Ageing paranoia, its fictional basis and all too real costs.

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Over the past decade, demographic ageing has become a preoccupation of governments and social scientists globally. It is presented as a threat to prosperity, requiring bold policy measures to moderate and mitigate its impacts. A common response is to boost population growth, through encouragement of larger families and increased immigration quotas. Even among nations whose populations are still growing strongly, and who currently have a small proportion of people over 65 years of age, the fear of ageing has discouraged action to reduce population growth.

At the same time, concerns relating to planetary limits, including food security, water scarcity, loss of natural environments and biodiversity, greenhouse gas emissions and fossil fuel dependence, are becoming ever more acute. Population pressure is the acknowledged driver of all these challenges, but the future projected growth is taken as a fact over which we have no influence. Equally accepted is that this growth will be limited. Most reports refer to nine billion as the maximum number to be accommodated, although this estimate is long out of date.

These contrasting agenda reveal a glaring inconsistency. Population growth is readily accepted as a policy choice, when arguments are made for stimulating it. It is presented as inescapable fate when dealing with problems that would be lessened by reducing it.

The importance of our population choice

It is evident is that global population will not stabilise, unless individual nations choose to embrace population stabilisation or decline. Their recent actions to prevent demographic 'stagnation' have had global effect. Funding and political support for family planning programs has dwindled, while birth rates in many developed countries and some developing countries have risen, with government encouragement. The combined effect has seen global fertility reduction stall, the annual increase in global population creep upward since 2000, and the United Nations' projections repeatedly revised upward. The current medium projection would climb beyond 11 billion early next century.

Yet the conditions required for the medium projection are still not met. Announcing the new UN projections, a refreshingly direct John Wilmoth, head of the UN Population Division, stressed that the medium fertility projection assumed steady fertility decline, and 'is thus an expression of what ***should be possible***….[It] could require additional substantial efforts to ***make it possible***.' (Wilmoth 2013, emphasis in the original).

Suffice to say that, without 'additional substantial efforts', the global population is on course for well over 11 billion. Few analysts of food security consider that we are likely to be able to feed such a number. The more likely outcome is that planetary limits will cause the death rate to climb.

The population projections are blind to such limits, as they only project past trends which have seen life expectancy steadily rise. By choosing to treat these projections as fact, rather than treating future population as a choice, we are likely choosing widespread death by famine or conflict triggered by food prices (as in Egypt), water scarcity (as in Syria) or mass movement of people (as in Central African Republic).

Nations fear ageing more than overpopulation

It would appear from the UN's regular surveys of national population policy that concern about demographic ageing is the primary excuse for revised attitudes to population growth (United Nations Population Division 2011).

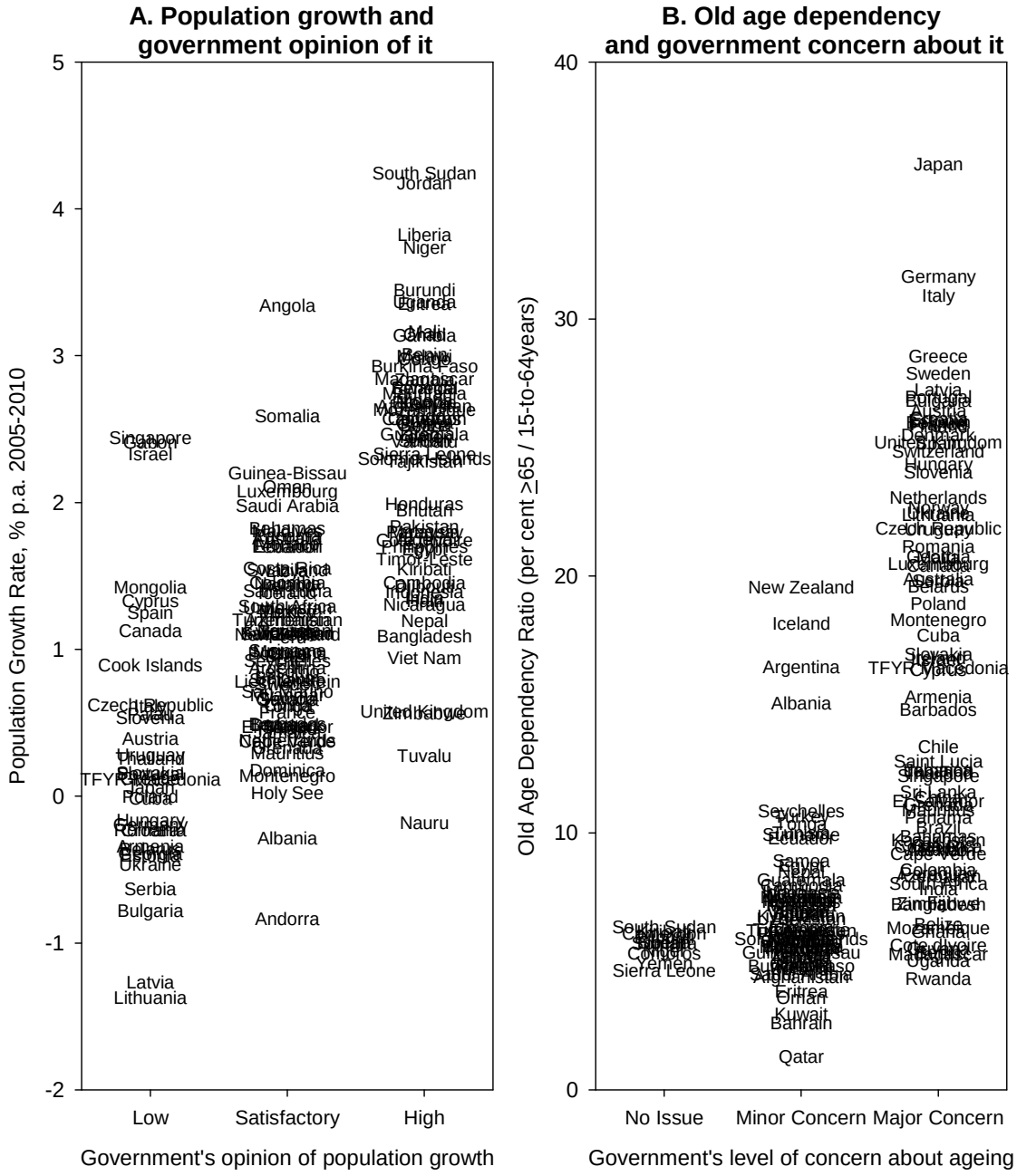

Figure 1. Views of national governments on: A. their rate of population growth, and B. their concern about demographic ageing, compared with their actual population growth and old-age dependency. Overlapping country names are not intended to be legible, but to depict distribution of views. From United Nations Population Division (2011).

It is particularly concerning to see developing countries express concern about ageing, despite these nations having no distinct retirement age and strong workforce participation of older citizens (O'Neill *et al.* 2010). A Myanmar NGO recently claimed 'by 2050 there will be a serious ageing problem in Myanmar with no economically active group to run the country.' Such hyperboles are regularly reported with no attempt at verification. None balance the ageing challenge with gratitude for the economic stimulus and food security their rapid population stabilisation enables, nor herald the peaking of their population with enthusiasm.

It is still possible to achieve a peak global population under nine billion, if remaining high-fertility countries follow the example set by strong family planning nations like Thailand, Iran or the Maldives, and if low-fertility countries end pro-natalist policies and embrace their population peak and decline. The advantages of this course for global security are clear. The remainder of this chapter will examine the claimed costs, in terms of more rapid demographic ageing.

Ageing is an inevitable but self-limiting feature of the demographic transition

The demographic transition, from high death rates and birth rates to low death rates and birth rates, is the hallmark achievement of the modern era. Better quality of life both generates it and is enabled by it. Completion of the transition to restore population stability is an absolute requirement of sustainable development. Prolonging an intermediate state, with low death rates but high birth rates, not only leads to an unsustainable population in the longer term, but in the present imposes a burden of population growth *rate* which severely hampers economic development (O'Sullivan 2012).

A direct consequence of demographic transition is a change in the ratios of people of different age. As more people live to an older age, a higher proportion of the population will be old. As people have fewer children, a smaller proportion of the total population will be children. The typical charts used by demographers, which stack the age cohorts vertically with the youngest at the bottom, move from a pyramid shape to a column with a tapered top. If the birth rate is below replacement or significant adult immigration occurs, the base may be narrower than the mid sections, forming a 'coffin' shape. The negative connotations of the word 'coffin' have been used to present this demographic profile as something to be feared. This fear is baseless.

The proportion of people over 65 remains small in the early phases of the demographic transition, as it is young people who benefit most from the initial mortality reduction. If and when the birth rate drops, the proportion in the middle years ('working age') swells. This window of time, in which an abnormally large proportion of people are of working age, is referred to as the 'demographic dividend' of reduced fertility, as it may stimulate economic development if those extra adults are productively employed. Inevitably, however, the increase in the proportion of people over 65 begins to exceed the decrease in children, so that the proportion of working age declines again.

Most developed countries are well into this phase. Australia, USA and Canada, due to sustained population growth, are only beginning to leave the nadir of dependency.

But leave it they will, regardless of future population growth rates. Figure 2 depicts the change in old-age dependency and proportion of working age for Australia since 1960, and to 2050 using two projections. One assumes high immigration and population growth, similar to that assumed in the 2010 Intergenerational Report (Australian Treasury 2010). The second

assumes no net immigration, generating a total population similar to that assumed in the first Intergenerational Report (Australian Treasury 2002), although the latter combined some immigration with a lower fertility rate.

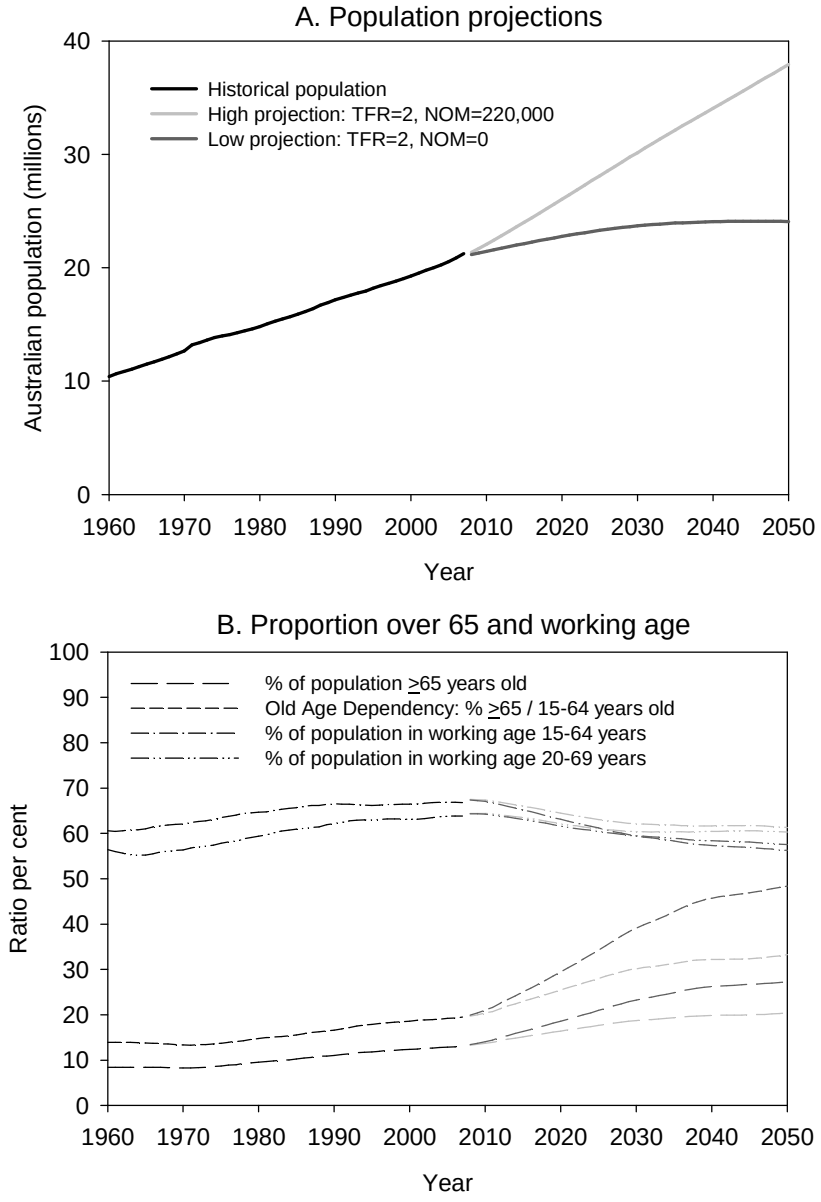

Figure 2. A. Australia's population since 1960 (black), and projected to 2050 under either high growth (light grey) or a stabilising scenario (dark grey). TFR = total fertility rate, NOM = net overseas migration. B. For each series, the proportion of people over 65, old-age dependency ratio and proportion of working age, defined both as 15–64 years and 20–69 years. Data from Australian Bureau of Statistics, Population Projections – Australia 2006–2100, Catalogue No. 3222.0, series 5 and 59.

Figure 2 illustrates how the conventional measure of 'old-age dependency' exaggerates ageing. Instead of dividing the number over 65 by the whole population, it is divided by the smaller number of working age people. Meanwhile, the proportion of children declines, lessening the change in proportion of working age. Although 'working age' is traditionally defined as 15–64 years, the UN and developed countries accept that 20–69 better reflects modern reality. Using this standard, the proportion of working age only returns to the level experienced in the 1960s, with little difference between the two projections.

Importantly, the changes do not continue indefinitely, but level off. Depending on longevity gains, we might expect between 25% and 28% of people to be over 65 in a stable, healthy population. If the population were allowed to contract at 1% per annum (achievable with about 1.5 children per woman and no net migration) around a third of people may be over 65, assuming life expectancy under 90 years. Having half the population over 65, although often claimed in the media as imminent, is highly unlikely. This implies a life expectancy of 130 years (twice 65), or an extremely low birth rate without immigration, or a significant exodus of younger people, such as some eastern European communities have recently experienced.

The '3Ps': GDP = Population x Participation x Productivity

Population growth as a remedy for ageing was first given prominence in Australian political discourse following Treasury's first Intergenerational Report in 2002 (Australian Treasury 2002). In the subsequent years, the Howard government implemented strong measures to boost population growth, through a 'baby bonus' payment and substantial increases in immigration quotas and temporary work visas. The second Intergenerational Report (Australian Treasury, 2007) was the opportunity to sell this strategy. It adopted the catchphrase '3Ps', stating that GDP is a product of population, participation and productivity. Population being the easiest of these factors for governments to influence, it was the focus of the greatest shifts in program settings.

This move was at odds with the Productivity Commission (1996), who warned that high immigration was likely to make the average Australian worse off. While per capita GDP might be marginally increased under their assumptions, the beneficiaries would be employers and the immigrants themselves, not Australian wage earners or retirees who would experience depressed wages and increased living costs. The Productivity Commission acknowledged that its analysis did not include impacts on environmental services and amenity. Also missing from their estimation was the cost of infrastructure to provide for additional people.

The 3Ps are built on a set of very problematic assumptions:

1. *Natural resources don't matter*. Diluting, degrading and depleting them will not affect productivity, wealth or wellbeing, because they are not in the model.
2. *Job seekers create jobs*. The size of the economy will be proportional to the number of working age people. Just add people, and the market will do the rest.
3. *The three factors are independent*. If the formula is interpreted to advocate boosting any one of these factors, it must be assumed that boosting it will not be to the detriment of the others. Hence it assumes that population growth will not reduce participation (through competition for jobs) or productivity (through competition for resources and markets).
4. *Growth rate costs nothing*. The infrastructure, equipment and professional personnel that added people need will be created without penalty. The Intergenerational Reports contain no reference to these costs, although they far outweigh the extent to which population growth can moderate ageing-related costs (O'Sullivan 2012).

Although it is universally acknowledged that wealth is measured *per capita*, the 3Ps ignores the fact that additional people add equally to the numerator and denominator. Hence population growth can only improve wellbeing if it increases participation or productivity, or improves wealth distribution. Interdependence of the factors is thus assumed, even though the formula implies their independence. We will examine the evidence for these relationships.

Demand and supply of labour

This brings us to analysis of the second assumption, that job seekers create jobs. The reasoning given is that people of different ages have different levels of participation in the workforce, and by increasing the proportion in the key working age cohorts, we can increase the amount of work done and thereby the wealth of the nation and the revenue of government.

Both Treasury, in the intergenerational reports, and the Productivity Commission, in its 2005 report 'Economic Implications for an Ageing Australia' assume that the proportion of people working in any age group will be unaffected by the number of people looking for work. The Productivity Commission justifies this assumption by stating 'Unemployed people and people outside the labour force are generally different from the employed in skill, motivation and aptitude.' In its recently published report 'An Ageing Australia', the Productivity Commission (2013) reaffirms its belief that 'population ageing reduces aggregate participation rates' despite noting the current trends of increasing participation of older people in the workforce, and increasing educational attainment (associated with more sustained workforce participation).

This conclusion frames the context of the government's strategy. It states that the workforce is constrained by the supply of workers, thereby assuming that both capital and consumer demand are abundant to provide work for all who offer themselves. It is the basis of the 'blame the victim' approach to unemployment, welfare-to-work programs and job-readiness training.

Yet this fundamental assumption remains untested. In relation to the Productivity Commission's justification, it would be surprising indeed if employers showed no selectivity in terms of skills, motivation and aptitude, leaving those of equal employability on the shelf.

The real world experiment

The easiest way to test whether labour supply is limiting economic activity would be to compare levels of employment in comparable countries with differing levels of ageing. If a falling proportion of people of 'working age' correlates with a falling proportion of the total population in employment, this would support the conclusion that the supply of workers is a limiting factor. If there is no such trend, it implies that the supply of jobs is limiting.

Luckily we have just such an experiment playing out in the real world. Japan and Germany have almost twice the old-age dependency ratios as Australia, USA and Canada – the most youthful developed nations. Other comparably wealthy countries lie between.

Figure 3 A shows that the proportion of the total population that is employed varies little among these nations, and does not fall with demographic ageing. If we further take account of the different proportion of part-time work in each country, the number of full-time equivalent jobs per head of population is even more uniform. Spijker and MacInnes (2013) further note that the proportion of the total UK population employed has barely changed in the past 60 years, although 'old-age dependency' has increased by half. The robustness of the proportion of people employed across demographically different nations suggests that employment is more limited by demand for labour than by its supply.

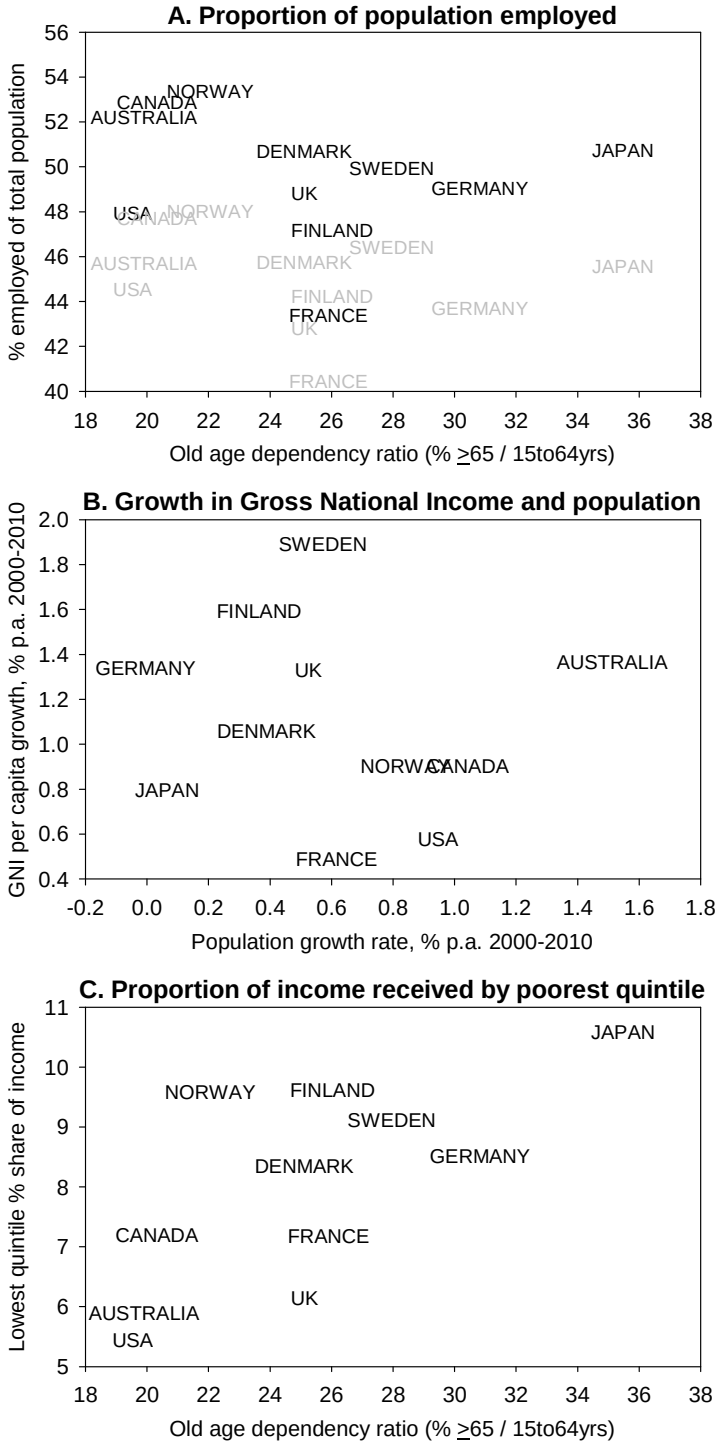

Figure 3. The Real World experiment: A. The proportion of total population employed (black), and the proportion of full-time-equivalent employment (grey), compared with the old-age dependency ratio for a range of wealthy countries. B. The relationship between growth in gross national income per capita and population growth rate, for the same nations. C. The relationship between old-age dependency and income share of the poorest quintile of the population. Data from World Bank (2013).

The relationship between population growth rate and growth in gross national income per capita shows equally little trend (Figure 3 B). This offers no evidence that population growth improves productivity.

Perhaps more important than average income per capita, income inequality is a crucial determinant of societal well-being. A widely acclaimed study by Wilkinson and Pickett (2009) demonstrated that income inequality in developed nations is strongly correlated with worse physical health, mental health, drug abuse, education, imprisonment, obesity, social mobility, trust and community life, violence, teenage pregnancies, and child well-being. Figure 3 C shows a clear trend: the most youthful nations have the poorest poor. A similar trend is found using the GINI index of income inequality.

This is to be expected with an oversupplied labour market, and provides additional evidence of the extent of labour oversupply. As the Productivity Commission (2011, p. 7) stated, 'Because immigration makes labour more abundant relative to the existing stock of capital and land, it tends to increase the returns to the latter at the expense of labour.' In addition to depressed wages, youthful societies suffer elevated unemployment and underemployment, and high cost of living due to high housing and utility costs and poor infrastructure provision.

How will we afford the pensions?

If the proportion of people without work does not increase with ageing, the burden of social transfers is unlikely to increase much either. Extra old-age pensions would replace unemployment benefits or disability pensions along with a proportion of family payments, with the benefit that fewer working-age people are excluded from the workforce.

Many nations have already responded to ageing by scheduling increases in the pension age. However, even this measure is unnecessary if labour markets are oversupplied. Unless the proportion of people employed actually begins to shrink, forcing people to delay retirement only prevents a younger person from getting a job. Even if employment were to shrink as a result of ageing, this may represent an increase in productivity, age-specific income and societal wellbeing as the least necessary and rewarding jobs are shed.

Health care is a growth industry

Most increase in health costs is due to changing treatment technologies and expectations (Productivity Commission, 2013). An ageing population certainly has an increasing need for health care, but it accounts for little of the recent escalation in health spending.

The cost of health care does not increase in proportion to the number of retirees. Zweifel et al. (2004) demonstrated that most cost is related to proximity to death, rather than to age. Sanderson and Sherbov (2010) found that the proportion of people with less than 15 years of life expectancy is projected to increase at about half the rate of old-age dependency. The proportion of adults with disability increases even less (Figure 4).

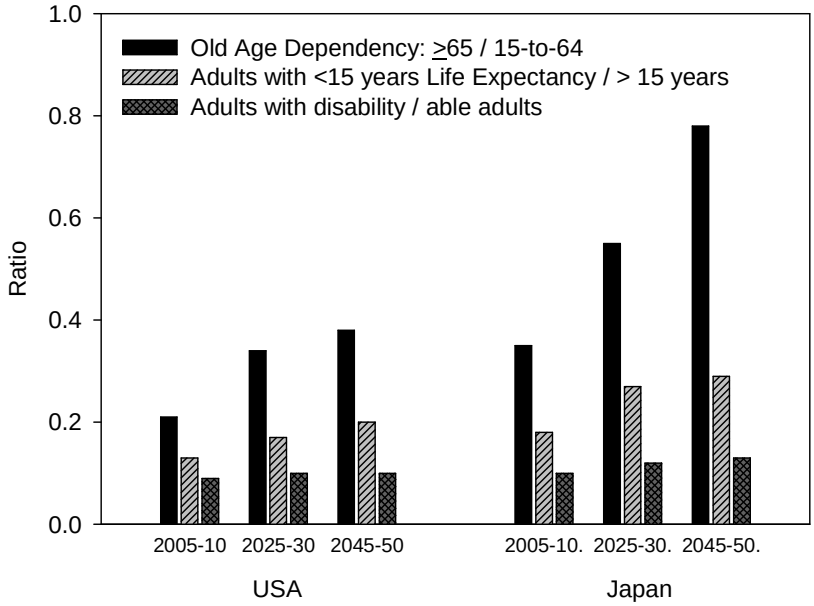

Figure 4. Alternative measures of ageing, comparing the change in ratio of the adult population aged 65 and over to that having a life expectancy less than 15 years, and the ratio of adults having a disability. While 'old-age dependency' will increase rapidly in coming decades, the proximity to death (relevant to health care burden) and disability (relevant to residential care burden) increase to a far smaller extent. Data from Sanderson and Sherbov (2010).

However, death rate will increase with ageing, and with it the total health care bill. Our current historically low death rate is another temporary anomaly of the demographic transition. Future death rates will still be lower than at most former times, since longevity is increased. In a stable population, the percentage of people who die each year would be 100 divided by the life expectancy at birth. We can expect the death rate to roughly double to around 1.15% per year, as we complete the demographic transition. We should therefore plan to roughly double the number of hospital beds per capita.

There is an obvious cost associated with increasing capacity of hospitals and medical centres. However, the rate of hospital construction will be lower if population is allowed to stabilise than if it is growing strongly. A stabilising but ageing Australia will need around 1480 additional hospital beds per year to match capacity to the death rate. However, if our population grows at 1.4% per annum, we would need 1660 new beds per year. The extra 180 beds would cost around half a billion dollars per year.

Double standards abound in the economic treatment of ageing and population growth. Growth in health and aged care sectors is presented in public discourse as a burden to society, while construction of houses and infrastructure to cater for population growth is presented as valuable economic stimulus. Construction doesn't improve the quality of life of existing residents who are already housed. Indeed, the extra public infrastructure costs them dearly through taxes, utility charges, rates and tolls, and the extra demand for land increases the mortgage and rent burden for all.

In many ways, growth in the health industry is preferable to growth in the construction industry. It provides regular, secure and safe work which can be sustained until retirement. Much work in construction is short term and of a physical nature which forces early retirement or career shift of many tradespeople. Health services improve the quality of life for existing residents, without destroying natural amenity. Far more energy and non-renewable

resources are consumed per dollar spent in the construction sector. Thus a shift in economic contribution from construction to health industries would lower the environmental impact of the economy.

Depopulation dividends

Those countries which have stabilised and become old are beginning to realise that the benefits may outweigh the negatives.

Kluge *et al.* (2013) proposed that an older and shrinking population may be:

- *Smarter*: a greater proportion of people with higher education and experience.
- *Cleaner*: fewer greenhouse gases, as older people have lower consumption and there would be fewer people in total.
- *Richer*: inheritance would be concentrated to fewer recipients, rather than dissipated among many.
- *Healthier*: a greater proportion of life spent in wellness.
- *Happier*: leisure would constitute a greater proportion of the life cycle. The stresses of job insecurity and ever-increasing congestion and cost of living would also be alleviated.

When these benefits are weighed against the modest or unsubstantiated costs of ageing, it is difficult to see why nations are choosing to sustain population growth to avert ageing.

The ageing crisis we are choosing

By far the greatest threats to economic security for the aged are housing inflation and the casualisation of work. These products of excessive population growth prevent the current generation of young adults from saving for retirement. A large proportion of lifetime earnings will be spent paying a mortgage, unless they remain renters suffering ever escalating costs of housing. The latter in particular will face a precarious retirement. The increasing proportion of casual and part time work limits superannuation and access to credit. It parallels a shift in the burden of job training from employers to employees, with an ever greater investment needed to gain qualifications, which are often less necessary for performing the job than for securing it. The frequency with which people change jobs has also increased, with many experiencing multiple periods of unemployment and costly location moves, eating into savings.

This is a generational time-bomb imposed by current population growth.

In contrast, in stable populations like Germany, people retire with considerable savings, have modest living costs and give more to the next generation than they receive from them. Undiluted inheritance provides significant economic security for each new generation. Public investment steadily increases the standard of infrastructure, once relieved of the burden of expanding its capacity. Retirees' patronage of the arts, local tourism and recreational facilities increases the availability of these diversions for working-age people, whose own less frequent patronage would be insufficient to support the density and variety on offer. This vibrancy of a stable population is inclusive and focused on quality of experience. In contrast, the vibrancy so often associated with a rapidly growing population is characterised by crowded market places with more sellers than buyers, where recreation is something reserved for elites and foreign tourists.

Just another Millennium Bug?

In the final years of the twentieth century, fear spread that the turn of the millennium would throw computer date systems into confusion, bringing global financial transactions and other services to a crashing halt. Costly measures were taken to avert this danger, despite more considered advice that the fears were largely unfounded. Like the Millennium Bug, the trigger conditions for the 'ageing crisis' are inevitably reached. Like the Millennium Bug, the dire consequences simply fail to materialise. But where the measures taken to avoid the Millennium Bug were harmless, those taken to avoid ageing are daily diminishing the global prospects of achieving food security, climate stability and an end to extreme poverty.

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