REGIONAL POPULATION AGEING AND LOCAL GOVERNMENT FUNDING. A TENTATIVE CONSIDERATION OF THE ISSUES

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ABSTRACT: Population ageing is unfolding at different rates across Australia's States, Territories, and Local Government Areas. Current gaps in the demographic composition of these regions (at least as they are currently determined) will now open up. Between now and 2019, half of all Australia's Local Government Areas are projected to either decline in size or not to grow, much of this change coming from regionally-differentiated shifts in age structures that are already beginning to deliver more elderly (and deaths) than children (or births). The paper argues that the changing demography has significant implications for the basis upon which Local Governments currently receive population-oriented financial assistance from the State. Specifically, it argues that the use of 'own state' comparisons as the basis of this assistance is defective; that while this methodology may have accommodated population differentials in the past, it will become ever-more problematic as population ageing proceeds, causing some Local Governments to be under- or over-compensated by contrast with their exact counterparts in other States. Such an outcome would 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 within-state.

1. INTRODUCTION

A sustained ageing of the Australian population age structure is now a broadly accepted fact, and, here, as elsewhere in the developed world, its implications are being widely anticipated. To date however, most Australian pronouncements on the topic have viewed it at the national level only (e.g., Clare and Tulpulé 1994; Crowley and Cutbush 2000; Healy 2001; Kinnear 2001; Quiggin 2001; Guest and McDonald 2002a, 2002b), while its regional and sub-regional manifestations have seen relatively little press.

Three exceptions to this general rule exist. Perhaps not surprisingly they emanate from Australia's three oldest states - South Australia, Tasmania, and Victoria. There, researchers (and politicians) are beginning to draw attention to the marked regionality of projected population ageing across and within Australia's States and Territories, and to some of the social, economic and political implications of these forthcoming disparities (Hugo 1999, 2000, 2001, 2002a, 2002b; Deacon 2000; Beer and Keane 2000; Jackson and Kippen 2001; Felmingham, Jackson and Zhang 2002; Jackson 2002; Jackson and Felmingham 2002; Jackson and Thompson 2002).

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This paper deliberates on just one of these areas of enquiry – the consequences of regional population ageing for Australia's Local Governments, and in turn for the population-oriented aspects of their financial assistance via the Local Government Grants Commissions (LGGCs). Importantly, the term 'deliberates' is carefully chosen, for the issue is extremely complex and politically sensitive. The above bodies are also well aware of the importance of demographic diversity, that of Local Government jurisdictions *within* each State being *the* central motif underlying the rationale of much LGGC financial assistance to them ($D^{O}T^{A}RS$ 2001:5-6). Nevertheless, it is fair to claim that the general lack of studies on the regionality of population ageing is hindering the ability of the above agencies to develop appropriate frameworks in this area.

The central argument of the paper is that the current methodology of calculating financial assistance to Local Government Bodies, by comparing certain aspects of the populations they serve with those of other Local Governments in the *same* State/ Territory, is fundamentally defective; that while this 'own state' comparison model may have accommodated population differentials in the past, it will become ever-more problematic as population ageing proceeds, causing some Local Governments to be under- or over-compensated by contrast with their exact counterparts in other States. Such an outcome would seem antithetical to the intended objectives of 'horizontal equalization' (the main principle underlying fiscal transfers to Local Governments, outlined below), which is basically to level the playing field between Local Governments, albeit *within*, rather than between, each state. The issue of increasing auto-correlation must also be considered, where some 'disability factors' (the cost disadvantages on which financial assistance may be given, explained in more detail below) could eventually compensate ―or fail to compensate― for the same factor more than once. It must also be stressed that this paper will illustrate the argument with reference to a narrow range of population-based disability factors only. While there will be few Local Government functions and responsibilities that will *not* be affected by the forthcoming demographic shifts, the paper is intended as a background for deliberation only, rather than a fully-developed exposition on the topic.

The paper begins with a brief review of Australia's demography at State/Territory level, followed by an outline of the drivers of past and future regional population change. It then considers the arrangements under which population-oriented financial assistance is currently distributed to Local Governments, focusing in particular on the notion of 'fiscal horizontal equalisation' and a selected range of the population-oriented disability factors that are used to apportion this federal-level assistance in an equitable manner. Finally it draws the two elements together, illustrating them with a range of projections of demographic indicators (or potential disability factors) at Local Government level.

2. THE REGIONALITY OF POPULATION AGEING IN AUSTRALIA

Regional differences in the components and dynamics of population change, namely, births, deaths, and migration, have long caused Australia's States and

Territories to differ demographically. These components of change and their implications are outlined in the following section. In the interim, Figure 1 shows their current outcomes in terms of the differing age structures of Australia's two 'oldest' and two 'youngest' regions, respectively, South Australia, Tasmania, the Australian Capital Territory (ACT) and the Northern Territory. (A population is considered 'old' when 10 per cent is aged 65+ years, while a population is 'young' when it has less than 5 per cent at these ages - Weeks 1999:278-9. However it must be noted that such indices are somewhat arbitrary, and will undoubtedly move upwards as population ageing proceeds).

As Figure 1 shows, the age structures of South Australia, Tasmania, the ACT and the Northern Territory differ substantially. By contrast, those of Victoria, New South Wales, Queensland, and Western Australia (not shown here), which in terms of population ageing can be ranked at numbers 3, 4, 5 and 6, are very similar in appearance to that of South Australia; each is simply a little 'younger', meaning that each has successively lower proportions at the older ages and higher proportions at the younger ages.

Also of note is that while the overall age structures of South Australia and Tasmania differ markedly, in 2002 only 2 months separated their median ages, indicating a limitation in the use of median age as a key indicator of population ageing. This gap is also closing rapidly, having reduced from 12 months over the past five years. It is projected to close within the next decade (quite likely within the next few years), after which Tasmania will take over from South Australia as Australia's oldest region. The primary reason for this cross over is that while both States have experienced considerable net migration losses over the last decade, Tasmania has experienced the greater loss—around 14 per cent of the 18-38 year age group (Jackson and Kippen 2001). The loss of so many people at the key reproductive ages has had a compounding effect in the loss of the babies and children they would have had and/or have taken with them. The effect for Tasmania has been a significant 'premature' ageing, with the State shifting from being the nation's youngest to oldest in just three decades.

Jackson and Felmingham (2002) outline what these differences, along with assumptions regarding future births, deaths and migration,[2] mean in terms of the regionality of future population ageing. The main points are that:

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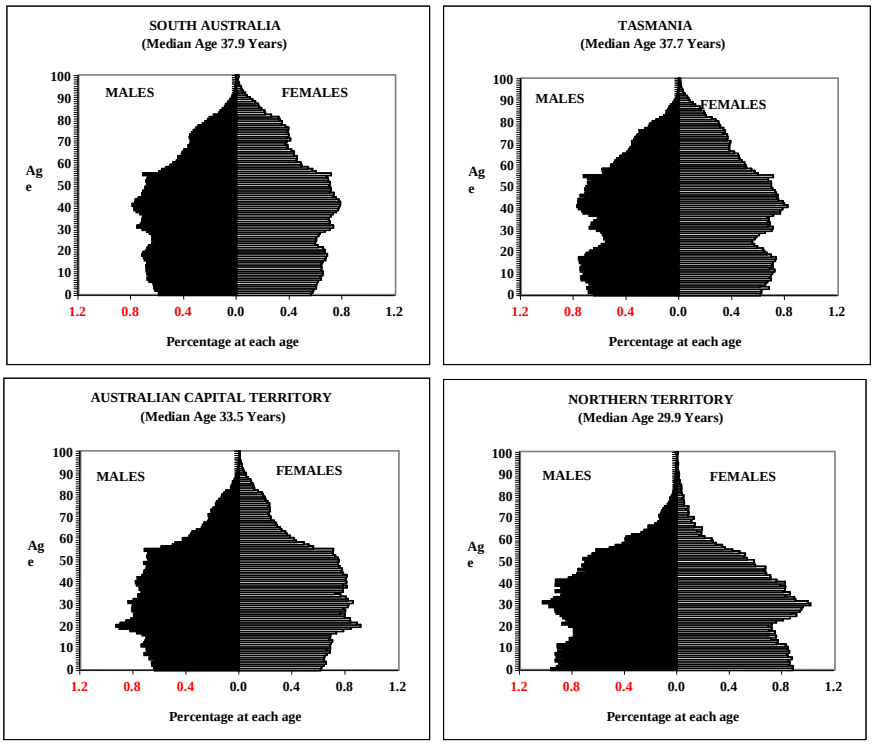
[2] The projections in Figures 2 and 4 are based on the ABS Series II (medium case) projections, which assume an annual net international migration gain of 90,000 per persons; international and interstate migration to each state at approximately current levels of distribution; the Total Fertility Rate falling to 1.6 by 2008 and then remaining constant, and life expectancy increasing one year for every ten years projected. Specific assumptions for each State and Territory are found in Chapter 4 of the ABS *Population Projections 1999-2101* Catalogue 3222.0. While net international migration is likely to be greater than the 90,000 included in the Series II projections, it is conventional to use this series for interstate comparisons. The trends so derived should be considered less in terms of their absolute numbers, than their relative patterns between states.

- while approximately 12.7 per cent of all Australians are currently aged 65+ years, there is a substantial disparity across the States and Territories, with the Northern Territory and the ACT, at 3.9 and 8.8 per cent respectively, not yet 'officially' old. This contrasts with the situation for South Australia and Tasmania, which have 14.8 and 14.0 per cent respectively.
- this gap in proportions aged 65+ years will now open up, from its current 10 percentage point difference, to around 24 percentage points by 2051;
- the increasing disparity reflects regional differences in the 'speed' of ageing (the number of years taken to transit from 10 to 20 per cent aged 65+ years). For example, while Tasmania and South Australia will take between 36-38 years to go from 10 to 20 per cent aged 65+ (both having been at 10 per cent around 1980), the ACT will take only 25 years (beginning around 2007, when it reaches 10 per cent);

Figure 1. Age- Sex Structures and Median Ages of Selected States and Territories, 2002 (Source: Australian Bureau of Statistics Catalogue 3201.0)



- while all regions will be ageing, the more profound ageing-related issues that Tasmania and South Australia will be engaging with by the 2020s will not be encountered by the ACT, Western Australia, or Queensland until the 2040s, or the Northern Territory until substantially later.

Uppermost among these issues will be a regionally-differentiated shift from a long-term situation of natural increase, to one of natural decline, where deaths will exceed births. That is to say, population ageing is not simply about increasing proportions and numbers of elderly, which will eventually translate into increased numbers of deaths.[3] With its primary cause being the low and still falling birth rates experienced since the late 1960s, structural population ageing is also bringing with it significant declines (some already beginning, some projected) in both the proportions and numbers of children and young adults. As Figure 2 shows, major regional disparities in the projected numbers of children and young adults are also about to open up, with enormous implications for everything from schooling and the tertiary education sector to the labour market (Aungles, Karmel and Wu 2000; Hugo 2001; Jackson and Thompson 2002; Jackson and Felmingham 2002). The differing regional experiences of migration outlined below are also centrally involved, but increasingly it will be the declining numbers of births (that are driving structural population ageing) that will preside over the plummeting numbers of young in the older regions, while numbers in the same age groups will still be soaring in the younger regions.

When the trends for the elderly and the young are considered together in terms of their implications for natural increase or decline, their enormous implications for future population change within each State/Territory can be appreciated. Reflecting the regional disparities already outlined, the shift to natural decline will occur across a substantial time span, beginning as soon as next decade in Tasmania but not in the Northern Territory until well into the second half of the century (Jackson and Felmingham 2002). Most importantly, at least in the short to medium term, these changes will occur even with the substantial net international migration gains built into these medium case projections (90,000 per year) *or* their 'high variant' counterpart (110,000 net migration gain per year), because they are already implicit within the age structure.

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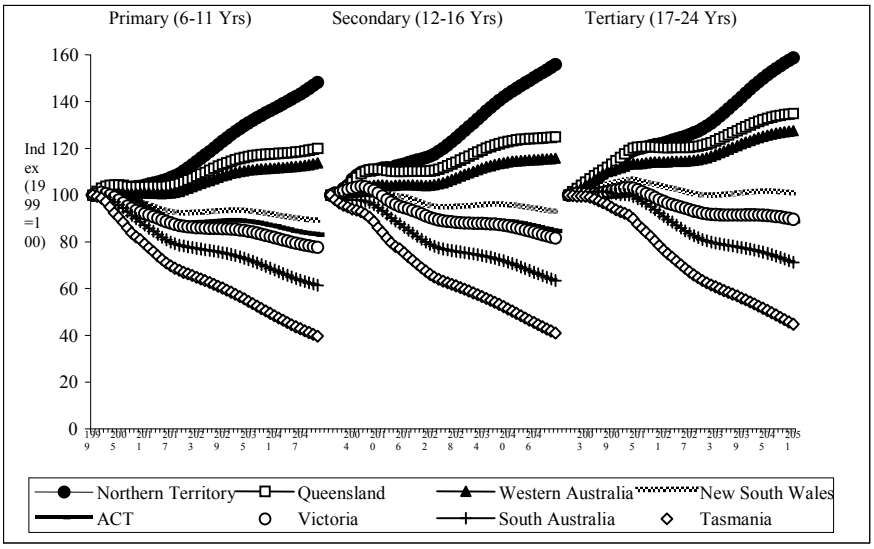
[3] Population ageing has two technical dimensions: structural and numerical ageing. Structural ageing refers to the increasing proportions of elderly in the population, and is primarily caused by falling birth rates that are delivering fewer babies and children into the base of the population age structure. Numerical ageing refers to the absolute increase in the numbers of elderly, and is primarily caused by increases in life expectancy, first when the current elderly themselves were born, and more recently (since the 1980s) by improved longevity at older ages. The distinction is important because it is numerical ageing that is driving up the demand for many elder-oriented goods and services, while it is structural ageing that is the constraining factor in terms of fiscal provision (Jackson 2001).

Figure 2. Projected Primary, Secondary and Key Tertiary Education Ages (Indexed to 1999), By State and Territory



Source: Jackson and Thompson, 2002, Figure 1 (ABS Series II).

3. PAST AND FUTURE DRIVERS OF POPULATION CHANGE

Of the three contributors to population change (births, deaths and migration), it is migration that has preoccupied the thinking of most Australians (Hugo 2000:175-6). At Local Government level, rural to urban migration and urbanisation have further reinforced both the demographic differences and views on their causality, with most considerations of rural population decline attributing its cause to out-migration and scarcely mentioning natural increase (e.g., McKenzie 1994). Indeed, as Hugo explains, the role of births and deaths— in the form of natural increase— in contributing to population change and regional difference have long been taken for granted.

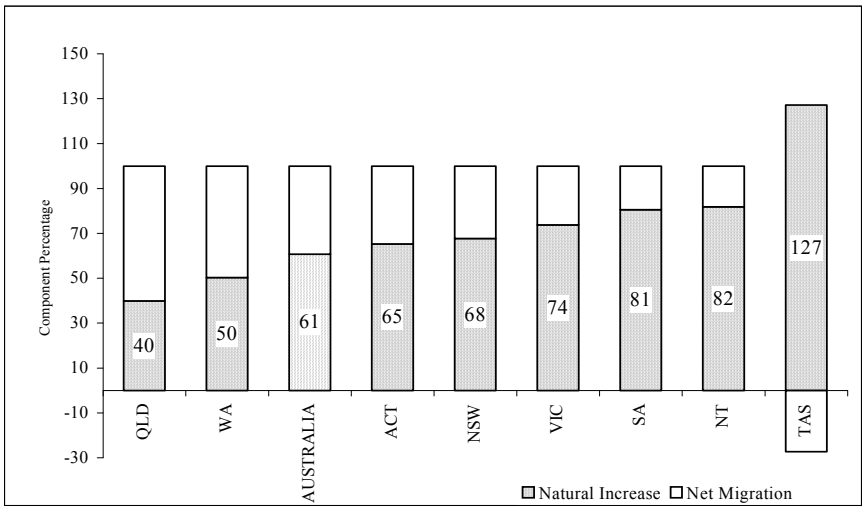
The significance of this oversight was indicated above. But it is most clearly observable from Figures 3 and 4, which show the relative contribution of natural increase (births minus deaths) and net migration (in-migration minus out-migration) to past (Figure 3) and future (Figure 4) regional population change.

As Figure 3 shows, at 40 percent of Australia's total growth since 1971, migration has indeed accounted for a sizeable proportion of that growth. However, the greatest contribution has come from the largely 'invisible' component of natural increase. This has been the case in all but Western Australia and Queensland, with the contribution from natural increase in the remaining regions ranging from 65 percent in the ACT to *all* of that in Tasmania.

That is, in Tasmania, an aggregate net migration loss of more than 20,000 persons over the period has been completely offset by natural increase.

Historical differences in the 'migration mix' of international and interstate migrants to these regions will also have a bearing on future patterns of growth and decline, both through the numbers of migrants *per se*, and the contribution they might make to natural increase. Nevertheless, by far the biggest impact on the population size and growth of most regions will be the speed at which natural increase reduces to zero and eventually becomes natural decline (Jackson and Felmingham 2002; see also NIDI 1999a, 1999b; United Nations 2000; McDonald and Kippen 2001; House of Lords 2001).

Figure 3: Aggregate Contribution (%) of Natural Increase and Net Migration Components to Population Change, By State/Territory (1971-2000)



Source: Jackson and Felmingham 2002, Figure 3
Source: Constructed from ABS Demographic Trends, Catalogues 3102.0 and 3101.0, various years

Figure 4 illustrates the argument for each State/Territory, showing the annual contribution to population change made by each component over the past three decades, and the projected contribution to 2051 according to the Australian Bureau of Statistics (ABS) Series II assumptions.[4] As noted these projections include an annual net international migration gain of 90,000 persons, distributed by State/Territory according to current patterns. Under these conditions, the arrow on each panel denotes the projected onset of natural decline. Compared with the significant contribution of natural increase to the past population growth of each region, the profound impact of the forthcoming shift to natural decline is clear. This is as true for the regions with high net gains of international and interstate migrants (e.g., New South Wales and Victoria with 42 and 23 per cent

[4] See Footnote 2.

of net international migrants respectively)[5] as it is for those with low gains; the only difference is the time-frame involved.[6]

Similar - and in some cases more pronounced - regionally disparate patterns and trends are evident at the level of Local Government. However, in order to understand the implications of these for Local Government, it is useful to first briefly review the role of demographic factors in current financial assistance arrangements.

4. LOCAL GOVERNMENT AND THE ROLE OF DISABILITY FACTORS

A unique aspect of Australia's highly democratic system of government is its three interacting tiers of responsibility at Federal (Commonwealth), State/Territory, and Local Government level.[7] The distribution of powers and responsibilities in this arrangement are complex (see for example www.cgc.gov.au), but many, such as key aspects of community health and social services for the elderly, the right to determine and levy rates, and the responsibility to provide and maintain large portions of the local physical and community infrastructure, lie with Local Government.[8]

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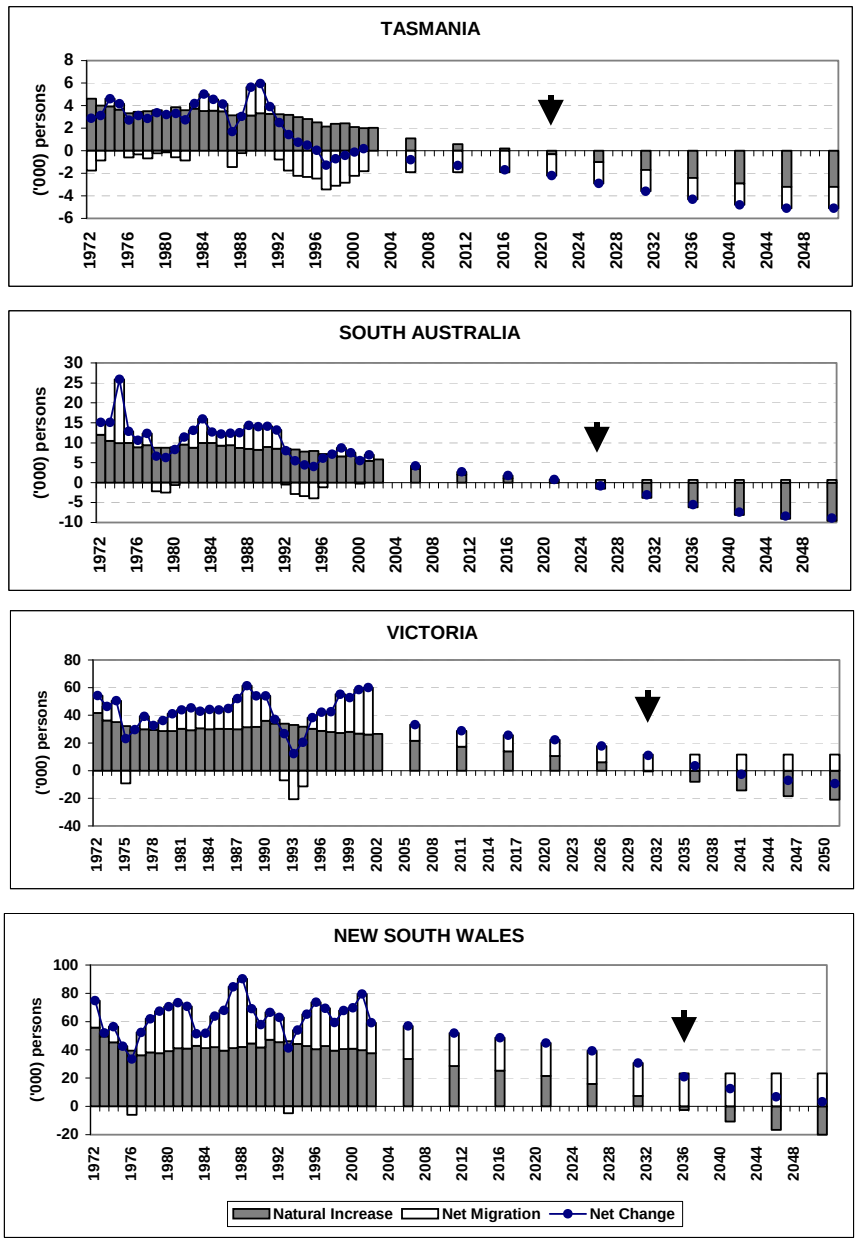
[5] The bulk of net international migration gains are assumed to go to four States: NSW (42 percent), Victoria (23 percent), Queensland (16 percent), and Western Australia (14 percent). Respectively these States account for 34.0, 25.0, 18.3 and 10.0 percent of Australia's population. By contrast, South Australia, the Northern Territory, the ACT and Tasmania receive around 3.5, 0.7, 0.3 and 0.2 percent of international migrants respectively, while accounting for 8, 1, 1.7 and 2.6 percent of the population.

[6] The higher net migration gains posited for Australia in recent target-setting by the Department of Immigration, Multicultural and Indigenous Affairs (DIMIA), around 110,000 per annum, also effect only the timing of this occurrence, delaying the onset of natural decline in each region by around 5 years.

[7] Only the Federal and State/Territory levels are formally recognised within the Australian Constitution. Local government bodies are created by legislation at State/Territory level. See for example http://scaleplus.law.gov.au/html/pasteact/1/641/top.htm

[8] Local Government expenditures extend across a broad array of functions such as the provision of water and sewerage services, the reconstruction and maintenance of roads and bridges, many social services for the elderly, community health, and health inspections, family and child welfare, sanitation and environmental protection such as storm water drainage and street cleaning, and the planning and building of amenities like street lighting, shopping malls and cemeteries. However, these responsibilities differ according to the State/Territory's policies. (see also Jackson and Felmingham 2002)

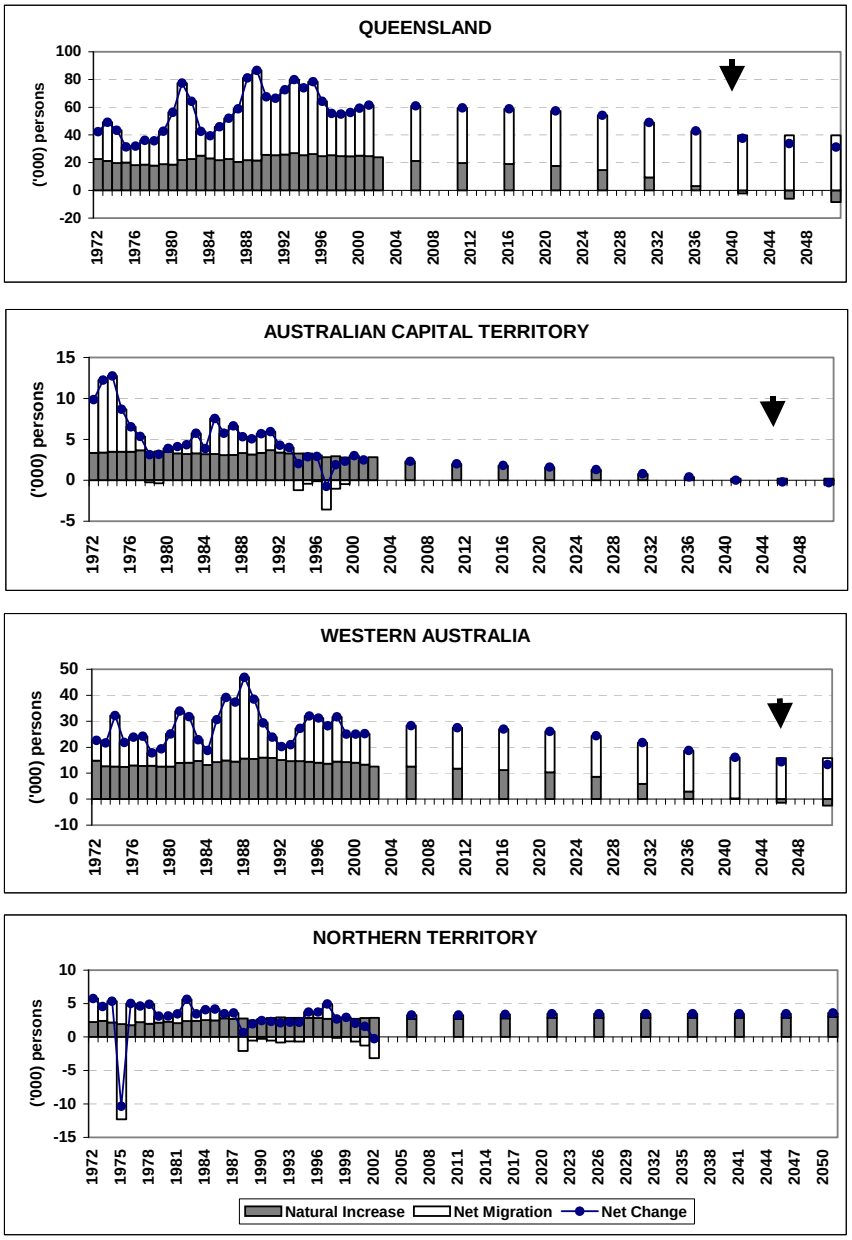
Figure 4: Annual Contribution of Natural Increase and Net Migration Components to Past (1971-2001) and Future (2002-2051) Population Change, By State and Territory



Source: *ABS Catalogues 3102.0 and 3101.0, various years, and 3222.0 (2000), Series II*

Notes: *December Year data; different scales*

Figure 4 (cont): Annual Contribution of Natural Increase and Net Migration Components to Past (1971-2001) and Future (2002-2051) Population Change, By State and Territory



Source: *ABS Catalogues 3102.0 and 3101.0, various years, and 3222.0 (2000), Series II*

Notes: *December Year data; different scales*

Contributing to the coordination of this complex arrangement at State/Territory and Local Government level are the Local Government Grants Commissions (LGGC), advisory bodies concerned with recommending the appropriate distribution of a pool of revenue (in 2000-01 around $1.3 billion) made available by the Commonwealth for the equalisation of Local Government capacities to provide services. There are seven LGGCs— one for each State/Territory, with the exception of the Australian Capital Territory (ACT), which is excluded from these arrangements as it is directly funded by the ACT Government. In 2001 there were 727 Local Governing Bodies in Australia, including approximately 100 Indigenous and other community bodies ($D^{O}T^{A}RS$ 2001:5).

Explicit within the exercise of fiscal redistribution is the principle of *horizontal equalisation*, an egalitarian framework via which the smaller States and Territories (such as Tasmania and the Northern Territory) and their respective Local Governments receive disproportionately larger shares of Federal financial assistance on account of their lack of scale economies and narrower tax bases ($D^{O}T^{A}RS$ 2001:25-52).[9]

The principle (of horizontal equalization) is operationalised via the application of a range of 'disability factors', relative cost disadvantages that affect Local Government capacities to provide certain goods and services. In addition to many other items[10] that are not the focus of this paper, these factors extend across a number of population indices such as growth/decline, age profile (for example, 'higher than average proportion of population over the age of 65 years'), dispersion and isolation.

Very importantly, the disability factors are calculated for each Local Government municipality by comparing its demand or supply disadvantage with its *own State's average* (State Grants Commission 2001-02:8). This arrangement reflects the *Local Government (Financial Assistance) Act 1995* requirement that, via the allocation of these funds:

> *Each local governing body in a State is able to function, by reasonable effort, at a standard not lower than the average standard of other local governing bodies in the State ($D^{O}T^{A}RS$ 2001:31).*

Although some common use of the various disability factors exists, there is in fact no common pool from which they are drawn ($D^{O}T^{A}RS$ 2001). Rather, the

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[9] Importantly, fiscal equalisation is designed to equalise the *capacity* of States and Local Governments to provide services, not the outcomes, which are affected by State and Local Government policies. See http://www.cgc.gov.au (national principles) for detail. NB. By 'states' is meant also the Northern Territory.

[10] Disability Factors include items such as diseconomies of scale, degree of isolation, daily/weekly worker influx and 'day tripper' effects (which place additional demands on locally-provided facilities), unemployment levels, tourism, climate, and specific regional responsibilities (see for example the Tasmanian State Grants Commission Annual Report 2001-02).

above arrangements mean that the LGGCs of each State are responsible for determining and developing their own set of disability factors, based on the national principles and local circumstances. However, while this methodology may have served its purposes in the past, the emerging demographic disparities that population ageing will generate indicate that it may become less equitable in the future. Indeed, since the underlying principle of horizontal equalization is to level the playing field between Australia's 727 Local Government Bodies, albeit within each State, the linking of demand and supply disadvantages to State/Territory 'own averages' seems highly problematic.

There is of course much more to the above principle and its application than can be discussed here, as there is to the activities of Local Government *per se* (the $D^{O}T^{A}RS$ 2000-01 Report on the operation of the *Local Government [Financial Assistance] Act* 1995 provides an excellent overview). For example, during the 1999-2000 year, Local Government revenue amounted to over $16 billion (around 2.5 percent of GDP), only 13 percent of which came from grants and subsidies ($D^{O}T^{A}RS$ 2000-01:5).[11] That said, a sizeable proportion of the 37 and 32 percent of Local Government revenue derived respectively from taxes (mainly rates) and the sale of goods and services, are population- (*per-capita*) - dependent. Rates are paid by householders and businesses; while householders and businesses purchase (and have purchased for them) Local Government goods and services. It goes without saying that the size and composition of each Local Government population are critical factors in each Local Government Body's ability to raise revenue.

5. POPULATION AGEING AND NATURAL DECLINE AT THE LEVEL OF LOCAL GOVERNMENT

As implied above, the same disparate demographic patterns and trends that will from here on in become increasingly evident at State and Territory level will also occur at the level of Local Government. However, here their correlation with the State/Territory to which they belong is somewhat less predictable. For example, as Australia's structurally oldest State, South Australia in 2001 had 14.6 percent of its population over the age of 65. As Table 1 shows, in 2001 it also had the highest proportion (75 percent) of its Local Government Areas with greater than national average proportions over the age of 65 (the national average being 12.4 percent), and this situation will remain so across the projection period. By contrast, as Australia's second oldest State, in 2001 Tasmania (with 13.7 percent aged 65+ years) had only the fourth highest proportion (62 percent) of its Local Government Areas above the national average— undoubtedly a reflection of the 'premature ageing' that Tasmania is experiencing, caused by the net migration losses over the 18-38 year age groups noted earlier, rather than low fertility *per se*. Even in 2019, when it will be the oldest State, Tasmania will still

[11] Local Governments also employ some 140,000 people across Australia, and are collectively responsible for infrastructure worth more than $130 billion.

have only the second highest proportion of its Local Government Areas with above national levels of elderly.[12]

Table 1. Percentage of Local Government Areas with Indicative Percentage Aged 65+ Years Above *NATIONAL* Average, 2001 and Projected to 2019 by State/Territory (a)

	2001	2006	2011	2016	2019	%Change
SA (68)	75	82	85	90	90	20
TAS (29)	62	66	66	72	72	17
VICT (78)	73	76	77	76	77	5
NSW (176)	69	70	66	64	64	-7
QLD (125)	40	41	42	46	46	16
WA (141)	29	29	29	28	28	-2
ACT (b) (88)	32	35	44	57	57	79
NT(9)	0	0	0	0	0	0

Notes: (a) 'Indicative Percentage' means that ABS data for SLAs have been aggregated to approximate LGA and/or Local Government Body classifications, and applied to the 1996 population base. These medium case projections have a 1996 population base since data on a 2001 base are not available as yet. The analysis is based on mutually exclusive mix of Local Government Areas and Bodies.

(b) ACT is treated differently under the CGC arrangements. ACT data are included here for comparative purposes, based on 88 SLAs. (Of the ACT's 106 SLAs, 18 account for less than 1 percent of the ACT population. These SLAs have been excluded from the analysis.

Source. Constructed from Australian Bureau of Statistics Catalogue 3222.0, Population Projections by SLA (ASGC 1996), 1999-2019 – Commonwealth Department of Health and Aged Care.

It is important to note here that these anomalies have at least as much to do with the somewhat arbitrary boundaries that have been drawn (and redrawn)

[12] The following analysis is based on 714 Local Government *Areas and/or Bodies*. Classification disparities between Local Government *Areas* and Local Government *Bodies* mean that these numbers do not correlate exactly with those referred to in the 2001Local Government National Report (DTRS 2001), which is based on Local Government *Bodies* only. For example, according to that Report, Queensland has 157 Local Government Bodies, while equivalent ABS data are available for only 127 Local Government Areas. The Report similarly identifies 70 Local Government Bodies for the Northern Territory, while equivalent ABS data could be aggregated into 9 Local Government Areas only. Other disparities are much smaller, the Report indicating, for example, 74 Local Government Bodies in South Australia, against available ABS data for 68 Local Government Areas. As explained in the notes to Table 1, the projections are also based on a 1996 database because data for 2001 have not yet become available. It is for these reasons that the analysis should be considered 'indicative' only.

around each State and Territory's Local Government Areas over the years, as they have with population ageing and/or migration, and that these boundaries will also almost certainly continue to change, affecting the projections that are shown in Table 1. Nevertheless, having been so delimited, the age composition of the population of each Local Government Area is the potential basis for significant elements of federally-provided funding.[13] But, as noted earlier, this basis is currently *not* the proportion of each State or Territory's Local Government Areas with percentages aged 65+ years above the *national* average, but rather, the proportion above the State or Territory's *own* average. As shown in Table 2, these percentages and their projected trends differ quite substantially to those in Table 1.

Where, for example, South Australia currently has around 75 percent of its Local Government Areas with greater than national average proportions over the age of 65 years, when compared against South Australia's own State average this drops to 59 percent. Moreover, where, under the former measure, these proportions increase over the next two decades, under the latter situation they actually decline.

Table 2. Percentage of Local Government Areas with Indicative Percentage Aged 65+ Years Above *STATE/TERRITORY* Average, 2001 and Projected to 2019 by State/Territory (a)

	2001	2006	2011	2016	2019	%Change
SA (68)	59	57	60	59	57	-3
TAS (29)	48	52	55	48	45	-7
VICT (78)	68	74	72	71	71	4
NSW (176)	64	64	62	61	61	-4
QLD (125)	50	54	52	53	52	5
WA (141)	48	46	43	41	36	-25
ACT (b) (88)	50	50	56	63	64	27
NT(9)	33	22	22	33	44	33

Notes: Same as Table 1.

Source. Same as Table 1.

The reason for the difference between Tables 1 and 2 is simply that, in keeping with the mathematical principle of averages, older *regions* have lower proportions of their Local Government Areas with percentages over the age of 65 years above their *own* State averages, than above the *national* average; younger regions have higher proportions. This situation means that some younger regions *could* (if they were choosing to utilise an 'age profile' disability factor) have some Local Government Areas being financially assisted for having greater than average proportions over the age of 65+ years, while some older regions could have equivalently 'aged', even 'older' Local Government Areas, not being

[13] 'Potential' because not all LGs in fact utilise this 'disability factor'.

assisted. The situation is perhaps best illustrated in the example of the Northern Territory. Currently Australia's structurally 'youngest' region (3.4 percent aged 65+ years), the Northern Territory currently has no Local Government Areas with proportions of elderly above the national average, but 33 percent when compared against its own average, increasing to 44 per cent by 2019. In fact none of the Northern Territory's Local Government Areas currently exceed six per cent aged 65+ years; none are thus 'officially old' (denoted by 10 per cent aged 65+ years – Weeks 1999).

Table 3 illustrates this argument by directly comparing Tasmania and Western Australia as examples of older and younger regions. When compared on the 'own state' methodology (Column 1), both currently have 48 percent of their Local Government Areas with higher than 'own state' average proportions aged 65+ years. However, when compared with the national standard, Tasmania has 62 percent (of its Local Government Areas) above the national average, while Western Australia has only 29 percent. Assuming both States were using the 'higher than average proportion aged 65+ years' disability factor, the difference in methodology would mean that Tasmania would have four (or 14 per cent) of its Local Government Areas that arguably 'should' be being financially assisted, but would not be, while Western Australia would have 27 (19 percent) that would be being assisted, but probably 'shouldn't' be. That is to say, each of those four Tasmanian Local Government Areas would have proportions aged 65+ years above the national average of 12.4 percent, while each of the 27 Local Government Areas in Western Australia would have proportions below.

Table 3. Local Government Higher than Average Percentage Aged 65+ Years

State/ Percentage Aged 65+ Years	% of State's LGs Above State's Own Average	% of State LGs Above National Average (12.2%)
Tasmania (13.7%)	48% (n=14)	68% (n=18)
West Australia (10.7%)	48% (n=68)	29% (n=41)

Notes: Same as Table 1.

Source. Same as Table 1.

Very importantly, a different but equally significant picture emerges if a more youthful population indicator is employed. Table 4 compares the same two States on a 'higher than average proportion aged 15-24 years' disability factor. The two columns indicate how the effect of the 'own state' model applied to Western Australia's relatively youthful population (first column) would disadvantage that State, relative to Tasmania. In both States, 23-24 percent of Local Government Areas would be entitled to receive financial assistance on this indicator. However, when compared with the national standard, only 10 percent (3) of Tasmania's Local Government Areas have proportions above the national average (14.1 percent at those ages), while 27 percent (38) of Western

Australia's do. This means that 14 percent (4) of Tasmania's Local Government Areas could be being financially assisted, while 4 percent (5) of Western Australia's Local Government Areas would have higher proportions, but could not be so assisted.

Table 4. Local Government Higher than Average Percentage Aged 15-24 Years

State/ Percentage Aged 15-24 Years	% of State's LGs Above State's Own Average	% of State LGs Above National Average (14.1%)
Tasmania (13.6%)	24% (n=7)	10% (n=3)
West Australia (14.7%)	23% (n=33)	29% (n=38)

Notes: Same as Table 1.

Source. Same as Table 1.

While similar comparisons can be made of many such indicators, a more useful analogy can be made with the poverty line. Imagine that each State/Territory had its own poverty line, calculated as a *different* percentage of each State/Territory's average income. In some States/Territories, Local Governments or other bodies could be being assisted for having higher than State/Territory average proportions in poverty, when in fact that region's average income may be well above that of other regions in which proportionately more impoverished Local Government Areas (or other bodies) would not be being so assisted.

The message that emerges is that while the primary objective of horizontal equalization is to level the playing field between Local Government costs and/or abilities to deliver similar services *within each individual State*, it is probably having the effect of increasing inequalities between the Local Governments of each state, and thus between each state as a whole.

Moreover, while the 'own state' basis of financial assistance remains in use, this situation can only exacerbate. As each state transits the space between low and high levels of population ageing, and between natural increase and natural decline, across substantially different time frames, the 'own state' baselines against which its disability factors will be measured will also move at different rates to those in other states. As indicated, older states will typically have higher proportions of their Local Government Areas with proportions above both the state and the national average. However, because the gap between the older and younger states is now projected to open up substantially (from its current 11 percentage point gap, to around 24 percentage points by 2051), so too will the relative proportions of Local Government Areas with populations above or below their own state average.

We can return to the analogy of the poverty line. When poverty lines are based on average incomes, and the average income increases or decreases over time, so too can the proportion of the population in poverty (Easton 1997;

Statistics New Zealand 1998:89-90; Mitchell *passim*). 'The problem' occurs because, over time, averages are dragged upwards (or downwards) by the changing proportions of people (or incomes) at the higher (or lower) margins. If— under the above hypothetical of each Australian State/Territory having its own, different, poverty line— the average income of some States/Territories was to increase or decrease at a greater rate than that of other States/Territories, gaps would also grow in the relative proportions of each State/Territory's Local Government Areas in poverty. States with higher and increasing average incomes could experience higher and increasing proportions of Local Governments with higher-than-State-average proportions in poverty; lower/declining income States could experience the opposite.

The resolution to the poverty line problem is the use of a line based on the median income— the income level above and below which half of the population fall. However, when applied to regionally differing age structures, such a resolution is not so straightforward. Use of the median age of each State, or the nation as a whole, would render invisible the potentially significant perturbations in their different age structures (Figure 1).[14] Indeed, interim analysis indicates that the appropriate baseline measure *is* the proportion in each age group, provided that it is compared with a *national* average.

We can develop this argument by turning to another age group. As noted above, some Local Government Areas also receive (or have the potential to receive) financial assistance for having higher than State/Territory average proportions of their populations aged 15-24 years. However, and indeed importantly, the following analysis indicates that not only is the 'own state' method of assessing the financial assistance needs of Local Government Areas problematic, but so too is the very concept of compensating for higher than average proportions of 15-24 year olds. As Table 5 indicates, from this point on, *even with the relatively high migration levels assumed in these projections*, all States/Territories will be dealing with *declining* proportions at these ages. Although this trend, termed a 'youth deficit' by the CIA (1994)[15], is expected to have a number of positive outcomes, they may also require Local Government assistance in the short to medium term, as the declining presence of 15-24 year olds has many down-line consequences for future revenue-gathering: these are the people who we look to, within a few years, to buy the houses, pay the rates, and have the children that keep the schools and related businesses and industries operating and viable.

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[14] Median ages in 2002 ranged from 29.9 years in the Northern Territory to 37.9 years in South Australia.

[15] According to the CIA a youth deficit occurs when the proportion of the population that is aged 15-24 years declines below 15 per cent. In 1980 this phenomenon was nowhere in evidence. By 1985 it appeared in 5 countries; by 1990, 16 countries. In 2001 it was evident in approximately 54 countries, having appeared in Australia in 1995.

Table 5. Percentage of Population Aged 15-24 Years , by Total and State/Territory 2001 and Projected to 2019 (a)

	2001	2006	2011	2016	2019	%Change
SA (68)	14.1	13.7	13.4	12.9	12.5	-11.3
TAS (29)	13.3	13.2	12.9	12.3	11.8	-11.3
VICT (78)	13.6	13.4	12.9	11.9	11.3	-16.9
NSW (176)	13.7	13.4	13.1	12.6	12.4	-9.5
QLD (125)	14.5	14.3	14.0	13.4	13.0	-10.4
WA (141)	14.7	14.4	13.9	13.3	12.9	-12.2
ACT (b) (88)	16.3	15.8	15.3	14.8	14.3	-12.2
NT(9)	16.0	15.8	15.5	15.0	14.6	-8.5

Notes: Same as Table 1.

Source. Same as Table 1.

Accordingly, in a departure from the current practice (or potential practice) of financially assisting Local Governments with *higher* than State average proportions aged 15-24 years, Tables 6 and 7 show the percentage of each State/Territory's Local Government Areas with proportions at these ages *below*, respectively, each State's own average, and the National average. These 'youth deficit' data confirm that the general State-by-State decline at these ages shown in Table 5 differs little at Local Government level, although there are some intuitively correct disparities. In Table 6 for example, South Australia shows a six per cent increase in the proportion of its Local Government Areas with a youth deficit when compared within-state, but a five per cent decline when compared nationally. Both are commensurate with South Australia being the oldest State. The former (increase) indicates that as South Australia undergoes further structural ageing it will experience an increase in the proportion of its own Local Government Areas with a youth deficit; but when compared nationally (Table 7) the decline suggests that the Local Government populations of several other states will be catching up with those of South Australia.

The situation of Tasmania provides an important contrast. Currently the second-oldest but fastest ageing state, the proportion of Tasmania's Local Government Areas with a youth deficit will scarcely alter across the projection period when compared within-state, but will increase by four per cent when compared nationally. The reason for this apparent anomaly (compared with South Australia) is the underlying assumptions of a continuing net migration loss at these ages. As noted earlier, Tasmania already has a sizeable bite out of its age structure at the 18-38 year ages, causing it to age prematurely, and in this respect to contrast substantially with the age structures of all other states. When compared on the 'own state' method, it appears that the trend will be somewhat commonly shared by Local Government Areas within the state; when compared externally, it will not be, and so Tasmania's Local Government Areas will disproportionately experience youth deficits *vis-à-vis* the Local Government Areas of other States.

Table 6. Percentage of Local Government Areas with Indicative Percentage Aged 15-24 Years, Below *State/Territory* Average, 2001 and Projected to 2019 by State/Territory (a)

	2001	2006	2011	2016	2019	%Change
SA (68)	74	76	76	78	78	6
TAS (29)	76	79	76	76	76	0
VICT (78)	71	71	74	77	77	9
NSW (176)	77	77	74	77	73	-5
QLD (125)	83	80	78	78	77	-8
WA (141)	77	76	76	75	73	-6
ACT (b) (88)	67	72	74	77	76	14
NT(9)	78	78	78	89	89	14

Notes: Same as Table 1.

Source. Same as Table 1.

Table 7. Percentage of Local Government Areas with Indicative Percentage Aged 15-24 Years, Below *National* Average, 2001 and Projected to 2019 by State/Territory (a)

	2001	2006	2011	2016	2019	%Change
SA (68)	88	84	84	84	84	-5
TAS (29)	90	86	90	90	93	4
VICT (78)	73	74	77	77	78	7
NSW (176)	81	78	80	80	74	-9
QLD (125)	78	74	73	71	73	-6
WA (141)	73	70	71	70	69	-6
ACT (b) (88)	39	43	42	42	40	3
NT(9)	22	33	22	22	22	0

Notes: Same as Table 1.

Source. Same as Table 1.

The comparison is particularly valuable because the importance of understanding the specific drivers of population change in each region cannot be over-emphasised. To observe the population of a particular region or Local Government Area ageing and/or declining, but not to be fully cognizant of the components of that change, means that the 'wrong' disability factors may be financially assisted or *not* assisted. In Tasmania's case, for example, it would be legitimate to compensate for both the increased proportions of elderly, and the declining proportions of youth, at least in the short term— so long as this assistance was based on national, rather than 'own state' comparisons.

The situation for the remaining States/Territories follows a more intuitively correct pattern. Local Government Areas in New South Wales, for example,

would see both larger proportions experiencing a youth deficit and a bigger decline in this indicator across the projection period when compared against the national standard than the State's own average. Again it is the former that provides the more legitimate comparison, because, when compared against New South Wales' own average, the fact that the Local Government populations of several other states are also ageing and catching up is rendered invisible.

Support for the argument is also found in the data for the ACT. Although the population of the ACT can yet scarcely be termed 'old' (the determination of which rests on there being 10 percent over the age of 65 years, and the ACT currently having around 8.6 percent at these ages), the ACT will eventually age faster than any other State or Territory (Jackson and Felmingham 2002, Figure 2). Whereas Tasmania and South Australia will have taken approximately 36-38 years to transit the space between 10 and 20 percent over the age of 65 years (beginning around 1980), the ACT will cover this terrain in 25 years, between approximately 2007 and 2031. Reflecting the onset of these dynamics, the data in Tables 6 and 7 show that against the 'own state' method of comparison the ACT will have substantially higher and more rapidly growing proportions of its Local Government Areas with youth deficits across the projection period, than when compared nationally. Although the ACT is treated differently with respect to Local Government funding, Local Government Bodies in the ACT should have this rapidity of ageing in mind when considering their future needs.

With a small time lag, the situation at 15-24 years will be largely replicated at 25-44 years, a very significant age group in terms of its family formation activities, but which is not examined in this paper because of space constraints. However, everything that the 15-24 year indicator will mean for the ability (or disability) of Local Governments to raise revenue, cover costs and deliver services will be found soon thereafter in the 25-44 year indicator, not least through its effects on (or lack of contribution to) natural increase, as illustrated in Figure 4. As the final years of the 'momentum effect'[16] pass through the Australian age structure, the numbers of young adults replacing them will steadily decline, even with substantial net international migration gains. But because these patterns and trends will differ so markedly by State and Territory, Local Government Areas will similarly experience disparate patterns and trends at these ages not unlike those shown in Tables 6 and 7.

Finally, Tables 8-10 show three equally significant outcomes of these changing demographic forces. Table 8 gives the ratio of the numbers of elderly (65+) to children (0-14 years) for each State and Territory. Ratios above 1.0 indicate the presence of more elderly than children, and foreshadow the shift

[16] The paradoxical increase in cohort size which occurs for approximately one generation after fertility falls below replacement level (2.1 births per woman). The increase is due to the size of the reproductive age cohort, and delivered Australia's largest cohort in 1971, when the TFR had fallen to 2.9, rather than the peak of the baby boom (1961) when the TFR was 3.6. The momentum effect continues until the last of the larger cohorts pass through reproductive age themselves.

from natural increase to decline. Table 9 reproduces these data in terms of the proportions of each State/Territory's Local Government Areas with more elderly than children. Lastly, Table 10 shows the proportion of each State's Local Government Areas that are projected to experience absolute decline over the next two decades.

Table 8. Ratio of Elderly (65+ Years) to Children (0-14 Years), 2001 and Projected to 2019, By State/Territory (a)

	2001	2006	2011	2016	2019	%Change
SA (68)	0.8	0.9	1.0	1.3	1.4	85
TAS (29)	0.7	0.8	1.0	1.2	1.4	108
VICT (78)	0.7	0.7	0.9	1.1	1.2	79
NSW (176)	0.6	0.7	0.8	1.0	1.1	69
QLD (125)	0.6	0.6	0.7	0.9	0.9	76
WA (141)	0.5	0.6	0.7	0.9	0.9	84
ACT (b) (88)	0.4	0.5	0.6	0.8	0.9	132
NT(9)	0.1	0.2	0.2	0.2.	0.3	114

Notes: Same as Table 1.

Source. Same as Table 1.

Until 2006, none of Australia's States or Territories will have more elderly than children (Table 8). This situation will then change markedly. By 2011 the phenomenon will be the experience of both Australia and Tasmania. By 2016 these States will have been joined by Victoria and New South Wales, and by 2019, also by Queensland. By 2019 even Western Australia and the ACT will be approaching these margins, with nine elderly for every ten children. The differing speeds with which each region will enter this situation are summarised in the right-hand column. Most notable, as implied earlier, is that while Tasmania is currently ageing at a faster rate than its other 'old' counterparts, the ACT will eventually age more rapidly.

While these trends may appear remarkable, more remarkable is that Local Government experience of this phenomenon has already well and truly begun (Table 9). Moreover, there is a very mixed relationship between the patterns and trends at State/Territory level, and Local Government Area level, again reflecting the somewhat arbitrary nature of Local Government boundaries. Confirming its current designation as Australia's oldest State, 24 percent of South Australia's Local Government Areas already have more elderly than children. By comparison, and seemingly contradicting much that has gone before, in 2001 *none* of Tasmania's Local Government Areas were this 'old'. The reason for this apparent anomaly is again Tasmania's hour-glass shaped age structure: Tasmania's experience of structural population ageing not being caused by a very low birth rate, but by the substantial out-migration of its youth and young adults over recent years. However, as can be seen in the massive 2,100 per cent increase projected in this indicator for Tasmania's Local Government Areas

between now and 2019, the current low ratios will not last long. The 'problem' here is that the massive youth deficits noted above will soon have their sequel in low birth *numbers*, defying even Tasmania's relatively high birth rate (currently a TFR of 1.9) to deliver sufficiently large numbers of children into the population.

Table 9. Percentage of Local Government Areas with More Elderly (65+ Years) Than Children (0-14 Years), 2001 and Projected to 2019, By State/Territory (a)

	2001	2006	2011	2016	2019	%Change
SA (68)	24	29	53	78	85	263
TAS (29)	0	3	38	69	76	2100
VICT (78)	18	31	53	76	83	364
NSW (176)	8	15	38	60	65	721
QLD (125)	3	6	14	34	46	1325
WA (141)	4	6	11	19	24	467
ACT (b) (88)	16	26	40	60	66	314
NT(9)	0	0	0	0	0	0

Notes: Same as Table 1.

Source. Same as Table 1.

Also notable are the relatively high proportions of the Local Government Areas of both Victoria and the ACT that currently have more elderly than children; 18 percent in Victoria and 16 percent in the ACT. In 2019 they will also remain two of the four regions with the highest proportions on this indicator. By contrast, the seemingly greater increases over the period for the Local Government Areas of New South Wales, Queensland, and Western Australia reflect their somewhat lower 2001 bases; by 2019 only New South Wales will have similar proportions (to the older regions) having more elderly than children.

As noted at the outset of the paper, population decline—in particular rural population decline—has typically been attributed to net migration loss. As argued in the case of Tasmania, this perception has certainly not been without substance. From now on, however, the trend towards natural decline will increasingly impinge upon the ability of many Local Government Areas to grow. The unreliability of births and deaths data for small populations make it implausible to disaggregate these trends by their component parts, so, in their absence, Table 10 illustrates the overall outcome in terms of the proportion of Local Government Area populations that are projected to experience absolute decline in size over the next two decades.

Table 10. Population Size and Change: Number and Percentage of Local Government Areas Projected to Experience Absolute Decline Between 2001-2009, by State and Territory (a), (c)

	Total Change	Number of Local Government Areas Declining	Percent of State's Local Government Areas Declining
SA (68)	55,099	38	56
TAS (29)	-22,156	18	62
VICT (78)	545,967	28	36
NSW (176)	953,388	83	47
QLD (125)	1,068,811	53	42
WA (141)	495, 818	33	23
ACT (b) (88)	37,922	60	68
NT (9)	59,197	1	11
Total	3,194,046	314	44

Notes: (a) and (b) Same as Table 1.

(c) Based on the 714 LGAs analysed for this paper. A further 53 LGAs are projected to experience no change. If these LGAs were added to the above data, the numbers and percentages experiencing 'decline or no change' would be 367 and 51 percent (of LGAs) respectively.

Source. Same as Table 1.

The data show that an Australian population of some 22 million is foreshadowed for 2019, the same as projected by the Australian Bureau of Statistics on the medium case (Series II) assumptions underlying the State/Territory level projections illustrated earlier. Under these assumptions, only Tasmania is projected to experience overall (absolute) decline. However, and indeed, despite the overall growth projected for all other States/Territories, 314 or 44 percent of the 714 Local Government Areas analysed for this 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 percent.

Changes this broad in nature have major implications for the current system of assisting growing and declining Local Government Areas, as they have also for systems of per-capita based funding *per se*. The problem of undertaking comparisons based on 'own state' average rates of growth and/or decline is also clearly evident from the underlying data (not shown here); one single Local Government Area in Canberra, for example, Gungahlin-Hall, is projected to grow by over 6,500 percent and to account for 72 percent of all growth in the ACT between now and 2019. It is this situation that appears to account for the major anomaly between the ACT's relative youth, indicated in the foregoing analysis, and the projected decline in 68 percent of the ACTs Local Government Areas shown in Table 10. Indeed, it would appear that the projections contain an

underlying assumption that Gungahlin-Hall will grow at the expense of almost every other Local Government Area in the ACT.

6. A NOTE ON THE ISSUE OF 'AUTO-CORRELATION

Sometimes, seemingly disparate indicators can involve the same underlying factor being included or measured more than once. This is termed auto-correlation[17] (e.g., Berry and Feldman 1985:73-77), examples of which are vacation options and post code, both of which are likely to reflect income; consumption patterns and household tenure, both of which can reflect family type (e.g. sole parenting). Similarly, from the foregoing analysis, it could appear that increasing proportions of elderly and declining proportions of young are two sides of the same coin: both would appear to be reflecting structural population ageing. The same can be said of absolute decline, which may be being caused by natural decline, which in turn is caused by the increased proportions of elderly (or more specifically, deaths) and decreased proportions of children (births). In many cases they *will* be two sides of the same coin, and, in these cases, it would appear that fiscal assistance could legitimately be sought for one or other, but not both. However, as the foregoing comparison of Tasmania with South Australia makes very clear, regions—and by implication, Local Government Areas—can have both situations occurring, yet they may not in fact be reflecting the same phenomenon. In these cases it would appear legitimate for all relevant categories to be the basis of assistance. What is imperative in making these decisions is detailed analysis of the *drivers* of local population change.

7. CONCLUSION

As population ageing unfolds at different rates across Australia's States and Territories, current gaps in the demographic composition of these regions and their Local Government Areas (as they are currently determined) will open up. Between now and 2019, half of all Local Government Areas are projected to either decline in size (44 percent) or not to grow (7 percent), and this trend will be experienced most unevenly within each State and Territory. By contrast with the past, where, in most regions, natural increase was the main driver of population change, much of this future change will be caused by the incremental shift towards natural decline; or rather, by the inability of migration to offset the difference between 'lost' births and increased deaths. Indeed, reinforcing these trends, across the 2001-2019 period the proportions of Australian Local Government Areas with more elderly than children will increase from their current 10 percent, to 57 percent, again unevenly by State and Territory. These changes will also be accompanied by significant declines in the proportion of youth (15-24 years) *below* the national average, in over 70 percent of Australia's Local Government Areas.

This changing demography will have significant implications for the current system of population-related financial assistance to Local Governments.

[17] Or sometimes, 'heteroscedasticity', which may be indistinguishable.

Specifically, this paper has outlined a case against the current use of 'own state' comparisons as the basis of such assistance. While no connection with poverty *per se* is intended, 'own state' comparisons can be compared with each state having its own, but *different*, poverty line. Moreover, where poverty lines are based on average incomes, over time the proportions above or below the line can move in tandem with those lines. While the situation is slightly different when applied to proportions in age groups, it is proposed that assistance to Local Governments would be more appropriately based a national rather than 'own state' comparative basis. Such an adoption would see the levelling of the playing field that is the overall objective of horizontal equalization, more able to deliver that outcome.

Related to this argument, a deep engagement with the local dynamics of population change is also urged. As the comparison of South Australia and Tasmania illustrated, States, and, by implication, Local Government Areas, can have the same median ages, yet have vastly different proportions at certain ages. These disparities, due largely (though not exclusively) to their differing components of change, also have implications for the potentially auto-correlative properties of some population oriented disability factors. For example, on the surface it could appear that increasing proportions of elderly and declining proportions of young are two sides of the same coin. In such a case it would seem appropriate that only one should be the basis of financial assistance. However the differing dynamics of population change in each region and sub-region, will, in some cases, fundamentally challenge this 'rule'.

The application of these arguments to the vast range of activities and responsibilities of Local Government has not been attempted. The paper was prompted by a slowly emerging awareness of an emerging issue, and much research is needed to ascertain the extent of its broader implications. In the interim, Local Government age structures are moving steadily towards the outcomes foreshadowed in this paper, and this tide is already breaking on their shores. The paper is offered as a background on which to deliberate its likely effects.

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