These shifts will undoubtedly be characterised by 'intergenerational tensions' as the increasing proportions of elderly and the decreasing proportions of young (or the latter's parents) battle it out for resources—for example, walking paths or skateboard parks. Further on (from the 2020s) the shifts will be characterised by the more numerous elderly seeking to sell their homes (and other assets) to the less numerous young, with important implications for the property and capital markets (Kuné 2003).

Figure 6: Tasmania: Projected Numbers Aged 0-14 and 65+ Years, 2002-2021



Educational Demand: Looking back at Figures 5 and 6 it can also be understood that a significant decrease in demand for primary (0-14 years), secondary and tertiary (15-24 years) education is unfolding (see also Jackson and Thompson 2002). While school numbers have remained approximately static since the early 1990s (see Table 5), the underlying demographic trends foreshadow the forthcoming un-viability of many of Tasmania's current 281 primary, secondary and combined schools; this is especially so when the data are considered at local government level and by public or private sector.

Table 5: Tasmanian Students by Type of Educational Institution 1996-2001

	1991	1996	2001
Infants/Primary:			
Government	36,198	36,286	35,198
Catholic(a)	n.a.	7,301	6,852
Other Non Government	10,200	3,801	3,974
Total	46,398	47,388	46,024
Secondary:			
Government	22,053	22,279	19,944
Catholic(a)	n.a.	5,356	5,621
Other Non Government	8,580	4,401	4,440
Total	30,633	32,036	30,005
Total			
Government	58,251	58,565	55,142
Catholic(a)	n.a.	12,657	12,473
Other Non Government	18,780	8,202	8,414
Total	77,031	79,424	76,029

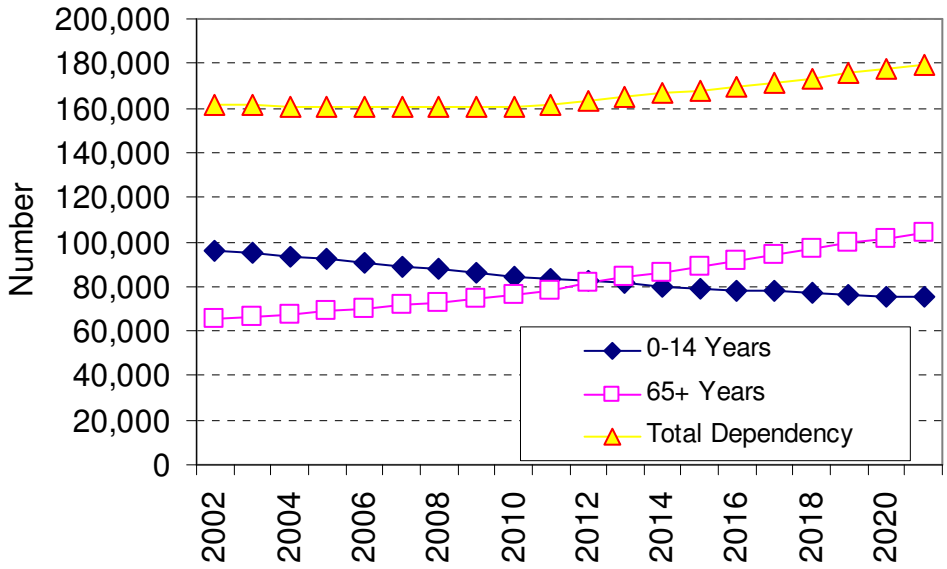
Source: *Compiled from ABS (2003) Time Series Profiles, Table 10*

Notes: *(a) In 1991, Catholic schools are included in 'Other Non Government'.*

However, at the same time that decreasing educational demand will be causing problems for educational institutions and their administrators, the declining numbers will at least offer some respite from the increasing 'dependency burden', typically measured as the ratio of those aged 0-14 and 65+ years to those in the working age (15-64 years) population.

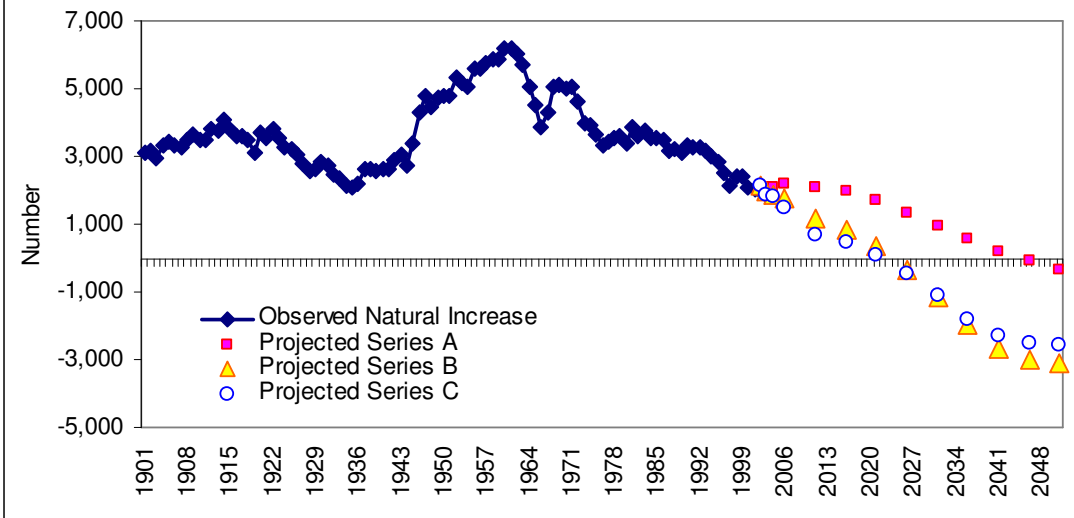
Dependency Burden: Figure 7 illustrates Tasmania's total 'dependency burden', disaggregating also its 'youth' and 'aged' components. Unfortunately, not only will total dependency rise, but from 2012 its composition will change dramatically, from the less expensive requirements of youth to the more expensive requirements of elderly. Looking at the situation via an alternative measure, the 'Potential Support Ratio' (PSR) of persons of working age to the elderly, in Tasmania this support will fall from its current 4.7, to around 2.9 by 2021.

Figure 7: Tasmania: Projected 'Dependency Burden' 2002-2021



Natural Decline: The shift to more elderly than children foreshadows the third dimension of population ageing, that of natural decline. Seemingly paradoxically, the driving force of natural decline is not low fertility *per se*, but rather the increased numbers of deaths *vis-à-vis* the declining numbers of births that will arise as population ageing unfolds. Figure 8 illustrates the situation for Tasmania, showing that the shift to natural decline, where deaths exceed births, is expected to occur sometime between 2021 and 2041. Thereafter, insufficient migrants ('replacement migration') would also see Tasmania's population enter absolute decline.

Figure 8: Tasmania: Natural Increase and Decline, Observed (1901-2003) and Projected (2002-2051)



Source: ABS 3102.0, 3101.0, 3222.0

Importantly, as implied at the outset of this paper, Tasmania is not alone in facing natural, and in all probability, absolute decline. It is expected that both dimensions will be experienced by most of the world's countries during the present century—developed and developing countries alike (e.g., Lutz, Sanderson and Sherbov 2001; Yeoh, Lutz, Prachuabmoh and Arifin 2003). In Australia the shift to natural decline is expected around the mid-2030s—sooner if net international migration falls much below 100,000 per year; while absolute decline will almost certainly begin during the early second half of the century (Australian Bureau of Statistics 2003). As a comparison, many European countries are already experiencing natural decline, while a few, including other more recently developed countries such as Japan, are already experiencing absolute decline. By 2050 approximately 33 countries are projected to have begun absolute decline, among them even China (United Nations 2000a: 6).

Except in rare cases, increased migration levels will be insufficient to resolve 'the problem'. First, the numbers required are enormous, substantially greater than current migration levels. Second, competition for migrants—in particular skilled migrants—is already heating up and will soon become extreme. Those countries that have traditionally supplied Australia with its migrants are older and ageing faster than Australia, and have themselves already become net receiving countries. Third, over the shorter term, migrants also add to structural ageing in that they tend to have lower birth rates than their host populations (a phenomenon that is exacerbated by recruiting skilled migrants); and in the longer term they also grow old, adding to numerical ageing. These points notwithstanding, it can be expected that in the short to medium term, international (and sub-national) competition for migrants will be fierce (see Annan 2004 on an immigration strategy for Europe; also United Nations 2000b).

It goes without saying, then, that these changes will present enormous challenges to all countries, and especially to local governments which have minimal control over their demographic dynamics. Approaching these challenges by considering population ageing in its four dimensions therefore provides a useful basis for strategic planning.

Tasmania's Local Government Areas

Numerical Ageing: Numerical ageing refers to the absolute increase in the numbers of elderly. This indicator of ageing is best examined in terms of the annual increase in numbers for *each* local government area, and is difficult to illustrate simultaneously for Tasmania's 29 local governments as a whole, either in a single table or graphically. Accordingly readers should access the individual local government profiles at Appendix A http://www.taspop.tasbis.com). However, the relative change in numerical ageing for each local government area between 2004 and 2021 can be read from the last column in Table 6. Numbers at age 65+ increase from 36 per cent in Glenorchy to 156 per cent in Brighton (the latter has the larger increase because the numbers are coming off a smaller base – Brighton currently being Tasmania's youngest local government area).

Table 6: Tasmania: Projected Change in Size (Per Cent) by LGA, Age Group and Total 2004-2021 in Alphabetical Order

	0-14	15-24	25-39	40-54	55-64	65-74	75-84	85+	**TOTAL**	15-64	65+
Break O'Day	-17.5	-12.2	0.0	-10.6	20.6	53.2	22.1	73.6	**3.6**	-0.7	43.8
Brighton	-20.1	-12.4	0.5	3.3	63.5	185.6	122.9	61.3	**8.9**	7.1	155.6
Burnie	-29.6	-29.9	-12.7	-19.2	8.9	48.8	44.0	41.5	**-9.2**	-14.7	46.5
Central Coast	-27.5	-24.9	-10.8	-14.9	24.5	60.5	32.4	58.1	**-2.9**	-8.4	49.9
Central Highlands	-17.9	-20.9	-4.3	-13.9	17.6	51.8	63.5	42.5	**-0.2**	-5.7	54.0
Circular Head	-15.7	-8.1	2.7	-5.5	27.7	56.1	20.9	72.6	**2.0**	1.3	44.0
Clarence	-24.2	-23.1	-8.4	-15.5	15.8	53.0	38.9	85.1	**-2.6**	-9.4	51.2
Derwent Valley	-16.6	-19.4	3.8	-12.8	33.0	65.2	56.1	68.5	**3.3**	-1.6	62.4
Devonport	-24.8	-21.1	-15.0	-18.2	10.3	43.5	23.2	68.6	**-6.8**	-12.6	38.4
Dorset	-13.4	-15.2	7.5	-13.3	34.2	29.3	32.1	81.9	**3.4**	0.6	35.6
Flinders	-2.4	9.5	4.0	-15.4	-0.9	61.4	32.8	81.0	**5.9**	-3.5	52.3
George Town	-26.2	-24.0	-12.1	-17.7	22.5	70.2	50.6	73.0	**-5.0**	-10.4	64.2
Glamorgan/Spring Bay	-8.5	-3.6	6.4	-8.2	23.7	61.2	69.3	52.9	**12.3**	3.8	62.5
Glenorchy	-23.0	-18.3	-6.0	-10.0	23.7	50.1	16.1	41.8	**-1.6**	-4.9	36.2
Hobart	-21.5	-16.3	-6.2	-15.9	26.7	74.4	5.8	11.3	**-3.1**	-7.1	37.7
Huon Valley	-16.2	-18.1	0.1	-8.2	25.5	63.1	81.1	109.7	**5.0**	-1.6	72.6
Kentish	-9.9	-10.3	13.5	-4.2	37.3	81.8	66.4	79.4	**11.8**	7.2	76.7
King Island	-21.0	-13.7	-0.8	-15.3	-9.2	44.2	47.7	54.8	**-3.8**	-9.1	46.8
Kingborough	-10.5	-11.4	11.8	-6.2	45.0	113.5	56.5	82.1	**13.1**	6.3	89.9
Latrobe	-4.7	-4.0	9.9	-1.3	33.1	73.0	83.9	88.5	**16.7**	8.2	77.8
Launceston	-24.9	-20.9	-10.6	-15.6	18.6	57.8	26.4	38.5	**-4.2**	-9.9	43.5
Meander Valley	-13.2	-3.5	4.0	-4.5	34.8	90.2	61.5	92.5	**10.7**	5.1	80.6
Northern Midlands	-12.4	-11.6	-0.7	-8.3	34.3	77.1	48.2	34.7	**6.2**	0.9	63.1
Sorell	7.0	12.8	40.1	18.3	79.1	99.7	66.1	140.5	**33.6**	32.7	91.3
Southern Midlands	-13.7	-9.4	4.8	3.1	42.9	74.7	45.9	32.3	**9.7**	8.4	61.1
Tasman	-8.8	-11.5	10.8	4.6	37.8	56.5	144.9	44.9	**17.5**	10.6	72.8
Waratah/Wynyard	-24.8	-21.3	-8.0	-15.6	28.6	60.3	45.7	43.2	**-2.1**	-7.0	53.7
West Coast	-26.2	-15.4	-17.3	-12.1	11.4	55.3	102.0	-3.1	**-8.6**	-10.8	61.5
West Tamar	-19.4	-18.7	-1.9	-8.9	23.8	78.5	56.6	120.9	**5.8**	-2.2	74.1
TASMANIA	-19.7	-17.1	-3.4	-11.0	26.2	65.6	36.8	56.9	**1.4**	-3.7	54.4

Structural Ageing: Structural ageing is conventionally measured in terms of the increase in the proportion of the population aged 65+ years. However before focussing on that particular demographic, Table 6 shows the overall projected change in numbers (as a percentage of current numbers) in each age group for each of Tasmania's local government areas, for the period 2004-2021. These data mirror those for total Tasmania shown earlier in Figure 3. With only minor exceptions, the 0-14 year and 15-24 year populations of all Tasmania's local government areas are projected to decline in size. At ages 25-39 and 40-54 decline is also the overwhelming trend, while at 55 years and above the picture is reversed, with virtually all areas experiencing growth.

Consequently, around 12 (41 per cent) of Tasmania's local government areas are projected to decline in size, while four (14 per cent) may expect growth of less than 5 per cent, and 13 (45 per cent), growth greater than 5 per cent. However these overall changes pale into insignificance alongside the underlying age transition, which will have by far the greater impact on the activities of and demands on local governments.

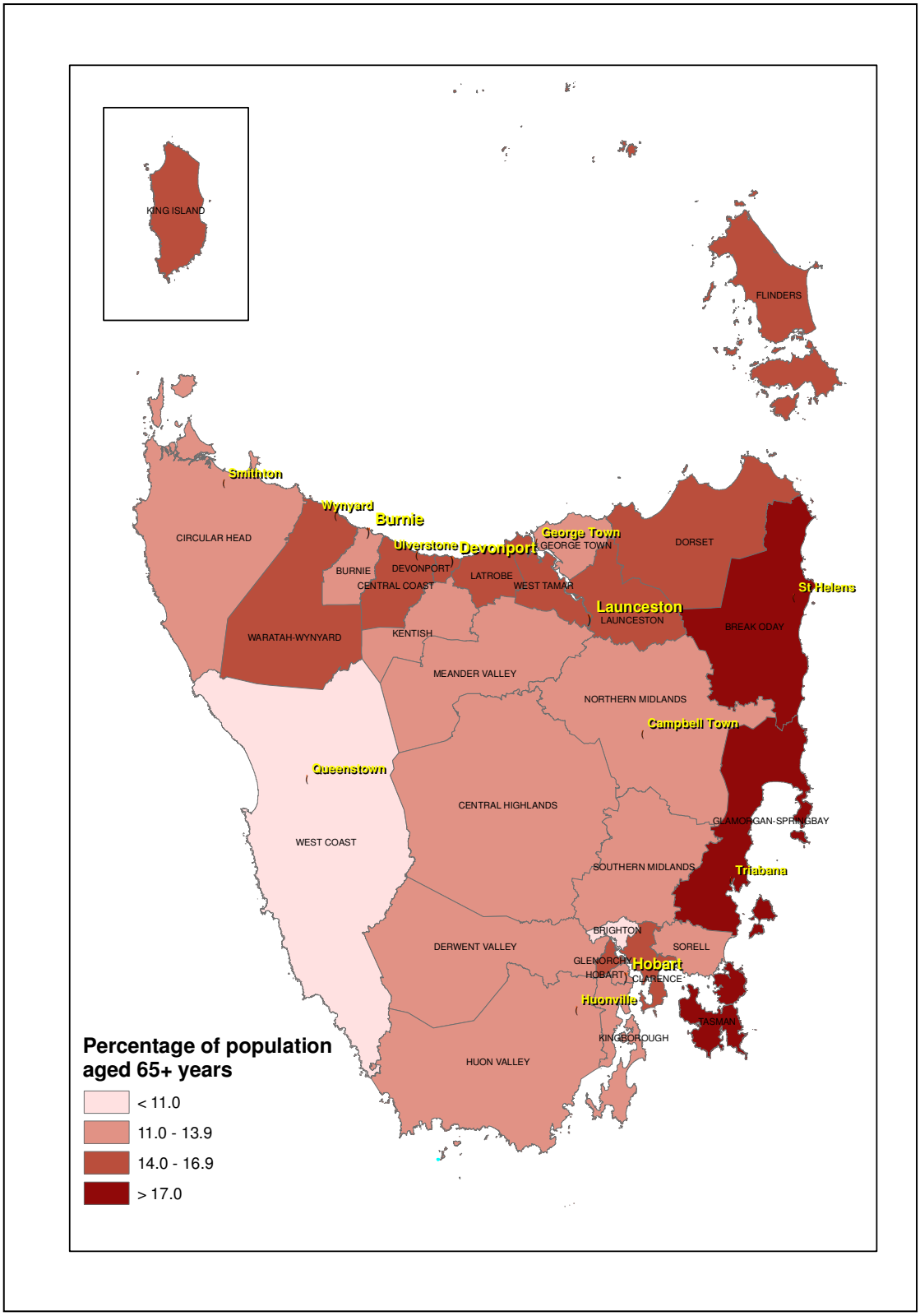
Focussing now on Tasmania's 65+ age group, Table 7 shows the current and projected proportions of each local government area at these ages, and the speed or 'force' with which each area is ageing. The latter index (which was introduced in Table 1) calculates the difference in the percentage of the population that is aged 65+ years at different points in time, for example, 2004 and 2021, and divides the result by the number of years between the two observations. The resulting index indicates the average annual percentage point increase in the percentage aged 65+ years. The higher the index, the faster the ageing. An index of 0.57 (as shown for West Tamer) means that the percentage aged 65+ years will increase at an average rate of 0.57 percentage points per year across the period (or, in other, words it will increase by a little over one percentage point every one and three-quarter years). An index of 0.27 (as shown for Circular Head) means that the proportion aged 65+ years will increase at the somewhat slower rate of 0.27 percentage points per year, or about 1 percentage point every three and a half years. These indices compare with the statistic for Total Tasmania, which will age at the average rate of 0.44 percentage points per year, or one percentage point every 2.3 years.

Table 7 also *ranks* local government areas according to their current and projected proportions over the age of 65 years and their respective speed of ageing. Glamorgan/Spring Bay, ranked at number one, is currently Tasmania's oldest local government area, and will remain so across the projection period. However it is not its fastest ageing local government area; that distinction is held by West Tamar. Importantly, this ranking or 'league table' approach should not be taken as implying that younger or slower ageing areas have fewer 'problems' than their older or faster ageing counterparts. Rather, the data provides councils with the ability to more precisely identify their needs and more efficiently manage their infrastructures and revenue gathering exercises: regions need resources and policy development that are appropriate to their age structures.

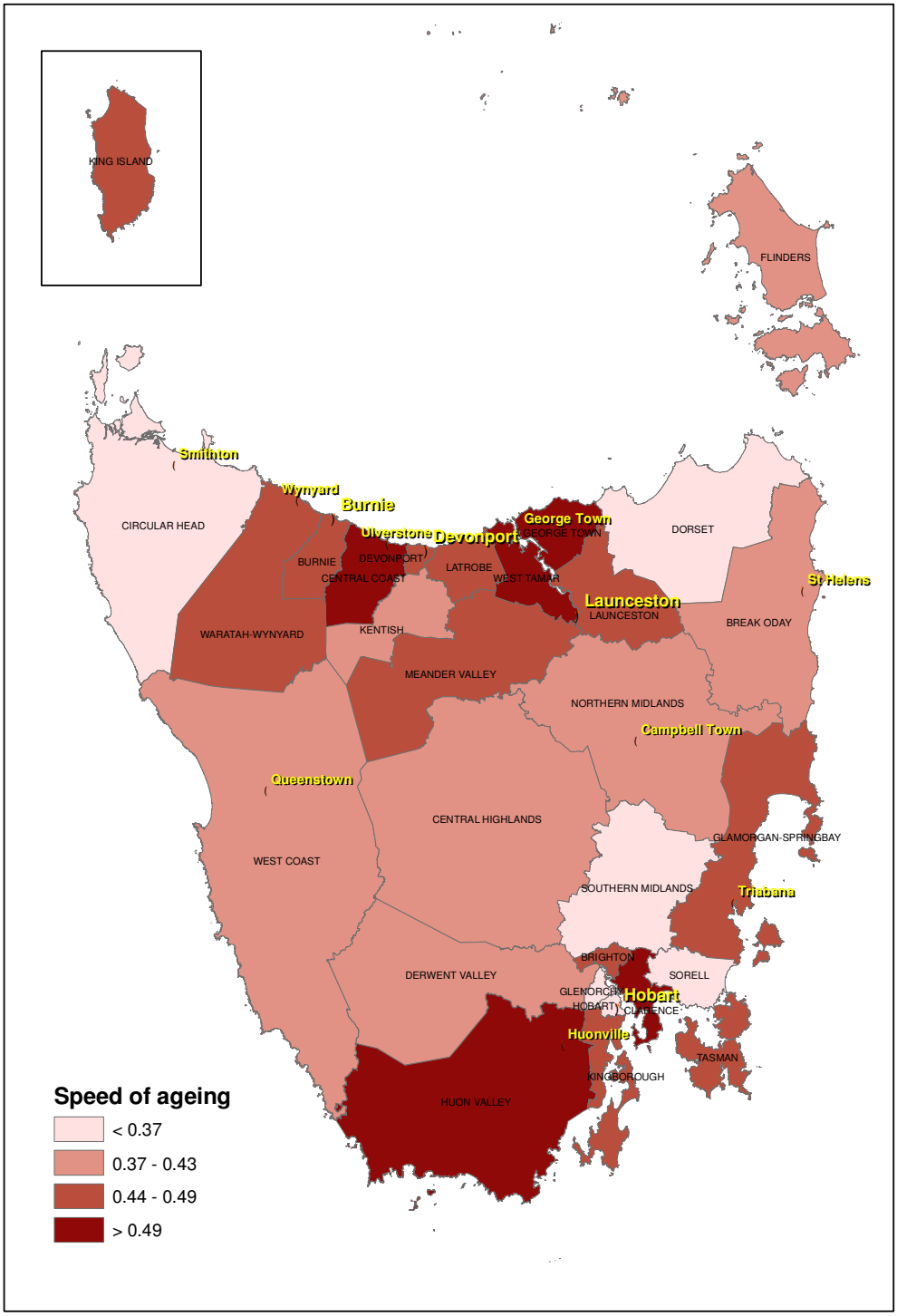
Maps 1 and 2 provide a geographical interpretation of these data.

Table 7: Tasmania's Local Government Areas: Percentage 65+ Years (2004 and 2021) and Speed of Ageing (2004-2021) in Alphabetical Order

Percentage 65+ Years			Percentage 65+ Years			Annual Percentage Point Increase		
Council	**2004**	**Rank**	**Council**	**2021**	**Rank**	**Council**	**Force**	**Rank**
Break O'Day	17.4	2	Break O'Day	24.2	7	Break O'Day	0.40	22
Brighton	6.0	29	Brighton	14.2	29	Brighton	0.48	10
Burnie	13.7	16	Burnie	22.2	13	Burnie	0.50	6
Central Coast	15.7	9	Central Coast	24.3	6	Central Coast	0.50	5
Central Highlands	13.5	17	Central Highlands	20.8	18	Central Highlands	0.43	17
Circular Head	11.3	27	Circular Head	15.9	27	Circular Head	0.27	29
Clarence	15.8	8	Clarence	24.5	4	Clarence	0.51	2
Derwent Valley	12.4	21	Derwent Valley	19.6	22	Derwent Valley	0.42	19
Devonport	16.4	5	Devonport	24.3	5	Devonport	0.47	14
Dorset	16.5	4	Dorset	21.6	16	Dorset	0.30	27
Flinders	16.4	6	Flinders	23.6	9	Flinders	0.42	18
George Town	11.8	23	George Town	20.4	20	George Town	0.51	3
Glamorgan/Spring Bay	18.5	1	Glamorgan/Spring Bay	26.8	1	Glamorgan/Spring Bay	0.49	8
Glenorchy	16.3	7	Glenorchy	22.6	11	Glenorchy	0.37	24
Hobart	13.7	15	Hobart	19.5	23	Hobart	0.34	25
Huon Valley	13.3	18	Huon Valley	21.9	15	Huon Valley	0.50	4
Kentish	11.7	24	Kentish	18.5	24	Kentish	0.40	21
King Island	14.4	13	King Island	21.9	14	King Island	0.44	16
Kingborough	12.2	22	Kingborough	20.5	19	Kingborough	0.49	7
Latrobe	15.7	10	Latrobe	23.9	8	Latrobe	0.48	9
Launceston	15.7	11	Launceston	23.5	10	Launceston	0.46	15
Meander Valley	12.8	20	Meander Valley	20.9	17	Meander Valley	0.48	12
Northern Midlands	13.1	19	Northern Midlands	20.2	21	Northern Midlands	0.41	20
Sorell	11.6	25	Sorell	16.6	26	Sorell	0.29	28
Southern Midlands	11.5	26	Southern Midlands	16.9	25	Southern Midlands	0.32	26
Tasman	17.1	3	Tasman	25.2	2	Tasman	0.47	13
Waratah/Wynyard	14.3	14	Waratah/Wynyard	22.4	12	Waratah/Wynyard	0.48	11
West Coast	8.4	28	West Coast	14.9	28	West Coast	0.38	23
West Tamar	15.0	12	West Tamar	24.7	3	West Tamar	0.57	1
TASMANIA	14.3	…	TASMANIA	21.7	…	TASMANIA	0.44	…



Map 1: Percentage of Population Aged 65+ Years in Each Tasmanian Local Government Area, 2004

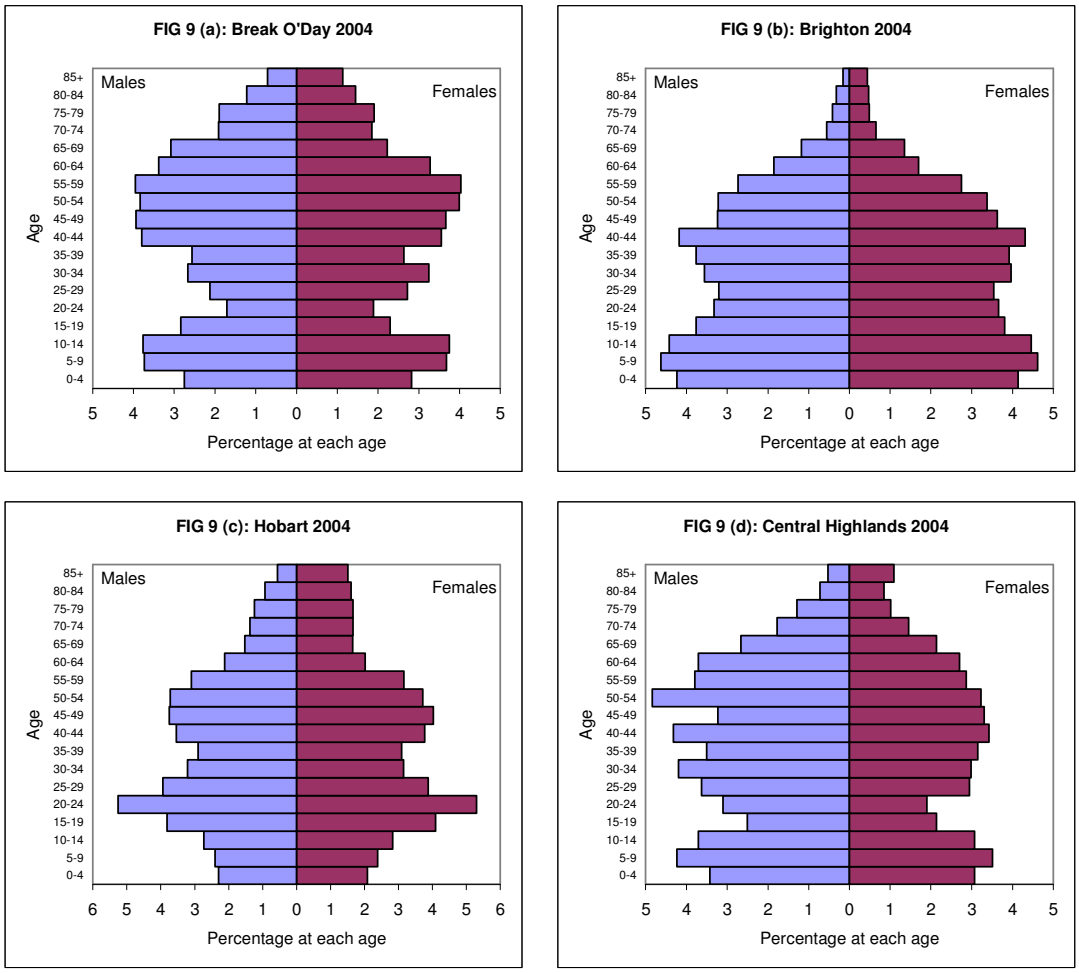


Map 2: Speed of Population Ageing Between 2004 and 2021 in Each Tasmanian Local Government Area

Notably, as Maps 1 and 2 indicate, Tasmania's local government area age structures differ markedly across the state. Most are experiencing structural ageing of the 'premature' kind outlined in the introductory paragraphs. Premature structural ageing is caused by excess migration-related loss of young working age people, and/or gains at older ages. Losses at the young adult and working ages 'hollow out' the age structure over the key reproductive ages; as a consequence the age structure also contracts at its base because these people take with them their children and/or those they would have had. This form of premature ageing is of special concern because it can quickly become self-compounding. If it is also affected by net migration gains at older ages, as is occurring in many coastal areas, the age structure can rapidly take on either an hour-glass or inverted pyramid shape.

Figure 9 illustrates a selection of current age structures to illustrate their extreme diversity. All except Hobart show evidence of premature structural ageing caused by the loss of young working age people; Hobart, by contrast, has a bulge at these ages, due largely to its university age population. However the age structure for Break O'Day (Figure 8a) is the most profoundly affected by the phenomenon of premature ageing. Central Highlands, on the other hand, shows a very masculinised age structure, undoubtedly reflecting its farming population. It should be noted this relative deficit of females also has implications for the future birth rate of the area.

Figure 9: Selected Tasmanian Local Government Age-Sex Structures, 2004



Labour Market Entry/Exit Ratios: Among the implications of population ageing are the changing ratios of people at labour market entry age to those approaching retirement (defined here as persons aged 15-24 and 55-64 years), which differ markedly across the state (Table 8). Table 8 also shows that while Glamorgan/Spring Bay is Tasmania's structurally oldest region, it does not in fact have the lowest ratio of labour market entrants to exits. That distinction is held by Break O'Day, which currently has around six people at labour market entry age for every ten approaching retirement age (a ratio of 0.6). The primary reason for the disparity between Break O'Day and Glamorgan/Spring Bay is the former's greater migration-related loss of population at the young adult ages, and gains at the older ages (Break O'Day is more profoundly affected by the phenomenon of 'premature ageing' – see individual local government profiles at Appendix A). By 2010 the labour market entry/exit ratio for Break O'Day is projected to have declined to 0.5, or five entrants for every ten exits, and by 2021, to 0.4 (four entrants per ten exits). By contrast, the relatively youthful Hobart currently has a ratio of 1.8, or 18 entrants for every ten exits, and by 2021 is projected to still projected to have a ratio of around 1.2 (12 entrants per ten exits).

As outlined earlier, the falling labour market entry/exit ratio has several significant implications for the future labour markets of local government areas, among which are likely to be competition between industries/occupations for workers, declining unemployment and increasing wage rates. Table 9 gives a tantalising indication of this potential relationship. As the entry/exit ratio for each local government area has declined, so too with few exceptions has its unemployment rate. The 'Pearsons correlation coefficient' (denoted by 'r') is a measure of the extent to which a linear relationship exists between two datasets, an index of 1.0 indicating complete linearity. The data generate an overall 'r' of 0.93, while at local government level, 19 (66 per cent) have an 'r' of 80 or above. These data indicate a very strong positive relationship between declining entry/exit ratios and unemployment across the 1991-2001 period (for Total Australia the correlation is also extremely strong at 0.99). However it must also be acknowledged that many other factors influence labour market trends, and that no attempt is made here to claim a definitive picture: all that is being said is that the correlation is strong enough for it to imply a potential demographic influence on unemployment.

A further (as-yet scarcely acknowledged) implication is related to geographical proximity: structurally older regions that are adjacent to each other will experience increasing difficulties in recruiting young workers (refer back to Maps 1 and 2). For example, bordering the similarly 'old' Glamorgan/Spring Bay at its southern limits, Break O'Day is fortunate in having the relatively youthful Launceston and Dorset as its north western neighbours (with current entry/exit ratios of 1.5 and 1.1). This is not the case for the inter-neighbouring areas of West Tamar and Latrobe, which both already have negative entry/exit ratios (at 0.9 each) and which are projected to decline in tandem to around 0.8 by 2010 and 0.6 by 2021. The two latter areas will to some extent be assisted in the short term by the slightly more youthful (and neighbouring) areas of Devonport, Kentish and Central Coast (each currently at one entrant per exit), but by 2010 each of these areas will also be experiencing negative ratios. Notably the entry/exit ratios of several industries and occupations within each local government area are also already negative (see Appendix B). The trends indicate both a significant tightening of local labour markets, and a need to conceptualise where future labour will come from.

Table 8: Tasmania Local Government Areas: Labour Market Entry/Exit Ratio in Alphabetical Order (2004, 2010 and 2021)

Council	2004	Rank	Council	2010	Rank	Council	2021	Rank
Break O'Day	0.6	1	Break O'Day	0.5	1	Break O'Day	0.4	1
Brighton	1.6	28	Brighton	1.2	26	Brighton	0.9	25
Burnie	1.2	23	Burnie	1.0	23	Burnie	0.8	23
Central Coast	1.0	11	Central Coast	0.8	9	Central Coast	0.6	6
Central Highlands	0.7	5	Central Highlands	0.6	2	Central Highlands	0.5	2
Circular Head	1.5	27	Circular Head	1.4	29	Circular Head	1.1	28
Clarence	1.1	17	Clarence	0.9	17	Clarence	0.7	16
Derwent Valley	1.2	22	Derwent Valley	1.0	20	Derwent Valley	0.7	21
Devonport	1.0	14	Devonport	0.9	16	Devonport	0.7	20
Dorset	1.1	19	Dorset	1.0	22	Dorset	0.7	17
Flinders	0.6	2	Flinders	0.7	4	Flinders	0.7	15
George Town	1.1	18	George Town	0.9	13	George Town	0.7	14
Glamorgan/Spring Bay	0.7	3	Glamorgan/Spring Bay	0.6	3	Glamorgan/Spring Bay	0.5	4
Glenorchy	1.3	24	Glenorchy	1.0	24	Glenorchy	0.8	24
Hobart	1.8	29	Hobart	1.4	28	Hobart	1.2	29
Huon Valley	1.1	16	Huon Valley	0.9	15	Huon Valley	0.7	12
Kentish	1.0	15	Kentish	0.8	11	Kentish	0.7	11
King Island	0.7	4	King Island	0.8	8	King Island	0.7	9
Kingborough	1.2	21	Kingborough	0.9	18	Kingborough	0.7	18
Latrobe	0.9	8	Latrobe	0.8	6	Latrobe	0.6	8
Launceston	1.5	26	Launceston	1.2	25	Launceston	1.0	27
Meander Valley	1.0	10	Meander Valley	0.9	14	Meander Valley	0.7	19
Northern Midlands	1.0	12	Northern Midlands	0.8	10	Northern Midlands	0.7	10
Sorell	1.4	25	Sorell	1.2	27	Sorell	0.9	26
Southern Midlands	1.0	9	Southern Midlands	0.9	12	Southern Midlands	0.6	7
Tasman	0.8	6	Tasman	0.7	5	Tasman	0.5	3
Waratah/Wynyard	1.2	20	Waratah/Wynyard	0.9	19	Waratah/Wynyard	0.7	13
West Coast	1.0	13	West Coast	1.0	21	West Coast	0.8	22
West Tamar	0.9	7	West Tamar	0.8	7	West Tamar	0.6	5
TASMANIA	1.2	…	TASMANIA	1.0	…	TASMANIA	0.8	…
Notes:	These entry/exit ratios pertain to the populations aged 15-24 and 55-64 years							

Table 9: Tasmania: Entry/Exit Ratios, Unemployment Rates, and Pearsons 'r' Correlation Coefficient 1991, 1996 and 2001

	Entry/Exit Ratio			Unemployment Rate			
	1991	1996	2001	1991	1996	2001	r
Break O Day	1.0	0.8	0.5	21.4	20.3	16.0	0.95
Brighton	4.2	2.9	2.0	29.2	18.9	16.3	0.98
Burnie	2.1	1.7	1.3	17.2	12.9	13.3	0.84
Central Coast	1.5	1.4	1.1	15.9	13.2	12.0	0.88
Central Highlands	1.3	1.0	0.7	13.6	11.1	11.6	0.71
Circular Head	2.1	1.9	1.4	11.8	8.3	7.9	0.81
Clarence	1.7	1.6	1.3	11.0	8.6	8.6	0.78
Derwent Valley	1.7	1.4	1.2	17.3	12.2	14.0	0.67
Devonport	1.8	1.5	1.2	17.3	13.8	12.6	0.94
Dorset	1.1	1.1	1.1	10.3	7.0	6.6	0.97
Flinders	1.0	1.0	0.5	11.4	7.5	4.7	0.79
George Town	1.9	1.7	1.3	13.7	16.8	12.9	0.29
Glamorgan/Spring Bay	1.1	0.8	0.6	16.2	11.9	11.0	0.97
Glenorchy	1.7	1.6	1.4	12.4	11.0	11.4	0.55
Hobart	2.3	2.5	2.0	10.9	8.9	7.6	0.57
Huon Valley	1.5	1.2	1.1	16.6	12.8	10.9	1.00
Kentish	1.6	1.3	1.0	19.8	16.6	16.0	0.94
King Island	1.3	1.1	0.8	8.9	7.0	6.6	0.93
Kingborough	1.8	1.7	1.4	6.6	3.8	4.3	0.56
La Trobe	1.3	1.3	1.1	14.5	12.0	10.3	0.80
Launceston	2.2	2.1	1.7	13.3	11.8	10.9	0.90
Meander Valley	1.8	1.6	1.2	12.5	10.0	7.9	0.96
Northern Midlands	1.5	1.2	1.0	11.7	9.6	8.5	1.00
Sorell	1.4	1.4	1.3	12.6	11.8	9.9	0.98
Southern Midlands	1.3	1.0	0.9	12.7	10.9	10.5	0.99
Tasman	0.7	0.7	0.6	18.8	13.4	12.0	0.53
Waratah-Wynyard	1.7	1.3	1.1	15.5	12.4	12.1	0.94
West Coast	2.2	1.6	1.1	12.7	10.0	11.7	0.45
West Tamar	1.6	1.3	1.2	11.5	9.8	8.0	0.97
TASMANIA	1.8	1.6	1.3	8.0	6.3	5.7	0.93

Source: *ABS (2003e)Time Series Profiles*

Notes: *r = Pearsons Correlation Coefficient (ranges from -1.0 to 1.0 inclusive and reflects the extent of a linear relationship between two data sets.*

Elderly/Child Ratio: As might be expected, Tasmania's structurally oldest area, Glamorgan/Spring Bay, also has the highest ratio of elderly to children (Table 10). Currently Glamorgan/Spring Bay has fractionally greater than one person aged 65+ to each child aged 0-14; by 2010 this ratio is projected to be 1.2 (or 12 elderly for every ten children) and by 2021, 1.7 (or 17 elderly for every ten children). By contrast, Tasmania's structurally youngest area, Brighton, currently has an elderly to child ratio of 0.2, or two elderly for every ten children, while by 2010 this is projected to have increased to 0.4 (four elderly per ten children) and by 2021, to 0.7 (seven elderly per ten children).

Table 11 summarises these changes in terms of the number and percentage of Tasmania's local government areas that will experience structural crossovers (to fewer labour market entrants than exits, and more elderly than children) by 2010 and 2021. Already eight Tasmanian local government areas (28 per cent) have fewer labour market entrants than exits, while one has more elderly than children. By 2010 these numbers will increase to around 19 and 10 local government areas respectively, and by 2021, to 26 and 25. These data indicate that the shift to negative labour market entry exit ratios will typically occur around one decade ahead of the shift to negative elderly to child ratios.

Table 10: Tasmania's Local Government Areas: Elderly/Child Ratio in Alphabetical Order (2004, 2010 and 2021)

Council	2004	Rank	Council	2010	Rank	Council	2021	Rank
Break O'Day	0.8	6	Break O'Day	1.0	9	Break O'Day	1.5	10
Brighton	0.2	29	Brighton	0.4	29	Brighton	0.7	28
Burnie	0.7	14	Burnie	0.9	12	Burnie	1.4	11
Central Coast	0.8	9	Central Coast	1.1	6	Central Coast	1.7	3
Central Highlands	0.6	16	Central Highlands	0.8	17	Central Highlands	1.2	16
Circular Head	0.5	27	Circular Head	0.6	27	Circular Head	0.8	27
Clarence	0.8	7	Clarence	1.1	3	Clarence	1.7	4
Derwent Valley	0.6	20	Derwent Valley	0.8	20	Derwent Valley	1.2	20
Devonport	0.8	10	Devonport	1.0	11	Devonport	1.4	12
Dorset	0.8	11	Dorset	0.9	13	Dorset	1.2	18
Flinders	0.7	13	Flinders	0.9	14	Flinders	1.1	23
George Town	0.5	24	George Town	0.7	24	George Town	1.2	17
Glamorgan/Spring Bay	1.0	1	Glamorgan/Spring Bay	1.2	1	Glamorgan/Spring Bay	1.7	1
Glenorchy	0.9	4	Glenorchy	1.1	7	Glenorchy	1.6	8
Hobart	0.9	2	Hobart	1.1	4	Hobart	1.6	6
Huon Valley	0.6	19	Huon Valley	0.8	18	Huon Valley	1.2	15
Kentish	0.6	23	Kentish	0.7	23	Kentish	1.1	24
King Island	0.6	17	King Island	0.8	16	King Island	1.2	21
Kingborough	0.6	21	Kingborough	0.8	19	Kingborough	1.3	14
Latrobe	0.8	8	Latrobe	1.0	8	Latrobe	1.5	9
Launceston	0.9	5	Launceston	1.1	5	Launceston	1.6	5
Meander Valley	0.6	22	Meander Valley	0.7	21	Meander Valley	1.2	19
Northern Midlands	0.6	18	Northern Midlands	0.7	22	Northern Midlands	1.1	22
Sorell	0.5	26	Sorell	0.6	26	Sorell	0.9	26
Southern Midlands	0.5	25	Southern Midlands	0.7	25	Southern Midlands	1.0	25
Tasman	0.9	3	Tasman	1.1	2	Tasman	1.7	2
Waratah/Wynyard	0.7	15	Waratah/Wynyard	0.9	15	Waratah/Wynyard	1.4	13
West Coast	0.3	28	West Coast	0.4	28	West Coast	0.7	29
West Tamar	0.7	12	West Tamar	1.0	10	West Tamar	1.6	7
TASMANIA	0.7	…	TASMANIA	0.9	…	TASMANIA	1.4	…

Table 11: Structural Crossovers: projected number and percentage of Tasmanian LGAs with more fewer labour market entrants than exits, and elderly than children, 2004, 2010 and 2021

	2004	2010	2021	2004	2010	2021	Change
	Number			Percentage			%
Entry/Exit	8	19	26	28	66	90	325
Elderly/Child	1	10	25	3	34	86	2500

Natural decline: Among the many implications of population ageing are that once the labour market entry/exit and elderly/child ratios cross over (to there being fewer labour market entrants than exits and more elderly than children), it is a short step to there being more deaths than births, and to the onset of natural decline. Those regions with high elderly/child ratios (as shown in Table 10) can therefore also expect to enter natural decline somewhat ahead of the rest of Tasmania. While only one Tasmanian local government area had more elderly than children in 2004, five were already experiencing more deaths than births (Latrobe, Break O'Day, Waratah/Wynyard, King Island and Flinders) while a further seven had death to birth ratios above 0.8 (eight deaths for every ten births) (ABS 2003f).

Absolute decline: Insufficient migrants to offset natural decline also foreshadows absolute decline. These outcomes were indicated earlier in Table 6. Notably, however, of Tasmania's 12 local government areas projected to experience absolute decline, only one shows decline in any older age group (85+ years for West Coast). This age transition heralds the need for a major shift in local government thinking about what constitutes population 'growth' in the context of population ageing, and how to prepare for it.

Reconceptualising 'growth': According to a comprehensive conceptualising exercise undertaken for the local government councils and shires of New South Wales (Baum and Jackson 2004: 49-50), the local government implications of growth at the older end of the age spectrum *vis-à-vis* decline at the younger ages are broad-ranging. Among them are:

Implications for revenue raising functions:

- possible reductions to local government financial assistance from Commonwealth and State
- inappropriate rates of FAGS due to Local Government Grants Commission funding formula
- possible inadequate or no growth to local government specific purpose funding
- reductions to rate revenue due to increases in pensioner rate rebates, pensioner rate and charges supplements or rate deferrals
- reductions to user charges revenue due to asset rich cash poor long term retirees

Implications for service (or non-regulatory) functions relating to infrastructure, facilities and services:

- more and possibly qualitatively different community care services; integrated service planning and co-ordination of community care services; and more and possibly qualitatively different seniors centres and other seniors services
- health promotion programs and activities to prevent non-communicable diseases
- different public library facilities, collections, technologies and programs

- different cultural facilities, services, technologies, programs and activities
- modifications to sporting, recreational and entertainment facilities
- heightened environment conservation, protection and improvement
- modifications to household waste collection, to cope with mobility and frailty issues
- modifications to transport facilities and services, and pedestrian facilities
- modifications to road design and road safety programs
- ageing sensitive policies and practices in water management
- more and possibly qualitatively different residential aged care facilities and self care units
- assessment of industry development and assistance strategies and services for impact of competing pressures
- increased opportunities for attracting older tourists; ageing-friendly tourist facilities and services

Implications for community care services and/or other seniors services, and facilities

- Ageing and disability developmental staff
- Seniors Centres
- Home and Community Care Centres
- Community transport
- Food and Meals on Wheels Services
- Respite Care
- Community Options services
- Home Maintenance and Modification
- Community Aged Care Packages
- Seniors Week
- Facilitating development of new facilities, services or activities ageing people

However for each of the pressures likely to be generated by population ageing, the potential 'good news' in the form of declining youth unemployment—and unemployment in general—should be kept uppermost in mind. Even a cursory glance at the foregoing list indicates that few of the associated jobs will be able to be 'shipped offshore' as occurred with manufacturing during the economic restructuring of the 1980s. Local governments should look to lists such as these to conceptualise the future employment imperatives—and opportunities—they contain.

More fully employed populations imply better paid and more participatory populations, but this situation will not eventuate on its own, especially once the possible declines in revenue raising functions are factored in. Population ageing will be played out at the level of local government, and it will be critical for local governments to be funded ahead of demand. As outlined earlier, growth in the numbers of elderly is 100 per cent guaranteed; not necessarily their precise numbers as indicated in this report, but their strong upward trend. These people are already in the age structure, their future presence highly predictable. Local governments should urgently lobby to have population ageing related cost adjustments based on future age profiles rather than those of the previous year, and should seek to have the related disabilities compared at national rather than state level (Jackson forthcoming). The current 'own-state' method of comparison will not serve local governments well.

Summary and conclusion

This report has outlined the findings from a comprehensive analysis of population ageing across Tasmania's 29 local government areas. The analysis considered the impact of population ageing on each area in terms of its four main dimensions—numerical and structural ageing, natural and absolute decline (the detailed local government demographic profiles underlying the report may be viewed at http://www.taspop.tasbis.com.). With few exceptions, all child, youth, and young to middle-adult populations are projected to decline in size between 2004 and 2021, while at 55 years and above the picture is reversed, with all LGAs experiencing significant growth.

This 'age transition' has its sequel in declining ratios of labour market entrants to exits, which will become negative at state level by 2012 but are already negative in eight LGAs. Structurally older regions that are adjacent to each other will experience increasing difficulties in recruiting young workers; the 'problems' are further differentiated by industrial and occupational differences at LGA level. However data were also presented that give a tantalising indication of a relationship between falling labour market entry/exit ratios and falling unemployment. The Pearson's Correlation Coefficient applied to these data generated an overall index for Tasmania's local government areas of 0.82 (1.0 indicating perfect linearity).

A second structural crossover occurs in the ratio of elderly to children (defined as 65+ and 0-14 years), which sees Tasmania with more elderly than children by 2012, a situation already extant in one LGA. This crossover foreshadows a shift to natural decline (where deaths exceed births), already extant in five LGAs.

Insufficient migrants to offset natural decline will result in absolute decline. The overall outcome of these trends indicates that between 2004 and 2021, 12 (41 per cent) of Tasmania's LGAs are likely to decline in size, while four (14 per cent) may expect growth of less than 5 per cent, and the remaining 13 (45 per cent), growth greater than 5 per cent.

The changes herald the need for a major shift in local government thinking about what constitutes population 'growth' in the context of population ageing—especially 'premature' population ageing, and how to prepare for it. However the changes are not all negative; as indicated they contain within them much promise for a bright future. On the one hand pressures will increase on a wide variety of local government functions, affecting everything from the delivery of services to revenue gathering. On the other hand, likely declines in unemployment as smaller youth and working age cohorts endeavour to deliver these services to significantly larger numbers of elderly should see local populations better employed and better paid. But this situation will not occur unassisted. Local government councils need to look to where their future labour markets will come from, and, at least to some extent, be guided by the sorts of employment that the emerging 'ageing industry' will generate.

Population ageing will be played out at the level of local government, and it will also be critical for local governments to be funded ahead of demand. As argued throughout this report, growth in the numbers of elderly is 100 per cent guaranteed; not necessarily their precise numbers as indicated herein, but their strong upward trend. The future elderly are already in the age structure, their future presence highly

predictable. Local governments should urgently lobby to have population ageing related cost adjustments based on future age profiles rather than those of the previous year, and should seek to have the related disabilities compared at national rather than state level (Jackson forthcoming). The current 'own-state' method of comparison will not serve local governments well.

Glossary:

Elderly/Child Ratio: This ratio compares the number of elderly (aged 65+ years) to the number of children (aged 0-14 years). A ratio of 0.2 (as shown for Brighton in 2004) means that there are two elderly for every ten children, while one of 1.0 (as shown for Glamorgan/Spring Bay in 2004) means that there is one elderly person for every child. The higher the index, therefore, the 'older' the population. There have never been more elderly than children in western (and probably any other) populations, so the projected cross over is unprecedented, and will bring with it many implications for local government councils.

Entry/Exit Ratio: This ratio compares the number of people at labour market entry age (typically taken to be 15-24 years) to the number approaching conventional retirement age (55-64 years). A ratio of 0.6 (as shown for Break O'Day in 2004) means that there are six people at entry age for every ten at exit age, while one of 1.8 (as shown for Hobart in 2004) means that there are 18 entrants for every ten exits. The higher the entry/exit ratio, the 'younger' the population. There have never been more people at labour market exit than entry age in western (and probably any other) populations, so the projected cross over is unprecedented, and will bring with it many implications for local government councils.

NB. For various reasons, different databases have had to be used for the construction of the entry/exit ratios in the different tables and graphs. In some cases the ratio pertains to the *total populations* aged 15-24 and 55-64 years, and in some, to the *employed* populations 15-24 and 55+ years. Tables 2 and 8, and Figures 5 use the former, and Tables 3, 4, and 9, and Appendix B, the latter. The quantum disparities are minor; the trends are the same.

Speed (or 'Force') of ageing: This index calculates the difference in the percentage of the population that is aged 65+ years at different points in time, for example, 2004 and 2021, and divides the result by the number of years between the two observations. This process gives the average annual percentage point increase in the percentage aged 65+ years. The higher the index, the 'faster' the ageing. For example, an index of 0.57 (as shown for West Tamer in 2004) means that the percentage aged 65+ years will increase at an average rate of 0.57 percentage points per year across the period (or in other words, it will increase by a little over one percentage point every one and three-quarter years). An index of 0.27 (as shown for Circular Head in 2004) means that the proportion aged 65+ years will increase at the somewhat slower rate of 0.27 percentage points per year, or about 1 percentage point every three and a half years.

Appendix A (see http://www.taspop.tasbis.com)

Break O'Day
Brighton
Burnie
Central Coast
Central Highlands
Circular Head
Clarence
Derwent Valley
Devonport
Dorset
Flinders
George Town
Glamorgan/Spring Bay
Glenorchy
Hobart
Huon Valley
Kentish
King Island
Kingborough
Latrobe
Launceston
Meander Valley
Northern Midlands
Sorell
Southern Midlands
Tasman
Waratah/Wynyard
West Coast
West Tamar
TASMANIA

Appendix B1: Entry/Exit Ratios By LGA and Industrial Group, 2001 (continued over)

	Agric, Forestry and Fishing	Mining	Manufact.	Electricity, Gas and Water Supply	Construct.	Wholesale Trade	Retail Trade	Accommod, Cafes and Restaurants	Transport and Storage	Communic. Services
Break O Day	0.4	1.0	0.3	…	0.0	0.4	1.6	1.2	0.0	0.0
Brighton	1.2	…	2.0	1.0	1.6	2.6	9.9	4.0	0.6	…
Burnie	0.4	1.4	2.0	0.0	0.9	2.1	4.4	2.9	0.4	3.8
Central Coast	0.5	…	1.5	0.0	1.1	1.2	3.7	2.8	0.8	1.1
Central Highlands	0.3	…	2.3	0.0	0.6	0.0	0.9	0.8	0.8	…
Circular Head	0.8	0.0	1.4	…	0.8	2.0	3.6	1.2	0.1	…
Clarence	0.8	1.0	1.2	0.4	1.1	1.0	3.7	3.4	0.4	1.3
Derwent Valley	1.3	…	2.7	0.3	0.8	3.5	5.0	1.5	0.4	0.0
Devonport	0.6	0.0	1.4	0.4	1.1	2.0	3.4	3.1	0.7	0.3
Dorset	0.7	…	1.9	…	0.9	1.3	2.3	0.9	0.8	…
Flinders	0.1	…	…	…	0.0	1.0	0.3	2.0	…	…
George Town	0.5	…	1.6	…	1.3	2.6	3.8	1.3	1.2	2.0
Glamorgan/Spring Ba	0.5	…	1.3	…	0.3	1.1	1.0	0.3	0.2	…
Glenorchy	1.8	0.0	1.8	0.7	1.3	1.1	4.9	2.9	0.6	2.5
Hobart	0.8	0.0	0.9	1.2	1.2	1.0	4.3	7.3	0.9	3.9
Huon Valley	0.6	0.0	1.4	0.0	1.6	1.7	2.8	0.9	0.1	0.4
Kentish	0.2	0.0	1.3	0.0	0.5	1.9	2.5	1.7	0.3	…
King Island	0.4	…	1.4	…	1.0	3.3	0.8	0.4	0.0	…
Kingborough	0.7	0.5	1.4	0.6	1.5	0.9	4.5	3.8	0.5	3.2
La Trobe	0.4	…	2.1	…	2.6	1.8	3.9	2.0	0.6	…
Launceston	0.8	0.4	1.5	1.2	1.3	1.8	4.8	4.5	1.1	1.1
Meander Valley	0.5	1.0	1.4	0.0	1.4	1.1	4.4	3.5	0.8	0.8
Northern Midlands	0.5	…	1.8	…	1.1	2.3	2.3	2.1	0.5	1.4
Sorell	0.7	…	1.6	…	2.0	2.0	4.4	2.8	0.4	2.0
Southern Midlands	0.2	…	2.5	0.0	2.2	1.3	1.9	1.7	0.0	0.0
Tasman	0.3	…	0.7	0.0	0.8	1.0	1.7	0.8	0.0	…
Waratah-Wynyard	0.5	0.4	1.5	…	1.6	1.2	3.9	2.1	0.3	2.0
West Coast	1.3	1.4	0.8	2.3	1.6	0.6	2.3	1.6	0.8	…
West Tamar	0.4	1.3	1.3	3.0	0.9	1.1	3.6	2.4	0.5	0.8
Tasmania	0.5	0.9	1.5	0.8	1.2	1.4	4.0	3.1	0.6	1.4

Source: *Compiled from ABS (2003) Basic Community Profiles, Table 26B*

Notes: *The total entry/exit ratio for some LGAs may differ to that shown in Figure 8 because the data in Appendix B1 pertains to the employed population only*

Appendix B1 continued: Entry/Exit Ratios By LGA and Industrial Group, 2001

	Finance and Insurance	Property and Business Services	Govt. Admin. and Defence	Education	Health and Commun. Services	Cultural and Rec. Services	Personal and Other Services	Total
Break O Day	…	1.1	0.3	0.7	0.5	1.0	0.5	0.6
Brighton	2.0	1.2	0.8	0.4	0.7	2.7	1.5	2.1
Burnie	2.3	1.3	0.7	0.5	0.8	6.3	2.8	1.6
Central Coast	3.0	1.6	0.5	0.3	0.7	2.0	1.8	1.3
Central Highlands	…	0.0	0.8	0.0	0.9	1.0	0.0	0.4
Circular Head	1.0	2.4	0.3	1.0	0.7	…	3.0	1.2
Clarence	1.7	1.0	0.6	0.3	0.5	1.7	1.4	1.3
Derwent Valley	1.0	0.8	0.6	0.2	0.5	0.9	1.9	1.3
Devonport	1.2	1.2	0.4	0.5	0.6	1.5	1.3	1.3
Dorset	…	1.2	0.9	0.6	0.7	0.4	5.3	1.1
Flinders	…	…	1.2	0.0	0.3	…	…	0.5
George Town	…	0.8	0.7	0.2	0.6	…	1.8	1.4
Glamorgan/Spring Ba	…	0.1	0.2	0.0	0.3	0.9	0.4	0.5
Glenorchy	4.4	1.3	1.0	0.4	0.7	3.0	1.3	1.7
Hobart	1.8	1.1	0.8	0.6	0.8	1.7	1.5	1.6
Huon Valley	1.0	1.2	0.7	0.2	0.3	0.2	1.5	0.9
Kentish	…	1.4	0.0	0.0	0.3	1.1	…	0.8
King Island	…	0.5	0.0	2.0	0.0	0.0	…	0.7
Kingborough	1.6	0.8	0.4	0.3	0.6	1.5	1.2	1.3
La Trobe	1.2	1.8	1.0	0.4	0.4	1.3	1.6	1.2
Launceston	2.6	1.3	0.5	0.6	0.7	2.2	1.8	1.7
Meander Valley	3.1	2.2	0.5	0.7	0.6	1.7	2.7	1.3
Northern Midlands	1.7	0.8	0.5	0.3	0.7	1.0	1.5	1.0
Sorell	…	0.8	0.8	0.4	0.8	0.4	1.8	1.5
Southern Midlands	…	0.7	0.5	0.0	0.4	1.0	…	0.7
Tasman	…	1.0	0.5	0.3	0.6	0.3	0.0	0.5
Waratah-Wynyard	0.8	1.1	0.3	0.4	0.5	2.3	5.0	1.1
West Coast	…	0.9	0.6	1.1	0.5	5.0	…	1.5
West Tamar	1.0	0.7	0.5	0.5	0.4	4.1	2.1	1.2
Tasmania	2.0	1.1	0.6	0.4	0.6	1.7	1.6	1.4

Source: *Compiled from ABS (2003) Basic Community Profiles, Table 26B*

Notes: *The total entry/exit ratio for some LGAs may differ to that shown in Figure 8 because the data in Appendix B1 pertains to the employed population only*

Appendix B2: Entry/Exit Ratios By LGA and Occupational Group, 2001

	Managers and Administ.	Professionals	Associate Prof.	Trades and Related Workers	Advanced Clerical and Service Workers	Intermed. Clerical, Sales and Service Workers	Intermed. Production and Transport Workers	Elementary Clerical, Sales and Service Workers	Labourers and Related Workers	TOTAL
Break O Day	0.1	0.3	0.3	1.1	0.0	1.2	0.8	2.7	1.1	0.6
Brighton	0.3	0.5	1.3	2.8	0.7	2.6	1.2	7.5	2.5	2.2
Burnie	0.2	0.7	0.8	2.5	1.3	2.2	1.0	7.0	1.8	1.6
Central Coast	0.2	0.4	0.9	2.6	1.0	2.0	1.1	4.1	1.4	1.3
Central Highlands	0.0	0.8	0.3	1.3	0.0	1.3	0.9	2.0	0.9	0.5
Circular Head	0.3	1.1	0.7	2.2	1.6	1.7	0.9	3.1	2.6	1.2
Clarence	0.2	0.4	0.8	2.0	0.5	1.7	1.1	4.8	1.9	1.3
Derwent Valley	0.2	0.4	0.6	2.0	0.3	1.3	1.2	5.3	1.4	1.3
Devonport	0.2	0.5	0.7	1.9	0.8	1.8	1.3	5.8	1.6	1.4
Dorset	0.1	0.6	0.3	1.6	0.5	1.5	1.7	3.9	2.8	1.0
Flinders	0.1	0.2	…	0.6	…	0.9	0.0	1.0	0.5	0.3
George Town	0.1	0.2	0.5	3.2	1.0	2.6	0.9	3.3	2.8	1.3
Glamorgan/Spring Bay	0.1	0.3	0.2	0.8	0.0	0.8	0.8	1.2	1.0	0.5
Glenorchy	0.4	0.5	1.3	2.2	0.7	1.9	0.9	5.1	1.9	1.7
Hobart	0.2	0.7	1.0	2.2	0.6	3.2	1.9	7.6	3.3	1.6
Huon Valley	0.1	0.2	0.5	1.9	0.5	1.5	0.7	4.2	1.5	0.9
Kentish	0.0	0.3	0.5	1.8	…	1.9	0.7	4.5	1.3	0.8
King Island	0.2	0.5	0.6	1.4	0.0	0.5	0.6	0.0	1.9	0.6
Kingborough	0.2	0.3	0.7	2.2	0.6	1.9	1.2	5.0	3.4	1.3
La Trobe	0.1	0.3	0.6	3.6	0.0	3.7	1.3	5.3	2.2	1.2
Launceston	0.3	0.7	1.1	2.4	0.8	2.3	1.3	6.6	2.0	1.7
Meander Valley	0.2	0.6	0.8	2.3	1.5	2.2	1.4	5.1	2.3	1.3
Northern Midlands	0.1	0.4	0.6	1.4	0.6	2.2	0.8	3.4	2.2	1.0
Sorell	0.3	0.2	0.5	2.1	0.9	1.7	1.0	6.2	2.4	1.4
Southern Midlands	0.0	0.2	0.5	2.1	0.4	2.3	0.7	2.3	3.6	0.8
Tasman	0.1	0.0	0.2	0.8	…	0.7	0.0	5.3	2.3	0.5
Waratah-Wynyard	0.1	0.4	0.6	2.5	0.9	1.2	0.9	4.4	1.6	1.1
West Coast	0.2	2.9	0.7	1.3	0.7	1.8	0.9	3.2	2.4	1.3
West Tamar	0.1	0.4	0.7	2.1	0.8	1.5	1.0	4.8	1.5	1.2
Tasmania	0.2	0.5	0.8	2.1	0.7	2.1	1.1	5.3	2.0	1.4

Source: *Compiled from ABS (2003) Basic Community Profiles, Table 27B*

Notes: *The total entry/exit ratio for some LGAs may differ to that shown in Figure 8 because the data in Appendix B2 pertains to the employed population only*

References

Annan, K. (2004) Kofi Annan on an immigration strategy for Europe, *Population and Development Review*, 30(1).188-189.

Australian Bureau of Statistics (2000) *Australia Population Projections by SLA* (ASGC1996) 1999-2019. Commonwealth Department of Health and Aged Care, Catalogue 3222.0 (Datacubes)

Australian Bureau of Statistics (2001) *Australia Population Projections by SLA* (ASGC2000) 1999-2021. Commonwealth Department of Health and Aged Care, Catalogue 3222.0 (Datacubes)

Australian Bureau of Statistics (2003a) *Australia Population Projections by SLA* (ASGC2002) 2002-2021. Commonwealth Department of Health and Aged Care, Catalogue 3222.0 (Datacubes)

Australian Bureau of Statistics (2003b) *Population Projections 2002-2100*. Catalogue No. 3222.0.

Australian Bureau of Statistics (2003c) *Schools*, Catalogue No. 4221.0.

Australian Bureau of Statistics (2003d) *Basic Community Profiles* 2001.0

Australian Bureau of Statistics (2003e) *Time Series Profiles* 2003.0

Australian Bureau of Statistics (2003f) *Demography, Tasmania*, Catalogue No. 3311.6.55.001 (Datacubes).

Australian Bureau of Statistics (2004) *Population by Age and Sex, Australian States and Territories,* Catalogue No. 3201.0 Table 2

Baum, N. and Jackson, N.O. (2004) *Planning the Local Government Response to Ageing and Place*, Local Government Association of NSW and Shires Association of NSW (http://www.lgov.org.au/site/category/page/1000056.html)

Felmingham, B., Jackson, N.O. and Zhang, Q. (2002) Indicative impacts of population decline on the operations of Local Government in Tasmania. *Australasian Journal of Regional Studies,* 8(1), pp. 95-109.

Henkens, K. and Van Dalen, H.P. (2002) *Early Retirement Systems and Behaviour in an International Perspective* (unpublished)

Jackson, N.O. (2004a forthcoming) Regional Population Ageing and Local Government Funding: Some Considerations, accepted for publication in *Australasian Journal of Regional Studies*

Jackson, N.O. (2004b) The impact of ageing on Australia's future. An analysis in four dimensions. http://www.taspop.tasbis.com

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.

Kuné, J. (2003) *On Global Aging. Old-Age Income Systems in the EU and Other Major Parts of the World*, Physica-Verlag Heidlelberg.

Living in Australia (www.livinginaustralia.org/some_results.htm#Retirement) (accessed 30.01.04)

Lutz, W., Sanderson, W., and Sherbov, S. (2001) The end of world population growth, *Nature*, 412:543-545.

Management Advisory Committee (2003) *Organisational Renewal*, Canberra, Commonwealth of Australia.

United Nations (2000a) 'R*eplacement Migration*, Population Division, Department of Economic and Social Affairs, United Nations Secretariat.

United Nations (2000b) Expert group meeting on policy responses to population ageing and population decline, Population Division, Department of Economic and Social Affairs, United Nations Secretariat, New York 16th-18th October (http://www.un.org/esa/population/publications/popdecline)

Yeoh, B.S.A., Lutz, W., Prachuabmoh, V., and Arifin, E.N., Editorial, *Journal of Population Research* 20(1), iii-ix.