



Australian Government
Productivity Commission

A 'Sustainable' Population? — Key Policy Issues

Roundtable Proceedings

Canberra, 21-22 March 2011



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Foreword

The Productivity Commission's 2011 policy roundtable, held at Old Parliament House in Canberra on 21-22 March, examined the topic *A 'Sustainable' Population? — Key Policy Issues*. Participants included government officials, academics, consultants and representatives of non-government organisations.

Population growth has been the subject of much public discussion in recent times. However, widespread misconceptions about the pace, characteristics and implications of population growth means that much of this debate has not been as well informed by the facts as the topic deserves. To enhance public understanding, in December 2010 the Commission released a Research Paper *Population and Migration: Understanding the Numbers*, which describes Australia's main demographic trends and what lies behind them.

The Commission's 2011 policy roundtable aimed to shed light on the potential tensions between the various dimensions of 'sustainability' and projected population growth, and assess the implications for economic growth and community wellbeing. The proceedings are being published to enable access by a wider audience to the information and insights that emerged. The volume includes the papers presented by the speakers, responses by discussants, and summaries of the key points emerging from the roundtable discussions.

The Commission is grateful to all the speakers and other participants for their valuable contributions to the roundtable, reflected in these proceedings. Thanks are also due to Patrick Jomini, Alex Maevsky and other Commission staff who arranged the event and assisted in the preparation of the background paper.

Gary Banks AO
Chairman

July 2011

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1 Introduction

Gary Banks

Chairman, Productivity Commission

The Productivity Commission's Roundtables, held once a year at Old Parliament House, are an annual series devoted to discussion of important contemporary policy issues among key figures in the 'policy space'. The reasons for choosing this year's topic — on population policy issues — will be evident, I'm sure, to anyone who witnessed the lead-up to the Federal Election last year. The nature of the public 'debate' at that time has left a legacy for policy development today that can be likened to the old Irish joke about the traveller in the wilds of County Cork asking a local how to get to Dublin. Answer: 'I wouldn't start from here!'

Confusion and contention have reigned supreme. We have experienced a popular backlash triggered by the confluence of the escalation in boat arrivals, IGR(3)'s 36 million population projection, and Prime Minister Rudd's declaration about the desirability of a 'Big Australia' — all seemingly out of the blue. These drivers were further compounded by claim and counter claim about the merits or otherwise of immigration, and of different population scenarios. The public has heard various eminent Australians, including former political leaders and 'Australians of the Year', advocating quite divergent positions (for example, proposing population targets ranging from 15 to 100 million!).

A 'sustainable' Australia?

Coinciding with the election, this led all sides of politics to repudiate the Big Australia notion in favour of a 'sustainable' Australia. This has been welcomed by many in the community, but it has also been criticised for the vagueness of the concept, with some concerns that it might be synonymous with a *small* Australia.

Depending on how the sustainability objective is operationalised, however, this shift can be seen as a positive development, given the context just described. It keeps the 'wolves from the door' politically, while potentially also keeping a range of policy options and outcomes in play. Handled right, it could presage a more coordinated,

transparent and informed approach to policy development, rather than ad hoc, opaque decision-making that is more easily prey to the influence of pressure groups and that can yield erratic outcomes.

But this leaves us with the \$64 question. ‘Sustainability’, post-Brundtland, has become a broad church, with different interpretations of its principles or strictures (from ‘weak’ to ‘strong’) and, therefore, different implications for public policy. However, at bottom, most would agree that it is about following a policy path that promotes ongoing improvements in societal wellbeing, with a destination that no future generation would regret, and for which, along the way, the policy benefits (broadly conceived) exceed the costs.

Another positive in using a ‘sustainability’ framework for policy is explicit recognition that the advancement of society involves more than economic considerations — that there are also social and environmental dimensions. Moreover, it suggests that there are interconnections between these and, at least in more benign interpretations of the concept, that tradeoffs among them will sometimes be called for.

Pursuit of a ‘sustainable’ Australia, therefore, need not rule out a ‘big’ (or at least substantially bigger) Australia, provided the appropriate tests are satisfied.

There are two further important implications of this shift to a sustainability paradigm in relation to population.

- First, it arguably requires us to give more attention to the *rate* of change than to some distant target *level*. That is, it puts the focus on what might best be called ‘absorption capacity’ (a dynamic concept) rather than static notions of ‘carrying capacity’. It seems virtually impossible, in any case, to predict outcomes two or three decades into the future (as the 8 million disparity between the population projections in the last two Intergenerational Reports, just three years’ apart, clearly illustrates).
- Second, a sustainability perspective requires that attention be paid not only to population pressures (the *demand* side), but also to the factors that determine how well these can be accommodated within our country (the *supply* side) — recognising that these supply-side factors (institutions, regulations, public administration) are amenable to policy action too, and possibly more so.

A final implication, related to all these, is that a shift to sustainability calls for a deliberative and consultative approach to policy formulation: one that can secure well-informed political judgments, beyond the (facile) input of focus groups and ‘Hollow Men’, in what could become a more benign or at least more neutral political environment for policy decision-making. This is important, because,

notwithstanding claims to the contrary, having a ‘policy’ is unavoidable. The only real choice is between one that effectively emerges by default — conceived in ad hocery or stealth — and one that is explicit and has been properly thought through, and is therefore explicable to the electorate.

That governments have not chosen this path (at least since the 1970s) tells us that it may not be an easy path to take – and even that it may be a politically hazardous one. But, as has been observed, so too is policy by default or reactive decision-making. In this area, as in others, good policy should also prove to be good *politics*; and good *process* is central to good policy.

A policy framework

Taken broadly, there are three core elements in an effective policy-development process:

- clarifying the policy objectives
- understanding the ‘forces at work’ within our economy and society, and thus the nature of ‘the problem’ and
- assessing the pros and cons of different options for dealing with these (so as to best meet the objectives).

The first of these is of course the most fundamental. The origin of many failed policies and programs in the past has been a failure to define the objective (and therefore, to understand the problem). Multiple objectives inevitably emerge in an area such as population policy. In practice, however, these could all be treated as subordinate to what has to be the overarching goal: namely, maximising the wellbeing of the community over time (and, invoking ‘sustainability’, across generations).

Community wellbeing has many dimensions. It includes measurable economic aspects, but also other determinants of quality of life, such as environmental and urban amenity and social cohesion. It is also important to note that the most relevant ‘community’ for national policy purposes at any point in time will generally be the *existing* population (and their descendants). Also, it should be the community as a *whole*, not just particular sub-groups (or those with the politically loudest voices).

There has already been considerable debate about whether population policy should focus on population itself (as part of a ‘proactive’ stance) or on making the host environment more accommodating (‘reactive’ or adaptive policy). It seems evident that it would need to address *both* sides of the (sustainability) equation.

The external forces

Looking at the *population* side first, a moment's reflection tells us that immigration is the only component of population growth that is really amenable to policy action.

'Native' population growth has two drivers — fertility and mortality. Experience is clear that it is very hard for governments to increase the former, and I'm sure that none of us would want to increase the *latter*!

It's true that Australia has experienced a surge recently in the birthrate (from 1.7 to 1.9 births per woman). But this appears to have been largely attributable to a rise caused by previously postponed decisions to have children — rather than a permanent increase. (Note that even the recent more elevated rate is still below what would be needed for population replacement).

Population growth has become increasingly reliant on immigration. It accounts for almost 60 per cent of population growth currently (despite our resurgent fertility and last year's decline in net migration). And it is projected to account for *all* of our population growth by the middle of the century (once the influence of the Baby Boomer generation has receded).

It has been said that governments have little room to move when it comes to immigration levels; that these are largely 'endogenous' — a reflection mainly of domestic economic and, particularly, labour market conditions. There is some truth in this, but only up to a point. It is true that the potential 'supply' of immigrants depends on the willingness of people to leave their countries, and the relative attractiveness of Australia as a place to live. It is also true that governments do not set caps on the numbers of temporary immigrants. Most of Australia's immigration in recent years has been of a temporary nature (although many of those immigrants subsequently used temporary visas as a stepping stone to permanent residence). Ultimately, however, it is government policy that determines the outcomes for prospective immigrants — it is the government that sets the criteria to be satisfied by applicants and that imposes caps on some categories (such as permanent residency visas).

Impacts of immigration

Turning to the impacts of immigration, while there are labour market benefits, these can be (and often have been?) overstated, especially from the perspective of the potential to enhance the local population's welfare. More people translates into more jobs, more output, more income and more consumption. A bigger domestic market and a bigger domestic economy. But, as noted, the real question for a

(sustainable) policy is whether existing citizens (and their descendents) will be better off as a result.

Ultimately (in the longer run) the impact of immigration on per capita incomes of the existing population depends on a combination of many forces. These include: the effects on labour force participation and productivity; whether there are any economies (or diseconomies) of scale in production and consumption; how the returns to Australia's natural resources are distributed; the effect on the government's net fiscal position; and how any fiscal gains or losses are distributed. It also depends on whether there are any distortions in the domestic economy that prevent an efficient adjustment to the changing size and structure of the population (to which I will return).

In a study for the Government in 2006, the Productivity Commission modelled a 50 per cent increase in the skilled migration program (an increase that eventuated in subsequent years.) That substantial increase in skilled migration was projected to yield an estimated gain in annual *per capita* income of just 0.7 per cent (\$320) and only after 20 years. It was swamped by other, domestic drivers of productivity growth. Moreover, most of the aggregate gain accrued to migrants themselves — the average incomes of the population existing in 'year zero' actually declined slightly.

The finding that the effects are generally small is similar to that of previous studies, both here and overseas. There are two, commonsense, reasons for it:

- First, the 'flow' of (extra) migrants is small relative to the 'stock' of the existing population and labour force.
- Second, the forces that determine the effects on the incomes of the existing population often offset each other, and some of the effects wash out in the long run.

It is also a fallacy that higher immigration counteracts population ageing. Beyond an annual immigration level of around 100 000 people, the demographic benefits have been shown to diminish greatly, with migrants impacting much more on the *size* of the population than on its age *structure*. The main reason is that migrants age too! We would need to bring in increasingly more of them to 'backfill' the age structure over time. Indeed, the Commission calculated that to *preserve* the current age profile of the population, the immigration-to-population ratio would need to rise to three per cent (triple its peak of 2008-9). This would make Australia a population 'super-power' of 100+ million people by mid-century!

Modelling doesn't tell us the whole story of course. Models can only be constructs of the economy and can't encompass everything that matters. Ours left out scale

effects, externalities and dynamic influences — all of which can matter for economic outcomes — as well as social and environmental impacts (though their potential was acknowledged).

For example, a key influence on the actual productivity/participation outcomes for migrants will be their work ethic. Migrants forsake much culturally and socially to come here; their ambition is typically to achieve a higher standard of living, and hard work is part of that. Moreover they typically want a better life for their *children* and most see education as crucial. Indeed the children of migrants often realise their parents' ambitions for them, with statistical evidence demonstrating their above-average educational and labour market outcomes.

This also suggests that the impacts of migration should properly be considered over long time periods. For example, while concerns are often expressed about migrants being greater beneficiaries of the 'welfare state', the reverse is generally the case once the impacts are assessed over their lifetimes, let alone those of their children.

This is also relevant to the *social* impacts of migration. The first wave of any ethnic group generally has a tougher time and faces more community resistance than those who come later and, especially, their Australian-born descendants. (Think of the experience with the Italians, Greeks and Vietnamese.) That said, not all cultures and not all types of migrants are equally receptive to integration or assimilation within the host society, and many countries are increasingly being forced to confront the adverse consequences of this for the functioning of their societies.

The domestic forces

Turning to the *domestic* side of population policy, the first point to make is that population size *per se* is neither a necessary nor sufficient condition for economic prosperity. We can all think of poor countries with large populations and rich countries with small populations (as well as the reverse). The number of people is less important than how well they are utilised in an economy and society.

The potential economic benefits to be derived from Australia's post-war population boom, for example, were partly squandered by too many people working in highly protected and high cost manufacturing industries under rigid, centralised workplace 'rules' that lowered their productivity and participation. As a result, per capita income growth in this period was much lower than it could have been.

The domestic policy environment for a growing population in Australia has been much improved following the reforms of the 1980s and 1990s. But there is still resource misallocation and waste from poor regulation, unproductive industry

assistance and deficiencies in how we go about infrastructure investment and pricing. Reforms in these areas would yield a ‘win-win’ for incumbents and newcomers alike. Equally, going backwards on reform — re-introducing rigidities or anti-competitive regulation — could yield a *lose-lose* result. This is especially relevant to the labour market, which is the main conduit for (economic) benefit from migration.

Equally, the impacts of population/migration on Australia’s resources and its environment depend not only on the numbers of people, but also on where they choose to locate, and the ‘rules’ and price signals that influence how they behave in their daily lives. Where natural resources are under-priced (as water generally has been, for example) the extra demand pressures from a larger population will obviously exacerbate shortages or depletion rates, and compound social losses from misallocation. The policy prescription? *Price resources properly!*

The same applies to environmental assets such as clean air, open space and ‘amenity’. Pricing can be trickier for these, but there remain untapped opportunities, such as for road congestion within our capital cities.

An important point to keep in mind, however, is that even such ‘efficient’ responses do not guarantee that the welfare of the existing population can be maintained or improved. (In fact, the wellbeing of incumbents may decline as a consequence of imposing a price on a previously unpriced resource.)

At any rate, pricing can only do so much, and regulation will generally have a key role to play. But our regulatory legacy leaves much to be desired in terms of cost-effectiveness.

The low density of our capital cities is often seen as a ‘problem’. It is, in large part, merely the legacy of regulation and planning decisions of the past. This makes it hard to change quickly. But it also raises questions as to how much change is really desirable from a social welfare perspective.

The pricing of government services is also relevant to the net benefits for the local population from immigration. Access of migrants to ‘free services’ can be resented by locals and become a source of societal tension. Greater reliance on user charges — where justified in its own right — would limit such distributional effects and encourage migrant participation in the workforce. (The waiting period of two years for most migrants to be able to access unemployment benefits reflects this.)

Implications

In sum, much can be done in domestic policy and structural reform that would enhance the benefits and reduce the costs of immigration from the perspective of the Australian population as a whole. This would also raise the absorptive capacity of our economy/society, and enable a higher rate of population growth to be ‘sustainable’.

Achieving a sustainable population, therefore, demands attention to both sides of the equation. Working out the best combination of policy actions will be challenging, especially given that policy responsibilities cross jurisdictions in our federal system. Good process will be essential to understanding the tradeoffs and to achieving broad public support, or at least acceptance, of the policy decisions themselves. And evidence and analysis have an important contribution to make.

With all this in mind, and in the context of the Population Taskforce process established by the Government, this Roundtable provides an opportunity to discuss some of the key issues and thereby to promote a better understanding of the elements of good public policy in this area.

We are fortunate to have attracted a group of people who have expert knowledge and are well placed not only to participate in discussion here, but to carry the insights forward. We are especially grateful to our eminent international participants, Professors Barry Chiswick from George Washington University and Richard Arnott from the University of California, for venturing across the globe to participate in this Roundtable in Canberra.

2 The determinants of Australia's future demography

Peter McDonald

Australian National University

2.1 Uncertainty and the appropriate future time reference

The proximate or immediate determinants of Australia's demographic future are its present population and its age structure, future births and deaths and future immigration and emigration. While the present population and its age structure are given, the future pathways of the other proximate determinants are by no means certain because they will be influenced by future economic, social and environmental factors that are inherently unknowable. This is especially the case in the longer term, where the longer term is defined as more than 10 years into the future. For example, how could we predict fertility in the 2040s when the potential mothers of the 2040s are not yet born? Given that net overseas migration is very largely a function of the demand for and supply of labour in Australia, how could we predict migration in the 2040s when we have no idea what labour demand will be at that time?

There is also great controversy in demography as to whether life expectancy will continue rising at an almost constant rate or whether the rate of its rise will slow down considerably. We have little capacity to predict expectation of life in 2050, but any errors that we may make in projecting mortality will primarily affect only the numbers aged 75 years and over, but there the effect is large.

As an example of demographic uncertainty, the National Population Inquiry conducted in the first part of the 1970s did not foresee the ageing of the Australian population that became a central policy issue from the 1980s onwards. This was because the inquiry, which reported in 1975, overestimated future fertility and mortality. Not long after the inquiry had reported, the ageing issue was created by

sharp falls in both fertility and mortality that had not been projected by the inquiry (McDonald and Kippen 1999).

A more recent example is provided by the course of fertility in the past decade. In 2003, both the Department of the Treasury in its *Intergenerational Report* and the Australian Bureau of Statistics (ABS) made projections of Australia's population that assumed that Australia's fertility would continue the trajectory of its fall during the 1990s. Instead, the Australian fertility rate rose sharply after 2003. In the six years from 2004 to 2009, there were 152 000 more births in Australia than had been projected in the 2003 ABS population projections. This error is equivalent to over 250 primary schools, each with 600 students, or 8000–10 000 primary school teachers.

The lesson to be learned from these two examples is that demographic futures can differ from those projected by official agencies even in a relatively short period. In this paper, I argue that better methods for projecting fertility and migration over a decade or so are possible and that Australia should direct resources towards these superior methodologies. However, beyond the next decade, the trends become more speculative, and exponentially so as time progresses. The projected population of Australia in 2050 is effectively a hypothetical number, yet it is this number that has stirred passionate debate in Australia over the past 12 months. Directing such passion at the inherently unknowable has proven to be exceptionally unproductive because it has shifted attention away from careful consideration of the much more predictable population growth in the next decade (to 2020) and the somewhat less predictable growth in the following decade (2020–30).

While it is true that we can predict the percentage of the population that will be aged 65 years and over in 2050 within four or five percentage points of accuracy, we have a long time to plan for ageing by 2050. Ageing by 2050 is the central issue in the Government's *Intergenerational Reports*, but it is not what is exciting the current popular debate about population. The current popular debate, quite correctly, is centred upon the capacity to manage Australia's present population and its population over the next 20 years in terms of the balance between the economy, the environment and lifestyle. Central to the debate are the future demand for labour and the adequacy of infrastructure in Australia.

2.2 Future fertility

The 2003 *Intergenerational Report* focused its attention on the long-term impacts of ageing on the federal budget. It is arguable that the unpredicted short-term impacts arising from the immediate failure to project births accurately will prove to have been much more important. Australia failed to plan for the substantially increased demand for pre-natal and maternity services, child care and early childhood education, and primary schools. These are ‘lumpy’ services that are not easily geared up. There was also a large increase in the family payments line of the budget.

In most advanced countries over the past 50 years, statistical agencies have performed poorly in estimating the future number of births. Australia is not alone. In the short term (ten years or so), this has been due primarily to poor methodology, not to unforeseen social change. In the long term, births are inherently unpredictable.

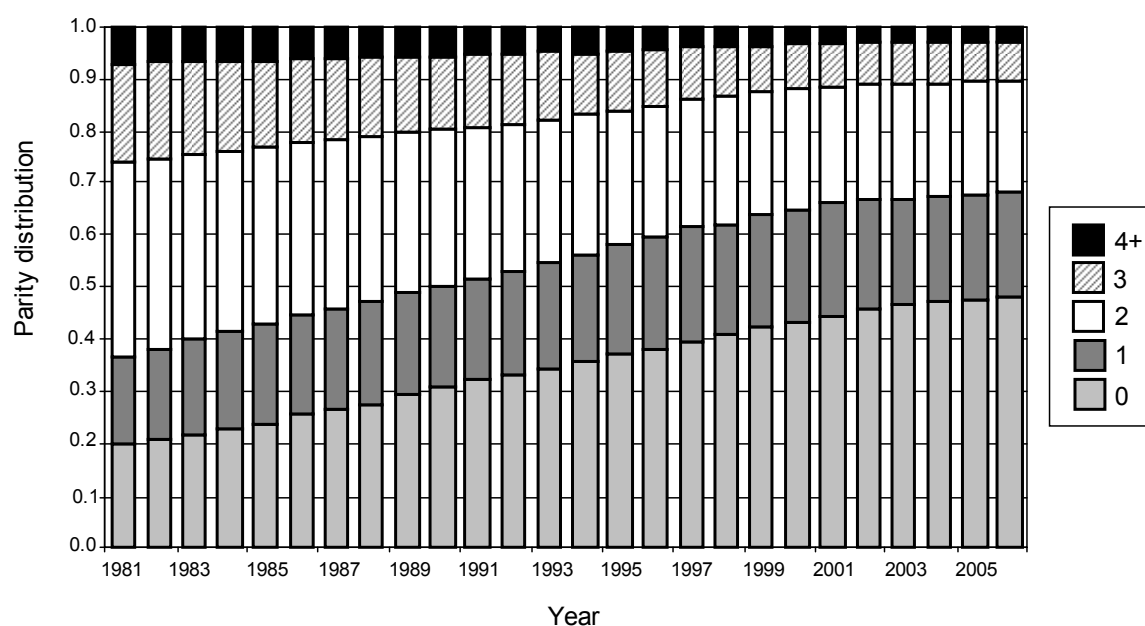
The conventional method used for the projection of births employs just one parameter as a predictor of the likelihood that a woman will give birth: her age. Rates of birth at each age are ‘projected’ into the future, and those projected age-specific rates are then applied to the estimated future numbers of women at each age to calculate the future number of births. Generally, the future level of age-specific birthrates is projected from past trends, or the opinions of experts are obtained. Much of this estimation revolves around (guesstimates of) the future course of a single summary measure, the total fertility rate, which is the sum of the age-specific fertility rates in a given year. The total fertility rate is the conventional ‘headline’ measure of a country’s fertility.

In the long term, the total fertility rate is affected by attitudes and values and changes in the socioeconomic characteristics of the population. In the short term, it can be affected by macro-economic trends, but when fertility is low (as in Australia) those effects are likely to be small. The major influences on annual rates of fertility in the short term are changes in the *timing* of first births (including the effects of past changes) and the flow-on effects to higher order births. Demographers refer to fluctuations in the annual total fertility rate due to birth timing changes as ‘tempo effects’.

Since World War II, annual fertility rates in Australia have been affected by two tempo effects. The first was a shift to much earlier childbearing, which lasted until the early 1970s. This produced the postwar baby boom, and two-thirds of the boom was due to changes in the timing of births, not to increases in the number of births that women were having across their lifetimes. From the mid-1970s the opposite

trend has been in operation, in that women have been having their first births at later and later ages without that having much effect on the number of births that they have across their lifetimes. The percentage of women who had had a first birth by age 27 fell by around 37 percentage points from the 1950 birth cohort to the 1979 birth cohort; however, as yet, the percentage having a first birth by age 45 across birth cohorts from 1950 onwards has fallen by only 4 percentage points. Thus, for many years in Australia, the annual rate of fertility has been low because first births have been delayed. Figure 2.1 shows that, by age 30, the parity distribution of Australian women has stabilised in recent years; that is, the long-term trend towards increasingly older childbearing has ceased.

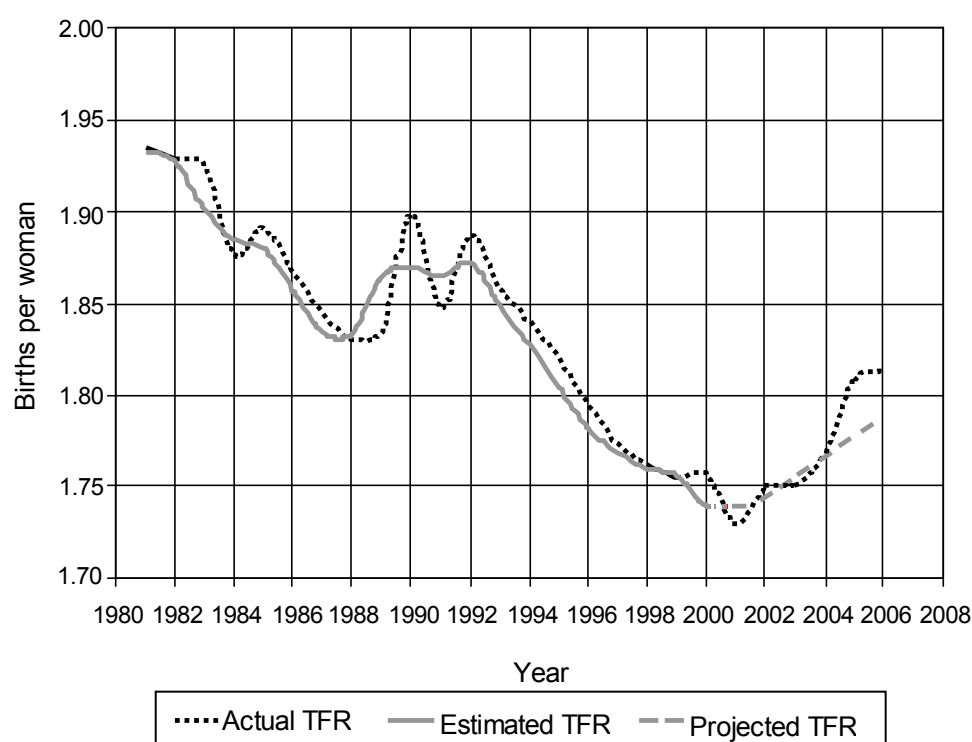
Figure 2.1 The distribution of the number of children ever born to women reaching age 30 in a given year, 1981 to 2006, Australia



All the evidence points to the rise in annual fertility since 2001 being due very largely to the cessation of further delay of first births and to women at older ages having the births that were deferred from earlier times. Was this change in the direction of annual fertility predictable? The answer is that it was predictable using more parameters than are conventionally used. A woman's age is not a great predictor of whether she will give birth in a particular year. However, if she has already had her first birth, her age together with the number of births that she has had already and the time since the previous birth are excellent predictors of the likelihood and timing of her next birth. This is especially the case when the birth rate is low.

Using these observations, McDonald and Kippen (forthcoming) have devised a method to forecast births that simultaneously uses three characteristics of the woman: age, parity and duration since the previous birth. The method also takes account of the structure of the population by those three characteristics. The effectiveness of this method for predicting births beyond the first birth is extremely high. We need then only a method to predict first births. Figure 2.2 demonstrates the effectiveness of this method in a projection of births from 2001 to 2006. The method was successful in projecting a turning point in the trend of the total fertility rate. If this method had been used in 2003, the rise in births that has been experienced would have been predicted.

Figure 2.2 Actual and projected total fertility rates (McDonald-Kippen projection approach)



In policy terms, to the extent that fertility is influenced by policy, Australia should attempt to support a birthrate of around 1.8–1.9 births per woman. All of the 30–40 countries that have birthrates below 1.5 births per woman consider that their birthrates are too low. All report to the United Nations that they prefer to see the rate rise. Many are actively pursuing policies to increase their birthrates. Very low birthrates must be avoided because they lead to large distortions in the age structure of the population and to severe future falls in labour supply. This means that Australia should continue to provide supports to families with children. Calls for more severe income testing of family payments fly in the face of the policy

direction of almost every advanced (OECD) country. With the availability of paid parental leave, abolition or more severe income-testing of the baby bonus would create a huge inequity between mothers eligible for paid parental leave and those who are not.

2.3 Future mortality

A relatively high degree of certainty applies to the projection of deaths in the next 10–20 years. Today, the proportion of people dying in the next two years does not exceed 10 per cent until after age 80. Under age 80, errors in the projected number of deaths will have very little impact on the projected population numbers. Errors in the projected levels of mortality will only affect the population aged 80 and over. There is much more dispute about the future path of mortality in the long term.

2.4 The path of natural increase

The balance of births over deaths, or natural increase, is affected by the level of migration. If the total fertility rate is assumed to remain constant at 1.9 births per woman and mortality follows its current trajectory, in 2019 the level of natural increase would be 85 000 if net migration averages zero from 2009 onwards and 127 000 if net migration over the same period averages 180 000. By 2029, natural increase would be 32 000 under the zero migration assumption but 95 000 under the 180 000 migration assumption. Put another way, the total population increase in 2029 would be 32 000 if net overseas migration is assumed to be zero from 2009 onwards but 275 000 if net overseas migration is assumed to be 180 000 per annum. Here, I am making the simple point that migration has a multiplier effect upon population growth.

2.5 Immigration: the importance of labour demand

A strong lesson from Australian history is that migration is driven by the balance between the demand for and the supply of labour. In every period of economic downturn, the early 1840s, the 1890s, the 1930s, the mid-1970s and the early to mid-1990s, net overseas migration fell to very low levels because of weak labour demand. Conversely, migration tends to be high during economic upswings. The number of migrants is often considered to be exogenous to what is happening in Australia—a number determined for somewhat arbitrary reasons by government. If immigration is contingent upon the state of the labour market, it is endogenous to economic conditions in Australia. This has been very much more the case over the

past decade, as migration to Australia has shifted heavily towards temporary forms of migration (see below).

From June 2000 to June 2010, employment in Australia grew by an average of 207 000 new jobs every year and the average annual rate of growth of employment was 2.1 per cent. Population grew at 1.5 per cent in the same period. Twelve per cent of the growth in employment in the past decade was due to increased labour force participation, mainly at the older labour force ages, and 88 per cent of the growth in employment was derived from population increase mainly due to migration but also in smaller part to the increased numbers in the older labour force ages.

If Australian employment were to continue to grow at its 2000–2010 level, an additional 2.55 million jobs would be created in the coming decade. Consistent with this, the Australian Treasurer in a press conference prior to the 2011 Budget stated that he expected an additional 500 000 jobs to be created in Australia over the next two years. Skills Australia projects a need for an additional 4.36 million workers in Australia over the next 15 years (2.2 per cent average annual growth).

Strong labour demand can be expected in Australia over the next decade because of:

- a pressing need for new infrastructure for water, transport, ports, energy supply, housing and office space, and state-of-the-art communications (electors have expressed their views on this at recent elections)
- massive new investment in the resources industry and the construction of numerous new developments (construction of many new resources developments has already been contracted, and governments continue to approve new resources projects)
- strong demand for workers in the health and education sectors
- the retirement of the baby-boom generation and generally rising living standards, which will create strong demand for a wide range of services related to consumption and recreation.

In Queensland alone, on 6 April 2010 the Queensland Coordinator-General reported 39 major projects (principally in the resources sector) undergoing assessment, with a total labour requirement (construction and operations) of 81 342. Department of Mines and Energy research indicates that each direct job in mining has a multiplier of 4.3 across Queensland. A Treasury working paper (McKissack et al. 2008) estimated that the increase in population from migration (international and interstate) required to meet labour demand in the immediate future would be 91 000 per annum for Queensland, compared to the 2009-10 actual figure of 49 000.

Reconstruction following floods and cyclone damage will demand even more labour in Queensland.

In sharp contrast with this strong labour demand, the increase in the labour supply from domestic sources will be close to zero in the next decade because of the retirement of the baby-boom generation and because increases in participation are likely to be small (McDonald and Temple 2008). If net migration were to average zero from 2009 onwards, the Australian population would still grow by 1 125 000 between 2009 and 2019, but the working ages (15–64) would grow by just 21 000, while age group 65+ would grow by 944 000. The advantage that the Australian economy has had through a concentration of its population in the labour force ages is about to end, and this has implications for the growth of GDP per capita (see below).

Skilled permanent migration program

It is little recognised that the skilled categories in the Government's permanent migration program provide very few new jobs in the Australian economy. The skilled independent intake in 2009-10 was 35 800. Of that number, around 7000 were already employed in Australia and approximately 8000 continued to reside outside Australia. Furthermore, the total included the children and partners of the principal applicants. This category would have provided fewer than 20 000 new workers to the Australian labour force. The employer sponsored category numbered 41 000 in 2009-10, but almost 36 000 of those were already employed in Australia, meaning the net gain was only 5000. In sum, these, the two largest categories in the skilled migration program, contributed no more than 25 000 new workers to the Australian labour force compared with an annual increase of over 200 000.

People who qualified for permanent residence as partners of Australian citizens (45 000 in 2009-10) represented a much larger potential pool of new workers in Australia, but little is known about their employment patterns and their skill levels.

Temporary migration fills the shortfall

Because domestic sources and the Government's permanent migration program have not been able to meet the strong labour demand in Australia, the gap has been filled by strong growth in temporary migrants. Today, almost 10 per cent of the Australian labour force is made up of temporary residents of Australia. The main categories of employed temporary residents are overseas students (including 486 visa holders), New Zealand citizens, long-stay business visa holders (subclass 457), working holiday makers and people holding bridging visas. Between 2004-05 and

2007-08, net overseas migration to Australia increased by 130 000, of which 119 000 (91.5 per cent) were temporary residents.

Skill level of immigrants

There are questions about the skill level of immigrants to Australia, both permanent and temporary. Before the changes made in 2010, the skilled independent category in the permanent program consisted almost entirely of accountants, cooks and hairdressers. This situation was corrected by Minister Evans in a policy announcement in February 2010. Partners of Australians do not need to be skilled to obtain permanent residence, but many probably are skilled. Likewise, New Zealand citizens do not need to be skilled in order to work in Australia, and the best estimate is that they are spread across the full skill range. Long-stay business visa holders are generally very highly skilled, and most are in the four highest skill occupational categories. So far, in 2010-11, 76 per cent of applicants have been managers and professionals. Students and working holiday makers are usually skilled people, but a majority are employed in lower skilled jobs. Australian citizens leaving to work overseas are generally highly skilled.

In sum, Australia's net migration gain is not a gain that necessarily consists heavily of skilled workers. The new additions to the labour force are likely to be spread across the range of skills, indicating that the strong demand for labour in Australia is not just a demand for high-skilled workers.

Future course of net overseas migration

As long as the majority of additions to the Australian labour force are temporary immigrants, it can be expected that the level of net overseas migration will change substantially from year to year. This is borne out by the fact that net overseas migration has fluctuated enormously in the past few years. This is because the flows in the temporary categories are highly responsive to fluctuations in labour demand and to other changes, such as the changes that were made in relation to overseas students in 2010. The long-stay business visa was designed as an approach that would be highly responsive to shifts in labour demand and it has proven itself to be just that. The number of new visas fell sharply with the onset of the global financial crisis but is beginning to increase again.

The inevitable fluctuations mean that, for policy purposes, consideration needs to be given to the average level of net overseas migration over several years, rather than to the number in any particular year.

Given that labour demand will be extremely high in the next decade and domestic sources of labour highly constrained, there is a very strong likelihood that international migration will remain high across the decade. Because, relative to demand, the permanent skilled program provides only a small number of new workers to the Australian economy, the strong likelihood is that the labour demand will continue to be met by temporary entrants to Australia.

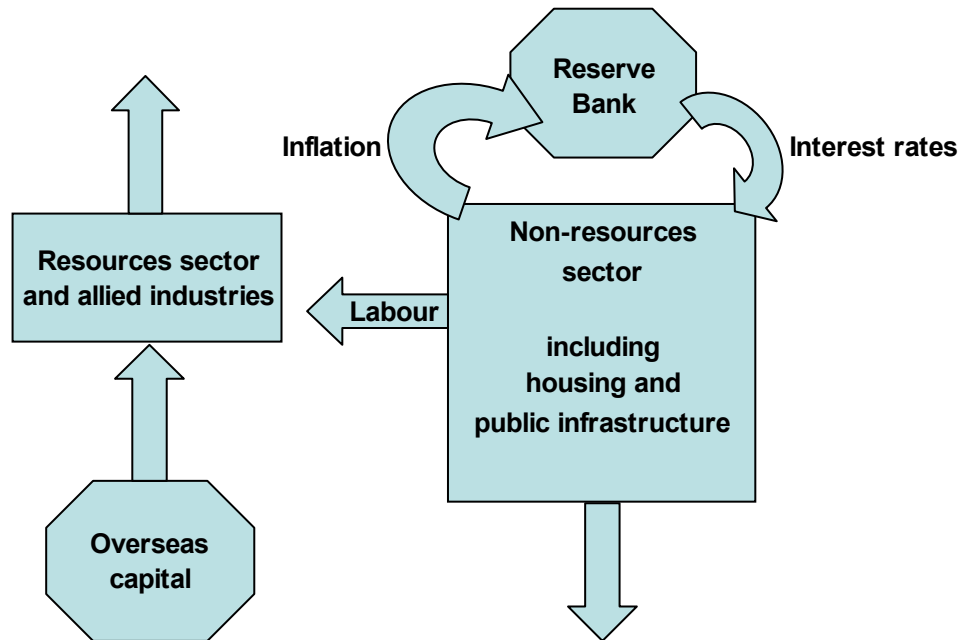
2.6 Economic implications

There is a concern that immigration, through competition, may lower the wages of existing Australian residents, particularly those with lower skill levels. Contrary to this, a recent international comparative study in a National Bureau of Economic Research working paper (Docquier et al. 2010) shows that immigration increases the wages of non-immigrants in Australia to an extent matched by no country other than Singapore, and that the benefits are greater for non-immigrants with lower skills.

McDonald and Temple (2010) have shown that the rate of growth of GDP per capita will tend to fall sharply in the next decade because of the retirement of the baby-boom generation. Immigration cannot eliminate this effect but it can significantly reduce the impact. With zero immigration, all else being equal, the ageing effect will reduce the rate of growth of GDP per capita from 1.7 per cent in 2010 to 0.8 per cent in 2020. With net migration of 180 000 per annum, the rate of growth would fall to 1.1 per cent per annum by 2020.

More important, however, is the effect upon the economy of a gross excess of labour demand over labour supply if international migration were to be severely constrained. The effects are shown graphically in Figure 2.3 in a dual-economy, ‘Dutch disease’ framework. The diagram displays the resources and allied industries sucking labour out of the non-resources sector because they pay much higher wages and because, with a fly in, fly out approach, the labour markets are the same (the capital and regional cities). Inflation is the likely consequence of labour demand grossly exceeding labour supply. Inflation, in turn, would lead to increases in interest rates, making it even more difficult to finance required housing and infrastructure. But the increased domestic interest rates would have little to no effect upon the resources boom because its capital is sourced largely from overseas. The pain that Australians are now feeling from inadequate housing supply and outdated public infrastructure would only be exacerbated.

Figure 2.3 **Why immigration is part of the solution**



A planned, well-managed immigration program over the next decade will enable the achievement of a reasonable balance between labour demand and labour supply, contribute to a stable, growing economy that will increase the living standards of Australians, and help to generate wealth that can be used to build public infrastructure and to finance environmental improvements.

Given that population growth in the coming decade will be highly contingent on labour demand, it is very surprising that Australian governments do not make estimates of future labour demand over a decade. We should routinely have estimates available of the number and type of labour that will be required and where it will be required. These estimates are required for both education planning and migration planning. Such estimates will always contain a relatively high degree of error 10 years out, but estimates would be revised each year and reasonable estimates are preferable to a vacuum of information as at present. Most future growth is likely to be in the major cities, but better estimates of future regional labour demand would inform policy.

2.7 Directions for policy

The policy directions described here, adapted to the national level, are addressed in more detail in the June 2010 report published by the Local Government Association

of Queensland, *Public Inquiry on the Need for a State Population Policy (McDonald Inquiry)* (LGAQ 2010). More detail can be obtained from the report.

Substantial future population growth over the next decade and perhaps in the following decade is already embedded in the Australian economy, and there appears to be little immediate prospect of low rates of population growth through reasonable policy initiatives available to the state or federal governments. From this perspective, the key issue becomes one of effective growth management, seeking to accommodate growth without compromising livability, affordability and long-term ecological sustainability.

Rapid population growth and the existing backlog of required work implies significant upfront investment in new public infrastructure to meet the needs of both existing and new residents. This needs to be reflected in the budget planning of the Australian Government and the State and Territory governments. There needs to be a partnership approach across all spheres of government to ensure that funding is obtained for the infrastructure that is required to support growth. Alternative financing mechanisms should be investigated to supplement current funding arrangements.

Infrastructure investment can play an important role in supporting growth in those regional areas facing strong labour demand. The critical nexus between regional job availability and population growth must be recognised as fundamental in any policy to support growth in regional Australia. Provision of quality infrastructure and services in regional centres will be a vital element of any such strategy. In the cities, strategies such as an increase in urban density and transit-oriented development are an integral component of population policy.

The National Housing Supply Council has identified a housing supply deficit of around 200 000 dwellings, and that number is increasing at the level of 25 000 dwellings per annum. More needs to be done to ensure that an adequate supply of dwellings suited to the range of household types is available, and to address areas of market failure in the delivery of planned housing outcomes. Improved monitoring and reporting on land and housing supply and prices will support initiatives to address affordability.

Barring a major downturn in the world economy, labour demand in Australia is likely to remain very strong into the future. It is essential that education and training strategies to address labour market stress are focused on ensuring that skills obtained by Australians are appropriate to the changing structure of the labour market and that there is not a disconnect between qualifications and skills gained

and the employment opportunities and labour market needs. There is a need for greater focus on technical and professional skill development.

State of the environment reporting indicates that there have been declines in environmental values, including loss of biodiversity, declines in waterway health and declines in livability in many parts of Australia. Current state of the environment reporting is considered to be too infrequent to ensure the early detection of sustainability problems, particularly where rapid growth is taking place. There is a need to implement initiatives related to biodiversity loss, waterway health, open space networks and regional landscape values to address declines in environmental values and to support the goal of ecologically sustainable development.

The scope, strength and dimensions of the debate about population growth, and its potentially divisive character, justify an explicit statement of population strategy by the Australian Government.

References

- Docquier, F., Özden, C. and Peri, G. 2010, *The Wage Effects of Immigration and Emigration*, NBER Working Paper 16646, National Bureau of Economic Research, Cambridge, www.nber.org/papers/w16646.
- LGAQ (Local Government Association of Queensland) 2010, *Public Inquiry on the Need for a State Population Policy (McDonald Inquiry)*, LGAQ, Brisbane.
- McDonald, P. and Kippen, R. 1999, 'Ageing: the social and demographic dimensions', in Productivity Commission and Melbourne Institute of Applied Economic and Social Research, *Policy Implications of the Ageing of Australia's Population*, Conference Proceedings, AusInfo, Canberra.
- , —— (forthcoming), *Forecasting Births*, Report to the Australian Bureau of Statistics.
- McDonald, P. and Temple, J. 2008, *Demographic and Labour Supply Futures for Australia*, Department of Immigration and Citizenship, Canberra.
- , —— 2010, *Immigration, Labour Supply and Per Capita Gross Domestic Product: Australia 2010–2050*, Department of Immigration and Citizenship, Canberra.
- McKissack, A., Chang, J., Ewing, R. and Rahman, J. 2008, *Structural Effects of a Sustained Rise in the Terms of Trade*, Treasury Working Paper no. 1, 2008, Department of the Treasury, Canberra.

General discussion

The discussion opened with some comments about Professor McDonald's argument that immigration is needed to meet increased demand for labour in the resources sector, and to prevent wage increases in that sector from increasing interest rates for the economy as a whole.

It was argued that Professor McDonald had neglected to draw a distinction between achieving growth in real GDP and increasing the living standards of existing Australian residents (i.e. excluding new immigrants). An increase in labour demand could be met either through additional workers or higher real wages — and from the viewpoint of existing residents, 'higher real wages is something we want'.

There was some further scepticism of the idea that interest rates would necessarily rise in response to demand-led increases in wages, and it was argued that the Reserve Bank, in setting monetary policy, would take into account the reasons for any observed wage increases. For example, one participant argued that the Reserve Bank would be expected to respond differently to wage inflation caused by an increase in the marginal product of labour as opposed to that arising from distortions in the economy or from policy settings that led to heightened inflationary expectations. Another participant observed that Professor McDonald's analysis focused on changes in the real economy while monetary policy is aimed at maintaining stable nominal prices.

Asked to comment on the relationship between temporary and permanent migration in Australia, Professor McDonald expressed the view that there is a strong link between the two as a result of a government policy, which facilitates moves by overseas students and skilled temporary migrants to permanent residency. He supported this policy approach — it was 'perfectly logical' that workers on temporary visas, being employed in a manner mutually satisfactory to both migrant and employer, would subsequently be granted permanent residency.

Responding to the earlier comments, Professor McDonald reiterated his view that growth in resources industries would draw skilled labour away from the non-resources sector, as the former would tend to offer higher wages; that this would result in a strong increase in the demand for skilled workers; which would lead to more migrants arriving on temporary (subclass 457) visas.

POPULATION, PRODUCTIVITY AND PARTICIPATION

3 Immigration: high-skilled versus low-skilled labour?

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3.1 Introduction

The immigration policy debate in many of the current OECD countries has shifted over the past century. One hundred years ago the emphasis in the countries of overseas settlement, such as the United States, Canada and Australia, was on attracting labourers, preferably from north-western Europe or, more narrowly, the British Isles. The skills of those workers were not of particular importance, as they were intended to fill low-skilled jobs in factories, in mines, on farms and on ranches. Some of the immigrants came in family groups to stay permanently, with no intention of returning to their origins, while among others the young men came to accumulate some money and then return home, often in repeated cycles. The countries of origin had large rates of net emigration, with emigration seen as a solution to poverty at home.

The European countries of emigration, such as the United Kingdom, Germany and Italy, have become areas of net in-migration. Even Ireland during its recent period of rapid economic growth experienced net in-migration, including the return of many of its citizens who had gone abroad. The migratory pressures from the poorer countries of Latin America, the Middle East, Africa, South Asia, and East Asia to the advanced industrial economies have increased. When and where the migration cannot take place legally because of barriers to entry, pressures increase for illegal migration.

Another dramatic difference is the current recognition that there are important distinctions among immigrants on the basis of their skill levels, independent of their race and country of origin. The types of skills that constitute high-skilled immigration vary across time. While in the past artisans and craftsmen constituted the elite of the labour force, at the current level of economic development in the

advanced knowledge-based economies the high-skilled are the STEM workers — scientific, technical, engineering and high-level management workers. Even if they work as employees, many STEM workers are highly entrepreneurial, developing new techniques, products, markets and inventions, and new ways of using older ideas. They also often move from firm to firm, and from country to country, seeking opportunities where they can advance their skills, as well as apply their skills more fruitfully. STEM workers have become internationally mobile.

The advanced knowledge-based economies have experienced a decline in manufacturing and a shift in technologies in all economic sectors. This has resulted in a relative decline in demand for lower-skilled workers.

3.2 Production function approach

Although there are variations in skill levels among high-skilled workers and among low-skilled workers, for simplicity let us assume that there are only these two categories of workers and that all workers within a category are homogeneous. We can then write a generic aggregate production function for an economy:

$$(1) \quad Q = f(A, H_1, H_2, K)$$

where Q is output (gross domestic product), H_2 is high-skilled labour, H_1 is low-skilled labour, K is the capital stock, and A is an efficiency parameter (reflecting the level of technology). The more labour and capital there is in the economy and the higher the level of technology (A), the greater the output.

If all other factors are fixed, because of diminishing marginal product and the complementarity among factors of production, the immigration of low-skilled labour (H_1) reduces the wages of low-skilled workers, but enhances the productivity of high-skilled workers and capital. Similarly, the immigration of high-skilled or STEM workers (H_2) has the effect of reducing their earnings, but raising the incomes of low-skilled workers and the return to capital. Thus, immigration not only increases aggregate output in the economy, but also affects the personal distribution of income (across individuals and across families) and the functional distribution of income (across types of factors of production).

3.3 Public policy issues

A century ago, there were relatively few public initiatives to transfer resources for helping low-income families. The poor were left to fend for themselves economically, or might benefit from assistance from better off family members, or receive meagre resources from church or community welfare groups. During economic downturns in the major destinations, when jobs became scarce and unemployment increased, especially among recent low-skilled immigrants, fewer new immigrants arrived. Perhaps equally important, many recent immigrants without jobs left their destination to return to their origin or to try their fortunes in a different destination. Thus, changes in net immigration flows (immigration minus emigration) helped to moderate the effects of the business cycle on unemployment and the economic deprivation of the low-income population. In a sense, migratory flows served as a partial ‘automatic stabiliser’ for the economy as the labour force grew (in-migration) when job opportunities expanded, and it shrank (out-migration) when unemployment was high.

In the current period, the advanced industrial economies all have major income transfer programs that tax those with means to provide support in the form of income, housing, food, health care and education (among other benefits) to the lower-income population. To the extent that immigrants, particularly recent immigrants, are eligible for these income transfers, the incentive to leave the destination during harsh economic times is diminished. This does not mean that the automatic stabiliser function of migration flows no longer exists, but it is far more muted than in the past.

This poses a policy dilemma for liberal democracies. On the one hand, there is the policy objective of helping those in economic need within one’s country. On the other hand, by doing so an important ‘automatic stabiliser’ for the labour market loses some of its effectiveness, and when jobs are scarce native-born workers compete for employment with those who recently arrived.

An increase in the population due to low-skilled immigration does more than just increase the size of the low-income population in the short run. By depressing wage rates for low-skilled workers, it also increases the economic deprivation of native-born low-skilled workers even as it increases the economic returns to high-skilled workers and capital. It thereby increases the inequality of wages among workers and the inequality among families in the destination. In contrast, an increase in population due to high-skilled immigration decreases the wages of high-skilled workers and increases the wages of low-skilled workers. This reduces the inequality of income among workers and decreases their degree of economic deprivation by

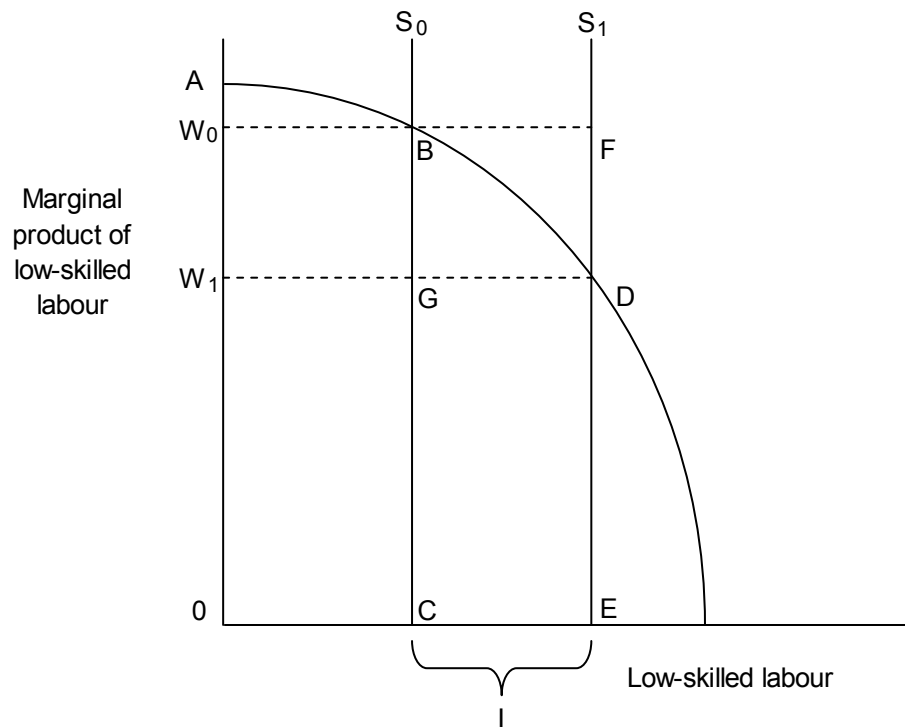
raising the wages of low-skilled labour. High-skilled immigration thus decreases the burden of low-income natives on the welfare state.

Although some natives gain and other natives lose, immigration can increase the total income of the native (pre-migration) population. To simplify the exposition, consider figure 3.1, which shows the marginal product of low-skilled labour from the aggregate production function. The greater the amount of low-skilled labour, the lower is its marginal product (wage rate). Skilled workers and capital are aggregated into a single factor of production, referred to as ‘all other factors’, that determines the height of the marginal product curve.

Initially there are S_0 low-skilled workers, so the GDP is shown by the area OABC, of which OW_0BC is the return to low-skilled native workers (OW_0 is the earnings per worker) and W_0AB is the return to the other factors of production — high-skilled workers and capital. With the immigration of I workers, the low-skilled labour supply curve shifts from S_0 to S_1 , and the wage rate of low-skilled workers falls to W_1 . The total wages of low-skilled native workers has declined to OW_1GC and the total income of other factors of production has increased to W_1AD . Since other factors are assumed fixed in the short run, the rate of return to skilled workers and to physical capital has increased. Thus low-skilled native workers lose income and the owners of other factors gain, but the aggregate income of the native population increases by BDG . The immigrants gain; although the wage in the destination has declined, it is presumably still higher than the wage available in the origin.

Public policies may be evaluated in terms of their impacts on the level or rate of growth of income and their impacts on the personal or functional distributions of income. Social welfare is generally said to increase with an increase in the level or the rate of growth of income, and to increase with a decline in inequality in the distribution of income. Since income distribution impacts are typically experienced more directly than the impacts on overall income or income growth, the income distribution impacts of immigration may dominate political decision making, whether explicitly or implicitly.

Figure 3.1 **Schematic representation of the impact of immigration of low-skilled workers in a two-factor economy**



Note: For purposes of exposition, the second factor combines all other inputs.

In a democracy, whenever low-skilled workers are more numerous than high-skilled workers and the owners of capital, their economic self-interest to oppose the immigration of other low-skilled workers is likely to dominate immigration policy. But they can be ‘held harmless’ by taxing the other factors of production, from the income area W_1W_0BG , and transferring that revenue to low-skilled native workers. The other factors would still gain (BDG), but low-skilled natives would be held harmless and would have less cause to oppose the immigration of low-skilled workers. Note that this involves treating native low-skilled workers differently from immigrant low-skilled workers, implying that immigrants would not be eligible for all or certain transfer programs (cash, housing, medical care, education etc.).

In principle, such a tax-transfer system limited to natives would be ‘Pareto Optimal’, as no-one, whether immigrant or native, would end up worse off than before. Politically, however, it is very difficult for liberal democracies to maintain a public two-class system, and efforts to do so in principle fall apart in practice. What happens if low-skilled immigrants also receive public transfers that bring their wage rate to the original market wage rate (from W_1 to W_0)? The transfer $BFDG$ to low-

skilled immigrants, in addition to the transfer to low-skilled natives, more than erases the income gain to other factors of production. Now, natives as a whole lose and the total income of high-skilled workers and the owners of capital is reduced by BFD.

The consequences of high-skilled immigration can also be analysed within the context of the production function model in figure 3.1. Change the axes in the chart so that they refer to high-skilled labour, and now the other factors of production are low-skilled workers and capital. The immigration of high-skilled labour lowers its wage rate, but raises the income of low-skilled labour and the owners of capital. High-skilled workers lose in terms of their wage rates (labour earnings) but gain to the extent that they are also owners of capital, if not directly, then indirectly through their pension plans. Moreover, the relative decline in their wages is not as much of a public policy concern as is the decline in the wages of low-skilled workers with low incomes.

3.4 The welfare state

This is the crux of the policy dilemma regarding the immigration of low-skilled workers in a liberal democracy welfare state. To protect low-skilled native workers from the negative effects on their employment and income, transfer programs can be instituted or enhanced. But if low-skilled immigrants are included in such benefit programs, natives as a whole lose. One solution is to bar ‘new’ legal immigrants from certain transfer programs. But which programs, and how ‘new’ is new? These efforts tend to fail on equity grounds.

Another solution is to keep low-skilled immigrants in a ‘guest worker’ or ‘illegal’ (undocumented) status that discourages them from bringing family members to the destination and bars them from these benefits. This policy, explicit or implicit, is based on the premise that while there will be a stock of foreign workers without dependent family members, it will be a revolving door, with individual workers staying only for a brief time and being replaced by new foreign workers. For this to be efficient, the jobs would require little investment in destination-specific and firm-specific human capital. Some of the low-skilled workers in each cohort will find a way to stay, either legally or illegally, and with the passage of time the stock of such people will increase. This has its own negative consequences, including the emergence of a ‘separate’ population within the country, often defined by their race or ethnicity. The status in the destination of the children of these families, whether born in the origin or the destination, often becomes ambiguous.

The immigration of high-skilled immigrants, on the other hand, has the effect of reducing the earnings of high-skilled workers, while raising the incomes of low-skilled workers and the owners of capital. The high-skilled workers are less numerous than the lower-skilled workers, and there is less of a public policy concern to ‘hold harmless’ the higher income high-skilled workers, many of whom would benefit as they are also owners of capital, if only through their pension plans. The immigration of high-skilled workers, by lowering their earnings and raising those of low-skilled workers, also has the effect of reducing income inequality among those in the labour force. Reduced inequality is often viewed as beneficial.

High-skilled immigrants also have a more favourable fiscal impact than low-skilled immigrants (Holen 2009). Because they receive low wages, low-skilled immigrants pay lower taxes and receive more benefits from the public treasury. Low-skilled native-born workers also experience a decline in their wage rate, pay lower taxes, and receive greater public benefits and income transfers. Because high-skilled immigrants have higher wage rates, they pay more taxes and receive less in the way of income transfers. Because high-skilled immigration raises the earnings of other factors of production, it also has the effect of improving the net fiscal balance (taxes minus transfers) of low-skilled workers.

3.5 Changes over time in job opportunities

Low-skilled workers in the advanced OECD economies have been experiencing a relative decline in their wages in recent decades. Part of this decline is due to the computer and information technology revolution. The change in technology seems to have enhanced the earnings of high-skilled STEM workers, who appear to be either permanently favoured by the new technology (skill-biased technological change) or temporarily favoured because they adopted it sooner or more effectively (greater allocative or decision-making efficiency).

Moreover, the economic emergence of manufacturing capabilities in many less developed countries (LDCs) has resulted in lower-skilled workers in the OECD facing greater competition for manufacturing jobs from LDCs. Thus, whereas a century ago in the now developed countries job opportunities for low-skilled workers in manufacturing and extractive industries were expanding, today employment in those sectors is shrinking. They are currently expanding in what had been many of the LDCs.

On the other hand, the increase in the ratio of the earnings of high-skilled workers to the earnings of low-skilled workers, and in the rate of return on human capital, suggests that the demand for STEM workers in the OECD has continued to expand.

This has had two effects — one domestic and one migration related. The higher rate of return on human capital has encouraged greater investment in higher education among the youth in the OECD countries. The other is that the increase in the skill differential in the OECD has widened the gap in earnings between the STEM-trained workers in the OECD and in the major source countries.

Why do immigrants from the LDCs keep coming to the OECD countries if job opportunities in the OECD for low-skilled workers are decreasing? Ironically, the immigration of high-skilled or STEM workers actually increases the attractiveness of a destination for low-skilled workers by increasing the wages of the latter. Moreover, the same information technology revolution that is shrinking low-skilled job opportunities in the OECD has made it easier for those in the LDCs to learn of the better life available to them and their children in the highly developed economies. Even with downward pressure on low-skilled wages, earnings augmented by public benefits may still be significantly higher for low-skilled immigrant workers in the OECD than in their countries of origin.

An important determinant of international migration is personal security. Today the developed countries are relatively safe from war, insurrection and ordinary crime, while that is not the situation in many of the countries with high emigration rates for low-skilled workers. Furthermore, even low-skilled workers are often forward looking and consider the educational and employment opportunities that will be available for their children.

3.6 Patterns of adjustment

It is important to recognise that high-skilled immigrants have a different pattern of economic adjustment from low-skilled immigrants. For those with a low occupational attainment prior to migration there is little scope for occupational mobility after migration. Although their specific or narrowly defined occupation may change, they are likely to remain at a comparable occupational level and experience little occupational upgrading with time in the destination.

Among high-skilled immigrants, however, two distinct patterns to their adjustment may be observed. If the immigrants come from countries with a similar level of economic development, the same language and similar educational systems and labour market institutions, in the absence of occupational licensing, the immigrants' skills are likely to be very highly transferable to the destination labour market. In this case, the migration is likely to be between two high-income countries and is not likely to occur unless the potential migrant receives a high wage offer for work in a comparable job or occupation. Then, with the passage of time, the immigrant is

likely to experience a relative decline in earnings (‘regression to the mean’) even if there is no change in occupational status. This pattern has been found among countries for which there is a high degree of skill transferability, such as the English-speaking developed countries (Chiswick and Miller 2011b).

In the more common scenario, however, the high level of skills is not perfectly transferable. In this case the immigrant initially experiences downward occupational mobility compared to the origin, to be followed by upward earnings and occupational mobility either as their pre-migration skills, including destination language skills, adapt to the destination or new skills relevant for the destination are formed. In this case, the initial labour market outcomes understate the longer term experiences. The lower the transferability of the skills across countries, the poorer would be the initial matching of educational and training qualifications to their job in the destination, the lower would be the initial earnings and occupational status of the STEM migrants, and the steeper would be their subsequent improvement as they adjust to the destination labour market (Chiswick and Miller 2011a).

Perhaps the two dominant barriers to the transferability of the skills of high-skilled immigrants are language differences and occupational licensing. Indeed, we tend to observe STEM immigrants moving to destinations that use the same language or a language that is linguistically close to their mother tongue. Intensive language training courses pre- and post-migration can mitigate the language barrier and speed up the matching of the immigrant’s occupation to his or her schooling and job training.

The second barrier is occupational licensing. The ‘recognition’ by the immigration and licensing authorities and the labour market of the immigrants’ educational qualifications and occupational experiences can go far in establishing the high-skilled immigrant on an upward economic trajectory and a matching of immigrant qualifications to their employment in the destination. This recognition need not represent a deterioration in standards, but can be used instead to mitigate the efforts of native practitioners of the occupation to require higher educational and occupational credentials for immigrants than for themselves, or standards that are higher than necessary for the job so as to reduce labour market competition.

3.7 The distribution of high skills by nativity

It should be noted that there can be a downside to the immigration of high-skilled STEM workers. As discussed above, the immigration of high-skilled workers tends to depress the earnings of high-skilled workers in the destination. This tends to depress the domestic rate of return from investment in these activities, thereby

discouraging native youths from investing in those skills. This may have more of an effect on the distribution of natives and immigrants across high-skilled activities than on the aggregate number of natives investing in high-skilled occupations.

Some high-skilled occupations require skills that are highly internationally transferable. Quantitative skill is one example. Other high-level jobs have more local or destination-specific characteristics, as is the case for jobs that require linguistic skill or special occupational licensing. Thus, if one could rank high-level occupations by the extent to which they require internationally transferable skills and the extent to which they require destination-specific skills, one should expect to observe high-skilled immigrants concentrating in the former (such as mathematics or computer technology) and high-skilled natives concentrating in the latter (for example, law or marketing).

3.8 Capital and technology

The discussion thus far has assumed that the capital stock is fixed or held constant. While that is a reasonable assumption for the short run, in the long run there is a greater return to capital from either low-skilled or high-skilled immigration. The increased return to capital raises the capital stock by attracting foreign capital, decreasing the export of domestic capital, or increasing savings and hence the overall supply of domestic capital. To the extent that the capital stock increases, the earnings of both low-skilled and high-skilled workers can increase despite immigration. In terms of figure 3.1, an increase in the capital stock moves the marginal product of labour curve outward. The question as to whether capital chases labour or labour chases capital has not been solved, in part because it is likely that both phenomena exist simultaneously.

If STEM workers are a stronger complement to physical capital than are low-skilled workers, high-skilled immigration has a greater impact in stimulating the growth of capital in the destination, and hence on the growth of aggregate income. There is reason to believe that higher-skilled workers do in fact work in settings of higher capital-to-labour ratios. There is also evidence that the immigration of high-skilled workers increases the rate of return and stimulates the increase in the private capital stock and the investment by government in productive infrastructure and social overhead capital (Grossmann and Stadelmann 2011). In contrast, public spending on health, on social matters and on consumption (that is, on income transfers) does not appear to increase in response to high-skilled immigration. Then, high-skilled immigration would have a larger favourable impact on income growth through the effect on the productivity of capital.

The technology parameter ‘A’ in the production function is not exogenous. It is a function of several factors, including incentives and institutional arrangements that encourage the development and adoption of newer and more efficient technologies. High-skilled workers in STEM jobs are, almost by definition, at the forefront of technological change. In the current high-technology economic environment, they are more likely to be in a job situation in which their knowledge of existing technology and management practices, combined with their analytical and decision-making skills, can be used to advance economic efficiency. Thus the technology parameter, A, is likely to be larger and grow faster, the greater the share of STEM workers in the economy, whether from the native population or from immigration (Acemoglu 1998, Xiang 2005).

3.9 Duration of the visa

In designing a policy for the admission of high-skilled immigrants, one issue is the length of time for the visa. Visas for high-skilled immigrants can be permanent as long as the immigrant resides in the destination, and can offer an opportunity for citizenship after a few years. Alternatively, occupation-based visas may be valid for a relatively short time, such as the H1-B visas in the US, which have a three-year duration renewable once for three years. There can be merit in a ‘probation’ period during which the migrant must demonstrate employment in a high-skilled occupation before receiving a permanent visa. Beyond that, the probation period of a temporary visa for high-skilled immigrants would tend to be counterproductive.

The expectation of a long period of employment in the destination provides the incentive for a high-skilled worker to make skill- and employment-related investments relevant for the destination. A short-duration visa, even of a few years duration, discourages the financing of such investments by the worker and the employer. High-skilled workers tend to make greater investments in on-the-job training because of the apparent complementarities of schooling training and on-the-job training. Permanent visas, or temporary visas with a high probability of becoming permanent, encourage such investments.

If the labour market match is successful, neither the worker nor the employer would want the employment visa to expire. As the immigrant acquires family ties in the destination, perhaps including marriage and children born or raised in the destination, humanitarian issues would come into play — calling for a permanent rather than a temporary visa. If the labour market match is not successful in the destination, the high-skilled immigrant may well return to the origin.

This is not to say that there are no bases for temporary work visas. They can be useful for training periods where the expectation is that the trainee would depart. Most instances in which a short-term visa would make sense would be in highly seasonal employment where there is little training specific to the employer, occupation or industry. While this might apply in seasonal construction or harvesting of fruit and vegetable crops in agriculture, it is not likely to apply broadly in occupations held by STEM workers.

3.10 Rationing by occupation or points?

A more difficult policy dilemma arises from the criteria used to admit high-skilled or STEM workers. One mechanism is through a ‘points system’; another is a ‘targeted occupation system’. Under a points system, the applicant’s individual characteristics matter — age at application (points for young adults), educational attainment, occupational experiences, destination language proficiency, and other criteria associated with high labour market productivity. Points might even be awarded on the basis of the spouse’s skills. Points are awarded for productivity-enhancing characteristics, and if a threshold number of points is acquired a visa is issued.

A disadvantage of the points based system is that an applicant may be awarded a sufficient number of points for a visa but may not ever work in a high-skilled occupation or work at all. A person with a foreign medical degree may receive a sufficient number of points to obtain a visa but may not be able to practise medicine because he or she could not enter a residency program in the destination or obtain a medical licence (Lesky 2011; McDonald, Warman and Worswick 2011). Thus, points awarded for educational qualifications should be contingent on the applicant being able to use his or her skills in the destination.

Under a targeted occupational rationing system, employers petition on behalf of an applicant for a visa and must demonstrate that the applicant has occupational skills that are scarce in the destination. In principle, this solves the problem of a job not being available, but once the visa is granted the applicant may elect to not work for that employer or even in that occupation. This system requires the establishment of a list of ‘favoured’ and ‘not favoured’ occupations. A political tug-of-war between representatives of employer groups and of worker groups then becomes an important determinant of occupational categories that receive favourable visa treatment. Politics may dominate economics.

Under the targeted occupation regime, an applicant must identify a specific employer who is willing to expend the time and financial resources to secure a visa.

Yet, after securing the visa, the worker may decline to work for that employer. Moreover, how is the employer to know which potential applicant to sponsor? Most likely it would be an applicant already in the destination under a student or temporary worker visa or in an illegal status. This encourages entry into the destination for the purpose of identifying an employer willing to serve as a sponsor.

Neither mechanism in its pure form is ideal. A modified points system that considers whether the formal educational qualifications will be useful in the destination is less vulnerable to occupation-specific political manoeuvring and to people coming to the United States under non-immigrant visas or no visas to identify an employer willing to serve as a sponsor.

3.11 STEM workers — high mobility

Finally, it is important to recognise that we live in a world in which information and transportation costs are very low, especially relative to the earnings of STEM workers. The cost of international migration no longer includes the prospect of never again seeing or speaking with family members and friends left behind. Many potential international migrants in LDCs have English as their mother tongue, or study English with the intention of emigrating or to enhance employability even in their home country. High-skilled workers in most countries of origin acquire at least some proficiency in English, often through the studies that are necessary to acquire their skills. No matter where they settle in the OECD, they are also likely to work with similarly high-skilled workers with some degree of proficiency in English.

More so than ever in the past, one can view STEM workers as being part of a global labour market. High rates of inter-state and inter-provincial mobility among high-skilled workers within a country characterised labour markets in some countries of overseas settlement in the second half of the 20th century. High rates of international migration (even repeat and circular migration) are likely to characterise STEM workers in the first half of the 21st century. This is being facilitated by the trend of countries towards allowing dual citizenship for their native-born citizens and for their immigrants. To retain their native-born STEM workers and attract immigrant STEM workers from elsewhere, nations will need to develop policies that are attractive to high-skilled, internationally mobile workers.

Countries of emigration have at times developed policies to either encourage or to discourage emigration. Countries of in-migration have developed policies to control (limit) or regulate in-migration. What is new is that, since STEM workers are highly internationally mobile, countries will need to develop ‘migration policies’ that encompass both in-migration and emigration. While barriers to the emigration of

natives or the return migration of immigrants would not be tolerated in liberal democracies, other policies will need to be developed to discourage the exit and encourage the entry of high-skilled workers. There is little point having an immigration policy to encourage the entry of high-skilled workers, without at the same time having policies in place that discourage the exit of native-born or immigrant STEM workers.

References

- Acemoglu, D. 1998, 'Why do new technologies complement skills? Directed technical change and wage inequality,' *Quarterly Journal of Economics* 113, November, pp.1055–89.
- Chiswick, B.R. and Miller, P.W. 2011a, 'Educational mismatch: are high-skilled immigrants really working in high-skilled jobs, and what price they pay if they aren't', in Chiswick B.R. (ed.), *High Skilled Immigration in a Global Labor Market*, American Enterprise Institute, Washington, pp. 111–54.
- 2011b, 'The negative assimilation of immigrants: a special case', *Industrial and Labor Relations Review*, April.
- Grossman, V. and Stadelmann, D. 2011, 'High-skilled immigration: the link to public expenditure and private investments', in Chiswick, B.R. (ed.), *High Skilled Immigration in a Global Labor Market*, American Enterprise Institute, Washington, pp. 201–30.
- Holen, A. 2009, *The Budgetary Effects of High Skilled Immigration Reform*, Washington: Technology Policy Institute, Washington.
- Lesky, L.G. 2011, 'Physician migration to the United States and Canada: criteria for admission', in Chiswick B.R. (ed.), *High Skilled Immigration in a Global Labor Market*, American Enterprise Institute, Washington, pp. 155–64.
- McDonald, J.T., Warman C. and Warswick C. 2011, 'Earnings, occupation, and schooling decisions of immigrants with medical degrees: evidence for Canada and the United States', in Chiswick B.R. (ed.), *High Skilled Immigration in a Global Labor Market*, American Enterprise Institute, Washington, pp. 165–98.
- Xiang, C. 2005, 'New goods and the relative demand for skilled labor,' *Review of Economics and Statistics*, vol. 87, no. 2, May, pp. 285–98.

4 Economic effects of population growth and ageing in Australia

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4.1 Introduction

Population ageing is a worldwide demographic phenomenon that has resulted from changes in fertility and mortality. Australia, like other developed countries, has been experiencing ageing of its population, with mortality and fertility rates falling over the past three decades. Furthermore, population ageing in Australia is expected to accelerate in the next few decades, reducing population growth and having vast implications for people's economic behaviour and for the economy as a whole.

In this chapter we outline past and future demographic trends in Australia, concentrating on the recent and projected changes in fertility, mortality and immigration rates. We then discuss the economic and fiscal effects of population ageing in reference to related literature and present some preliminary long-run macroeconomic and fiscal results for the effects of ageing in Australia using a computable dynamic model. Finally, we offer some concluding remarks.

4.2 Recent trends and future demographic projections

In this section we report the recent and future trends in mortality, fertility and net immigration rates and document the past and projected future size and age distribution of Australia's population.

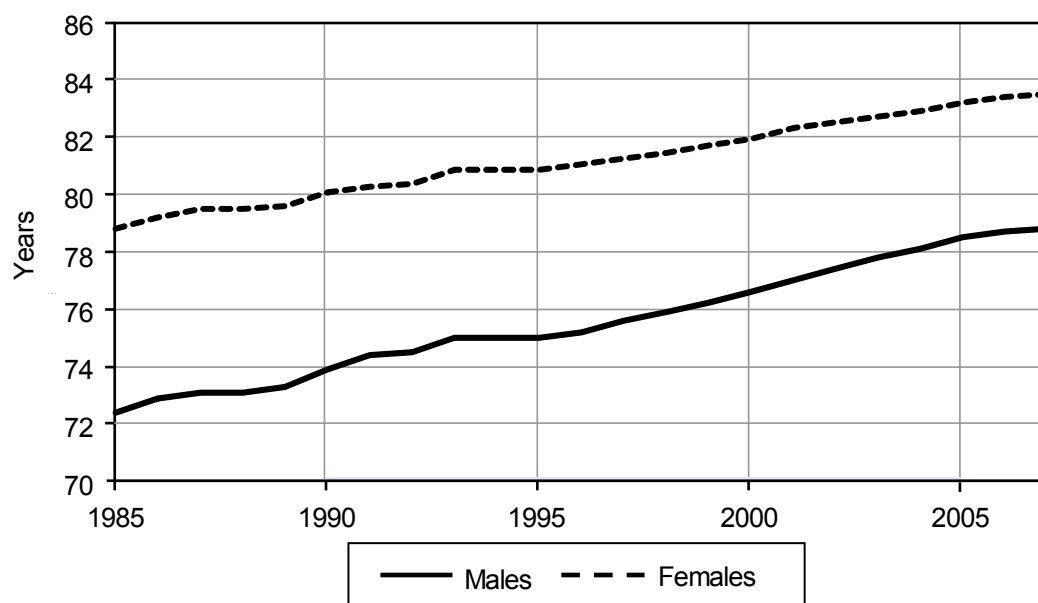
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Mortality rates

Average mortality rates in Australia have been falling significantly over the past century. In the past 30 years, the standardised death rate has almost halved, falling from 12.7 deaths per 1000 population in 1971 to 6.4 in 2001 (Productivity Commission 2005). There has been a substantial reduction in the likelihood of death for all ages, with significant improvements in infant mortality. The major cause of the falling mortality rates in the first half of the last century was the improvement in living conditions, while lower death rates over the past 40 years have been attributed to advances in the medical research.

The decline in mortality rates has led to higher life expectancy, which has increased by over 30 years since the 1880s. As shown in figure 4.1, life expectancy at birth increased by 6.6 years to 78.7 years for males and by 4.7 years to 83.5 years for females during the period 1985 to 2007 (ABS 2008). Moreover, the improvement in life expectancy has been greatest at older ages; the life expectancy of males (females) aged 80 years increased by 31 per cent (24 per cent) to 8.22 (9.95) years between 1985 and 2007, whereas life expectancy at birth for males (females) increased by just 9.2 per cent (6 per cent).

Figure 4.1 Life expectancy at birth from 1985 to 2007



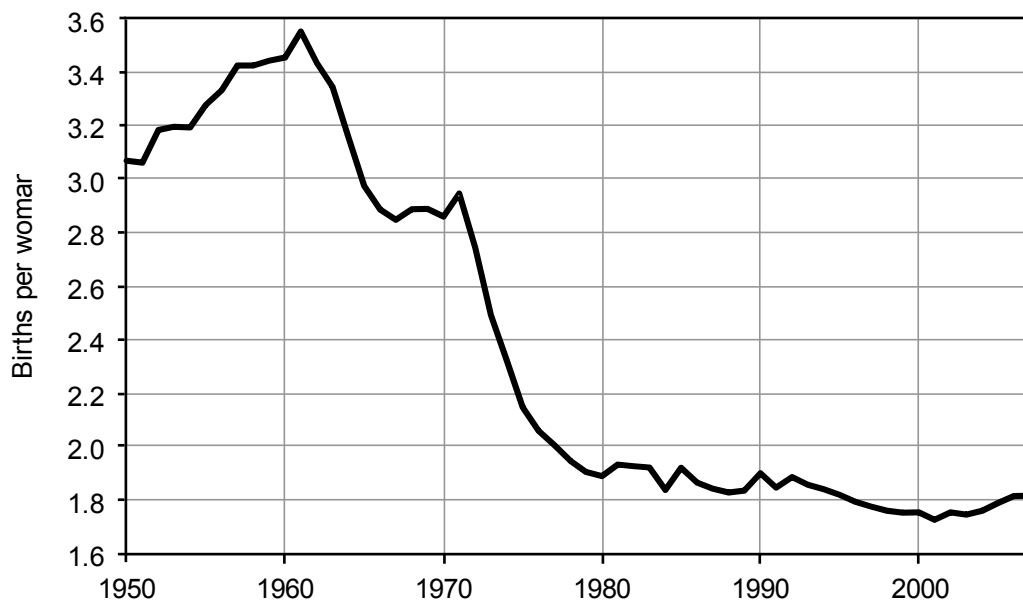
Mortality rates are expected to continue to fall. The Productivity Commission's MoDEM 2.0 demographic model, documented in Cuxson et al. (2008), provides age- and sex-specific mortality rates from 2008 to 2053 for low, medium and high

survival scenarios. Under all three scenarios, mortality rates are assumed to decline, implying higher life expectancy; under the medium survival scenario, life expectancy at birth is projected to increase to 88.2 years for males and to 90.8 years for females by 2053.

Fertility rates

Total fertility rates have been falling since the early 1960s because of medical progress (for example, the availability of the oral contraceptive pill) and increases in labour force participation by women. As depicted in figure 4.2, the total fertility rate (TFR) reached a peak of almost 3.6 births per woman in 1961, after which there were sharp falls until the late 1970s. Since then, TFRs have continued to fall, reaching about 1.8 births per woman in 2007 (ABS 2008). The general view is that fertility rates will continue to decline, despite the recent small revival in rates. MoDEM 2.0's medium scenario has TFRs declining from 1.8 babies per woman in 2007 to 1.7 by 2018, thereafter remaining constant.

Figure 4.2 Total fertility rates from 1950 to 2007



Migration

Australia has been experiencing a strong inflow of migrants since World War II, the net inflow being 184 400 in 2007 (ABS 2008). The potential impact of migration is to mitigate population ageing in Australia, since the age distribution of immigrants

is skewed towards the young. In 2002, most net immigrants were aged between 20 and 30 years, and the share of immigrants over 50 years of age was relatively small (Productivity Commission 2005). The Productivity Commission (2005) reports that, had there been zero net migration after 1944, the aged dependency ratio would have been only several percentage points higher in 2004 but would be around 9 percentage points higher than otherwise by 2045.

The population projections by the Productivity Commission's MoDEM 2.0 assume low, medium and high scenarios for net overseas immigrants, with annual net immigration of 117 000 people for the low, 177 000 for the medium and 237 000 for the high scenarios.

Population size and age structure

Table 4.1 shows Australia's population and annual population growth in selected years over the period 1901 to 2007, by which year the population reached 21.02 million. Since 1901, Australia's population has increased by over 17 million, mainly because of a natural increase which accounted for about two-thirds of the total growth during that period. Net overseas migration has contributed about one-third of the total growth since 1901. In 2007, the total annual growth rate of 1.53 per cent consisted of a natural growth rate of 0.67 per cent, the remaining 0.86 per cent being contributed by net overseas migration (ABS 2008).

Table 4.1 Australia's resident population in selected years

<i>Year</i>	<i>Population (mil)</i>	<i>Annual increase (%)</i>
1901	3.79	
1923	5.69	1.87
1943	7.23	1.21
1963	10.95	2.09
1983	15.39	1.72
2000	19.15	1.29
2001	19.41	1.36
2002	19.65	1.23
2003	19.90	1.24
2004	20.13	1.17
2005	20.39	1.33
2006	20.70	1.49
2007	21.02	1.53

Note: Percentage annual increases from 1901 to 2000 are calculated as compound population growth rates in each of the selected periods.

Source: ABS (2008)

The age distribution of Australia's population has also changed significantly since the beginning of the last century. Table 4.2 reports that the share of children aged 0 to 14 years decreased by 15.7 percentage points between 1901 and 2007, but the proportion of the people aged 65 years and over increased from 4.1 per cent in 1901 to 13.1 per cent in 2007. The last row of the table shows the median age of the population, which increased by 14.3 years between 1901 and 2007.

Table 4.2 Age and sex distribution of Australia's resident population

	1901			2007		
	Males	Females	Persons	Males	Females	Persons
Age distribution (%)	%	%	%	%	%	%
0 – 14 years	17.8	17.4	35.1	9.9	9.4	19.4
15 – 64 years	32.2	28.4	60.7	33.8	33.7	67.4
65 – 84 years	2.2	1.7	3.9	5.4	6.1	11.5
85 years and over	0.1	0.1	0.2	0.5	1.1	1.6
Total	52.3	47.6	100.0	49.7	50.3	100.0
Median age (years)	23.6	21.5	22.5	36.1	37.6	36.8

Source: ABS (2008)

Population projections are based on the current age distribution of the population and the forecast of future fertility, mortality and immigration rates using deterministic or stochastic (Alho and Spencer 2005) forecast models. MoDEM 2.0 assumes low, medium and high deterministic scenarios for these vital rates. Using these, we construct the following three population scenarios.

- Low population scenario with (i) the total fertility rate decreasing from 1.8 to 1.5 babies per woman by 2018, (ii) net annual immigration of 117 000 people and (iii) the implied life expectancy at birth increasing from 78.9 years in 2007 to 88.2 years by 2053 for males and from 83.7 years to 90.8 years for females.
- Medium scenario with (i) the total fertility rate decreasing to 1.7 babies per woman by 2018, (ii) net annual immigration of 177 000 people and (iii) the implied life expectancy at birth increasing to 88.2 years by 2053 for males and to 90.8 years for females.
- High scenario with (i) the total fertility rate increasing to 1.9 babies per woman by 2018, (ii) net annual immigration of 237 000 people and (iii) life expectancy at birth increasing to 93.8 years for males and to 95.8 years for females by 2053.

Table 4.3 shows the actual size and age structure of the Australian population in 2007 and the projected size and age structure in 2030 and 2053 based on the three population scenarios. Under each scenario, population increases — rising least in the low scenario and most in the high scenario. Under the medium population

scenario, the population increases by over 12.8 million people between 2007 and 2053.

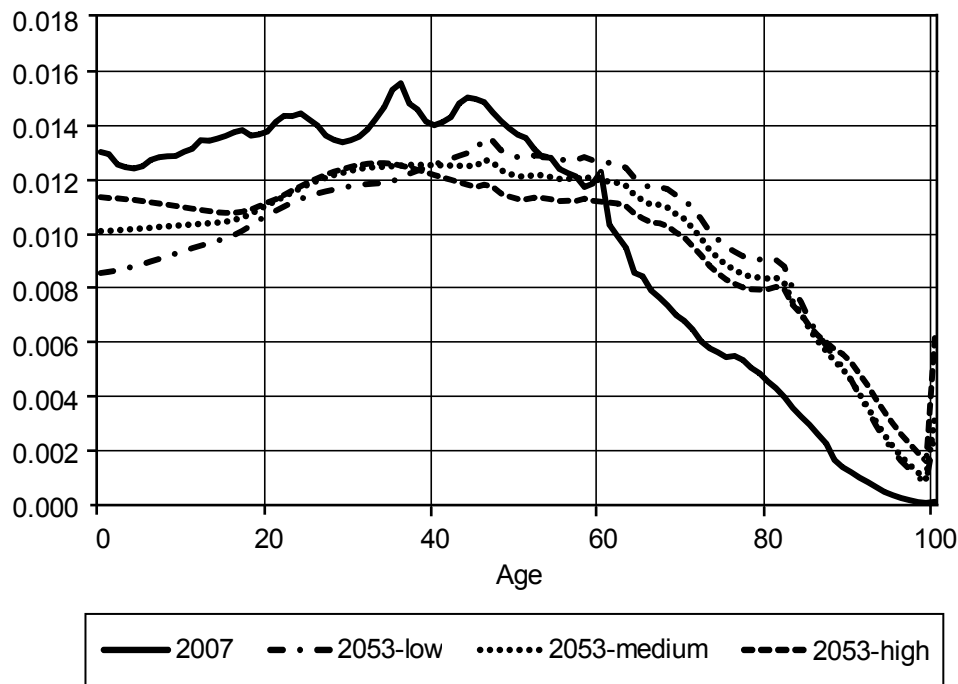
Population ageing between 2007 and 2053 is clearly demonstrated under each population scenario. Under the medium population scenario, the share of the population aged 65 years or over increases from about 13 per cent in 2007 to over 24 per cent. Moreover, the population share for those aged 85 years or over increases from only 1.64 per cent to 5.8 per cent. In contrast, the 15–64 year cohort share declines by about 7 percentage points. Consequently, the aged dependency ratio increases from 19.5 per cent in 2007 to over 40 per cent in 2053. Similar aged dependency ratios are projected for the other scenarios.

Table 4.3 Population projections for Australia with MoDEM 2.0

	<i>Low scenario</i>			<i>Medium scenario</i>			<i>High scenario</i>		
	<i>2007</i>	<i>2030</i>	<i>2053</i>	<i>2007</i>	<i>2030</i>	<i>2053</i>	<i>2007</i>	<i>2030</i>	<i>2053</i>
Population (million)	21.20	25.52	28.20	21.20	27.97	34.07	21.20	30.74	41.16
Age distribution	%	%	%	%	%	%	%	%	%
0 – 14 years	19.39	15.18	13.70	19.39	16.87	15.41	19.39	18.34	16.72
15 – 64 years	67.45	63.86	60.58	67.45	63.10	60.14	67.45	61.92	58.58
65 years and over	13.16	20.96	25.72	13.16	20.02	24.45	13.16	19.73	24.70
85 years and over	1.64	2.87	5.68	1.64	2.85	5.75	1.64	3.13	6.89
Dependency ratios	%	%	%	%	%	%	%	%	%
Youth (0 – 14/15 – 64)	28.75	23.76	22.61	28.75	26.74	25.63	28.75	29.62	28.55
Aged (65+/15 – 64)	19.51	32.82	42.45	19.51	31.73	40.66	19.51	31.87	42.17
Total (Youth + Aged)	48.26	56.58	65.06	48.26	58.47	66.29	48.26	61.49	70.72
Median age (years)	36	41	45	36	40	43	36	39	42

Figure 4.3 depicts the age cohort population shares in 2007 and the projected cohort shares in 2053 generated by the MoDEM's low, medium and high population scenarios. Under all three projection scenarios, the proportion of the population at ages less than 50 years is projected to fall, while the shares of cohorts older than about 60 years are projected to be larger in 2053.

Figure 4.3 Cohort shares derived from MoDEM 2.0



4.3 Some economic effects of ageing

Population ageing experienced in the developed world is expected to affect the behaviour of people and businesses, and to have vast macroeconomic and fiscal implications. Here, we outline methodological frameworks applied to analyse the economic implications of ageing and briefly discuss some of the literature. Research on the economic implications of ageing yields controversial results, suggesting that ageing effects are likely to vary across countries of different size and across different fiscal and social security systems.

The ‘standard’ models used to analyse population ageing issues embody dynamics and general equilibrium. An essential feature of the overlapping generations (OLG) type of model is the assumed life-cycle behaviour of households, whereby households face longevity risk and choose their labour supply and consumption (hence savings and retirement age) over their complete lifetime to maximise their expected lifetime welfare. A second essential feature is the government budget constraint that requires expenditures on the age pension and other government programs to be matched by taxes. A third feature is that markets clear every period and that the economy evolves through time via capital accumulation and population growth.

Analysts use this framework to determine the effects of population ageing on household behaviour, general equilibrium effects (for example, on wages, employment and capital formation) and the fiscal effects on government expenditures and revenue. We now briefly review some literature to give a flavour of potential implications; many of these positions depend on the source of population ageing and provide little consensus.

Changes in fertility rates

How do changes in fertility rates affect the government budget, savings, living standards and growth rates? There are no clear answers.

Fehr et al. (2008) argue that whether the short-run fiscal savings on child-specific government outlays exceed the long-run fiscal costs is country specific, as fiscal systems are quite different across countries. For example, Guest and McDonald (2000) find that greater social expenditures by the Australian Government arising from low fertility rates would not occur until after 2040, with minimal increases in taxation. On the other hand, simulations of lower fertility rates in Europe and Japan by Fehr et al. (2008) result in lower labour supply and generate significant increases in social security tax rates for the two world regions.

Guest and McDonald (2002) and Guest (2006) find that lower fertility rates yield higher future living standards in Australia, while the empirical results of Hondroyannis and Papapetrou (2005) suggest that an increase in fertility is associated with higher output per capita in their sample of eight European countries.

Kulish et al. (2010) find that lower fertility generates a higher capital labour ratio (that is, capital deepening) using a model abstracting from taxation. The ageing effect on capital deepening simulated by models with a government sector is more subdued because of the increased tax and social security contribution rates required to balance government budgets (Auerbach et al. 1989; Miles 1999; De Nardi et al. 1999; Fehr 2000). Kotlikoff et al. (2007) even find capital shallowing, reflecting significant increases in payroll and income tax rates. Similar results are simulated by the multiregional demographic OLG model developed by Fehr et al. (2004, 2008).

Lower mortality rates and higher longevity

There is considerable certainty among demographers that survival rates will improve and life expectancy will increase in the future. Increased longevity means higher benefit payments to current and future elderly citizens, increasing fiscal and

social security burdens. On the other hand, lifespan extension should induce higher labour supply, delayed retirement and greater saving to better fund a longer retirement (Bloom et al. 2003 provide empirical evidence).

The simulation of the extended household lifespan by Kulish et al. (2010) generates larger household savings, capital deepening and higher real wages, but the effect on work hours is almost unchanged. Fehr et al. (2008) simulate projected increases in life expectancies in the United States, Europe and Japan and show that greater longevity increases labour supply and capital stock, while social security contribution rates increase significantly due to a higher aged dependency ratio hindering capital accumulation and causing capital shallowing.

Changes in immigration rates

Higher immigration of young and skilled workers is often seen as a way to mitigate the negative economic effects of ageing on the government budget because they will work and accumulate capital, increasing tax revenues. However, since some (especially older) immigrants will also collect social security and public health benefits, the fiscal and economic effects of immigration will depend on the age of immigrants and the size of the economy.

Guest and McDonald (2000, 2001) show that the fiscal and economic effects of higher net immigration are significantly positive for a small open economy like Australia (reduced immigration would yield a significantly lower rate of growth of living standards and higher social security and health outlays). They argue that immigration mitigates the effects of population ageing, as the Australian immigrants are heavily concentrated in the 15–35 year age group. However, the effects of higher immigration are far less significant for a large economy, as shown by Fehr et al. (2004) for the United States; even a significant increase in skilled immigration will do little to alter capital shortages, tax hikes and wage falls caused by population ageing.

Innovation and technology improvements

There are several arguments supporting negative effects of ageing on labour productivity. First, older workers are less educated, less trained and less healthy than their younger contemporaries. Older workers also tend to be less creative, innovative and less entrepreneurial, mainly due to their high risk aversion. Second, lower population growth makes innovation less profitable by reducing the gains from economies of scale through the spreading of fixed costs (Cutler et al. 1990). On the other hand, ageing may positively affect labour productivity, as a higher

relative price of labour driven by lower population growth provides incentives to innovate through capital investment.

Retirement policy reactions

Governments may alter the retirement policy settings to mitigate the effects of population ageing. Guest and McDonald (2000) find that an increase in the Australian retirement age from 65 to 70 years increases GDP and reduces government outlays. Pension reforms (both parametric and systemic) have been analysed by researchers, including Auerbach et al. (1989), Miles (1999), Fehr (2000), Kotlikoff et al. (2007), De Nardi et al. (1999), Hviding and Merette (1998) and Borsch-Supan et al. (2006). The common findings are that both parametric and systemic pension reforms improve fiscal outcomes, generate higher savings and increase real wages. While some older generations suffer lower welfare, the reforms yield long-run welfare gains.

Health

Population ageing may generate changes in fertility rates or in the age structure of health, which may alter welfare and labour supply. Bloom et al. (2003) show that the increased longevity (longer retirement) effect outweighs the improved health (delay retirement) effect, generating increasing savings. Alternatively, Kulish et al. (2010) find in their simulations of lifespan extensions that the capital labour ratio and savings are smaller when allowing for health improvements (enhancing labour supply) and that an increased lifespan may reduce the time spent working even when health improvements are considered (positive wealth effect dominates the effects of lower interest rates).

4.4 Simulations of long-run economic effects of ageing

In this section, we examine the long-run effects of ageing in Australia using an Australian OLG model similar to that developed by Kudrna and Woodland (2011), but extended to incorporate age-specific public expenditures on health and education derived from AIHW (2010) and OECD (2009), respectively. To compute the long-run effects of population ageing, we undertake the following steps. First, we use the cohort shares and age-specific survival rates in 2007 taken from MoDEM 2.0 to compute a benchmark steady-state solution that closely matches the actual values of the key macroeconomic aggregates in Australia in 2007-08. Second, we re-solve the model using the cohort shares and age-specific survival

rates for 2053 derived from the three projection scenarios discussed earlier. The results are derived under two alternative model assumptions — perfect and imperfect capital mobility. In both cases, the consumption tax rate is assumed to balance the government budget.

Perfect capital mobility

The simulations in this subsection follow the small open economy assumption under which the domestic interest rate is equal to the exogenously given world interest rate. This assumption, combined with constant returns to scale in production, means that the capital labour ratio and the wage rate are determined by the world interest rate.

Table 4.4 shows the long-run implications of population ageing for several macroeconomic variables, government expenditures and the budget-balancing consumption tax rate. The effects are presented as percentage changes in variables from 2007-08 to 2053 under the three population scenarios. These effects reflect a combination of the changes in cohort shares and the general equilibrium effects, especially on the consumption tax rate.

Table 4.4 Macroeconomic effects of population changes in 2053 — perfect capital mobility

Variable	2007-08 ^a		2053 ^b					
			Low		Medium		High	
Output	0.521	– %	-7.42	–	-8.44	–	-10.82	–
Consumption	0.269	[51.7] %	5.65	[59.0]	3.39	[58.4]	1.59	[59.0]
Labour supply	0.295	– %	-7.42	–	-8.44	–	-10.82	–
Capital	1.712	– %	-7.42	–	-8.44	–	-10.82	–
Domestic assets	1.369	– %	46.94	–	49.03	–	60.14	–
Foreign debt	0.343	– %	-224.3	–	-237.7	–	-293.9	–
Health expenditures	0.032	[6.1] %	32.44	[8.7]	28.82	[8.6]	29.83	[8.9]
Educational expenses	0.020	[3.9] %	-26.99	[3.0]	-21.20	[3.3]	-17.40	[3.6]
Pension expenditures	0.014	[2.6] %	82.40	[5.1]	66.31	[4.7]	56.01	[4.6]
Consumption tax rate	0.100	– %	45.97	–	42.75		44.40	–

^a Level values are expressed as per capita and in units of \$100,000 for monetary variables. The values in square brackets represent a percentage of GDP. ^b The effects in 2053 are presented as percentage changes in the selected variables (expressed as per capita) relative to their 2007-08 values.

Under each scenario there is a higher aged dependency ratio, which implies that per capita pension expenditures increase significantly. Under the high scenario, the increase in the age pension expenditures is the smallest because of the pension

means testing of larger assets and asset incomes. As expected, health expenditures to the government increase in 2053 but the public expenditures on education decline as the youth dependency ratio falls in 2053. Because of larger total government expenditures, the consumption tax rate needs to increase to balance the government budget. In the case of the medium projection scenario, the increase in the consumption tax rate is 42.75 per cent, from 10 per cent in 2007 to 14.28 per cent in 2053.

The higher consumption tax rate and greater longevity affect households by reducing consumption and increasing labour supply while young to finance additional consumption over a longer retirement period. However, because of larger population shares of cohorts aged over 50 years in 2053 compared to those in 2007, this demographic effect outweighs the life-cycle effects on households, and so per capita consumption rises while per capita labour supply falls, as recorded in table 4.4. The effects on the consumption output ratio are even more positive (displayed in the square brackets), given the implied output decreases (noting that the changes in labour supply have to be exactly matched by the changes in capital and output). The larger shares of older cohorts and the fact that households need to accumulate more resources to fund greater retirement consumption are also behind the significant increases in per capita domestic assets (especially under the high population scenario).

Imperfect capital mobility

We now allow for responsiveness of the domestic interest rate to the changes in the foreign debt to output ratio. Following Guest (2006), we specify the domestic interest rate as $r = \bar{r} + \gamma \left[\left(\frac{FD}{Y} \right)_{2053} - \left(\frac{FD}{Y} \right)_{2007} \right]$, where \bar{r} is the exogenous world interest rate, $\frac{FD}{Y}$ is the foreign debt to output ratio and the parameter γ is set to 0.02. Thus, any reduction in Australia's foreign debt will reduce the domestic interest rate, while higher foreign debt will increase it. As the domestic interest rate changes, so does the capital labour ratio and the wage rate.

The results presented in table 4.5 now include the effect on the interest and wage rates. The asset increases by households to finance longer retirement periods are exported abroad, implying lower foreign debt and a lower interest rate under current model assumptions. One consequence is that the capital stock increases significantly. Per capita labour supply declines because of the relative decrease in the working age population, but the fall is smaller than under perfect capital mobility, due to labour supply incentives from the increased wage rate. Higher

capital and lower labour imply capital deepening. The increases in per capita consumption are larger than in the small open economy case because of smaller hikes in the consumption tax rate.

The effects on the government budget are similar to those in the case of the perfect capital mobility simulations, with lower public expenditures on education and higher expenditures on health and pensions. However, the increases in pension expenditures are significantly larger, which is due to relatively smaller assets and asset incomes assessed under the pension means test. Nevertheless, the consumption tax rate under all three ageing scenarios is not as high as under fixed interest rates, mainly due to higher income tax revenue from higher earnings and pensions.

Table 4.5 Macroeconomic effects of population changes in 2053 — imperfect capital mobility

	2007-08 ^a			2053 ^b					
				Low		Medium		High	
Output	0.521	—	%	1.38	—	0.81	—	0.53	—
Consumption	0.269	[51.7]	%	7.37	[54.7]	5.21	[53.9]	3.39	[53.2]
Labour supply	0.295	—	%	-4.65	—	-5.67	—	-7.57	—
Capital	1.712	—	%	11.89	—	12.17	—	15.05	—
Domestic assets	1.369	—	%	30.24	—	31.87	—	39.65	—
Foreign debt	0.343	—	%	-61.33	—	-66.42	—	-83.08	—
Health expenditures	0.032	[6.1]	%	32.44	[7.9]	28.82	[7.8]	29.83	[7.9]
Educational expenses	0.020	[3.9]	%	-26.99	[2.8]	-21.20	[3.0]	-17.40	[3.2]
Pension expenditures	0.014	[2.6]	%	98.76	[5.1]	84.47	[4.8]	81.04	[4.7]
Consumption tax rate	0.100	—	%	38.40	—	35.53	—	38.51	—
Interest rate	0.050	—	%	-16.29	—	-17.56	—	-21.90	—
Wage rate	1.00	—	%	6.27	—	6.81	—	8.69	—

^a Level values are expressed as per capita and in units of \$100,000 for monetary variables. The values in square brackets represent a percentage of GDP. ^b The effects in 2053 are presented as percentage changes in the selected variables (expressed as per capita) relative to their 2007-08 values.

4.5 Conclusions

The chapter documents past trends in, and future projections of, the size and age structure of Australia's population. Clearly, the Australian population has been ageing as a result of declining fertility and mortality rates. Population ageing is expected to continue in the future mainly due to further improvement in survival rates.

The economic and fiscal effects of population ageing have been analysed by many researchers. Our brief review indicates that the effects depend upon the source of

population ageing — fertility, mortality and migration. Moreover, the literature does not provide clear answers as to how an ageing population will affect, for example, living standards, capital labour ratio and real wages.

We used a general equilibrium OLG model to provide preliminary, long-run macroeconomic implications of population ageing for the Australian economy. Overall, we show that population ageing will reduce per capita labour supplies and increase asset accumulation by households, while per capita age pension government expenditures and the consumption tax rate will rise substantially. Allowing for adjustments in the domestic interest rates, population ageing leads to capital deepening and higher wages.

References

- Alho, J.M. and Spencer, B.D. 2005, *Statistical Demography and Forecasting*, Springer, New York.
- Auerbach, A.J., Hagemann, R., Kotlikoff, L.J. and Nicoletti, G. 1989, 'The economics of ageing populations: the case of four OECD economies', *OECD Staff Papers*, Paris.
- ABS (Australian Bureau of Statistics) 2008, *Australian Historical Population Statistics*, cat. no. 3105.0.65.001, ABS, Canberra.
- AIHW (Australian Institute of Health and Welfare) 2010, *Health Expenditure Australia 2008-09*, cat. no. HWE 51, AIHW, Canberra.
- Borsch-Supan, A.H., Ludwig, A. and Winter, J.K. 2006, 'Ageing, pension reform and capital flows: a multi-country simulation model', *Economica*, vol. 73, no. 292, pp. 625–58.
- Bloom, D.E., Canning, D. and Graham, B. 2003, 'Longevity and life-cycle savings', *Scandinavian Journal of Economics*, vol. 105, pp. 319–38.
- Cuxson, G., Temple, J., Fry, J. and Leong, L. 2008, *MoDEM 2.0*, Productivity Commission, Melbourne.
- Cutler, D.M., Poterba, J.M., Sheiner, L.M. and Summers, L.H. 1990. 'An ageing society: opportunity or challenge?', *Brookings Papers on Economic Activity*, vol. 1, pp. 1–73.
- De Nardi, M., Imrohologlu, S. and Sargent, T.J. 1999, 'Projected US demographics and social security', *Review of Economic Dynamics*, vol. 2, pp. 757–95.
- Guest, R.S. 2006, 'Population ageing, capital mobility and optimal saving', *Journal of Policy Modeling*, vol. 28, pp. 89–102.

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- and McDonald, I.M. 2000, 'Population ageing and projections of government social outlays in Australia', *Australian Economic Review*, vol. 33, pp. 49–64.
- , —— 2001, 'Ageing, optimal national saving and future living standards in Australia', *Economic Record*, vol. 77, pp. 117–34.
- , —— 2002, 'Would a decrease in fertility be a threat to living standards in Australia?', *Australian Economic Review*, vol. 35, pp. 29–44.
- Hondroyiannis, G. and Papapetrou, E. 2005, 'Fertility and output in Europe: new evidence from panel cointegration analysis', *Journal of Policy Modeling*, vol. 27, pp. 143–56.
- Hviding, K. and Merette, M. 1998, *Macroeconomic Effects of Pension Reforms in the Context of Ageing Populations: Overlapping Generations Model Simulations for Seven OECD Countries*, OECD Economics Department Working Papers no. 201, OECD, Paris.
- Fehr, H. 2000, 'Pension reform during the demographic transition', *Scandinavian Journal of Economics*, vol. 102, no. 3, pp. 419–43.
- , Jokisch, S. and Kotlikoff, L.J. 2004, 'The role of immigration in dealing with the developed world's demographic transition', *Finanz Archiv*, vol. 60, pp. 296–324.
- , —— and —— 2008, 'Fertility, mortality and the developed world's demographic transition', *Journal of Policy Modeling*, vol. 30, pp. 455–73.
- Kotlikoff, L.J., Smetters, K. and Walliser, J. 2007, 'Mitigating America's demographic dilemma by pre-funding social security', *Journal of Monetary Economics*, vol. 54, pp. 247–66.
- Kudrna, G. and Woodland, A. 2011, 'Implications of the 2009 age pension reform in Australia: a dynamic general equilibrium analysis', *Economic Record*, forthcoming.
- Kulish, M., Smith, K. and Kent, Ch. 2010, 'Ageing, retirement and savings: a general equilibrium analysis', *The B.E. Journal of Macroeconomics*, vol. 10, no. 1, article 18.
- Miles, D. 1999, 'Modelling the impact of demographic change upon the economy', *Economic Journal*, vol. 109, pp. 1–36.
- OECD (Organisation for Economic Co-operation and Development) 2009, *Education at a Glance*, OECD, Paris.
- Productivity Commission 2005, *Economic Implications of an Ageing Australia*, Research Report, Productivity Commission, Canberra.

5 Population growth and the resources boom

Chris Richardson, David Rumbens and James Allnutt
Deloitte Access Economics

The 2010 federal election saw a bipartisan shift from ‘Big Australia’ towards ‘Sustainable Australia’. As a result of that shift and policy decisions affecting the link between studying in Australia and gaining permanent residency here, there has been a notable fall in net international migration to Australia. Having peaked at annual rates of 320 000 at one stage in late 2008, net international migration to Australia fell to 206 000 through 2010, with further falls in prospect.

That means a sharp switch in short-term prospects for the supply side of labour markets. Working-age population gains hit a high when we needed it, rising to a migrant-fuelled peak in 2008 as the first phase of the resource boom flamed out amid the global financial crisis.

The current phase of the resources boom involves bigger dollars, but the supply side of labour markets looks hard-pressed to feed the requisite people power into the strong job demand being created by the boom. That is not merely because migrant numbers are falling away, but also because the pace of baby boomer retirement is picking up.

The last time job demand went through the roof, Australia had more people power to help satisfy that job boom. Now the job boom is back, but working-age population numbers are set to crawl through a period in which ideally they would still have been sprinting.

The upshot is that Australia will have to get through a considerable commodity boom with working-age population growth that is set to halve from the highs it reached in 2008-09, implying a greater risk for skill shortages and interest rates than need be the case.

Bigger is not better: it never has been. But Australia's migration program has long been rather more focused on quality than quantity — the average migrant is well skilled and of an age such that he or she is likely to work for longer than the matching Australian workforce. That means migration has been helping to boost productivity and participation — the two more important elements of Treasury's focus on its 3Ps. (Yes, adding migrants dilutes the national capital stock of mines, factories, computers and roads per worker, but that is only ever a temporary impact — extra migrants raise the demand for and profitability of new infrastructure, thereby prompting businesses to build.)

Ironically, most of the harm from this policy shift is short term. Deloitte Access Economics' longer term population forecasts are little changed, and we doubt Treasury's have either — most projections had already assumed a substantial fall from a one-off migration peak. However, the sharp shift in the politics of migration means that migration is falling fast at a time when the terms of trade are at record highs — an uncomfortable mix with unnecessary costs.

5.1 Longer term issues: migration and the 3Ps

Well-regarded Fairfax columnist Ross Gittins¹ recently argued:

The original bipartisanship [on migration] was a kind of conspiracy. The nation's business, economic and political elite has always believed in economic growth and, with it, population growth, meaning it has always believed in high immigration.

He therefore welcomed the more open debate that accompanied the last federal election.

Gittins addressed the basic policy question here — whether 'bigger' also means 'better' — by noting:

The most recent study by the Productivity Commission found an increase in skilled migration led to only a minor increase in income per person, far less than could be gained from measures to increase the productivity of the workforce. What's more, it found the gains actually went to the immigrants, leaving the original inhabitants a fraction worse off ...

Why doesn't immigration lead to higher living standards? To shortcut the explanation, because each extra immigrant family requires more capital investment to put them at the same standard as the rest of us: homes to live in, machines to work with, hospitals and schools, public transport and so forth.

¹ <http://www.smh.com.au/opinion/stop-beating-about-the-bush-and-talk-about-big-australia-2010-0803-115bg.html>.

Little of that extra physical capital and infrastructure is paid for by the immigrants themselves. The rest is paid for by businesses and, particularly, governments. When the infrastructure is provided, taxes and public debt levels rise. When it isn't provided, the result is declining standards, rising house prices, overcrowding and congestion.

In essence, then, Ross Gittins invokes the Productivity Commission (PC) to argue that the need to build new infrastructure for migrants turns the balance of economic arguments against them.

In fact, the PC report is not recent — it dates from 2006 — and its conclusions are not quite as summarised by Gittins.² That paper concluded that:

Some effects of migration are more amenable to measurement and estimation than others. Effects that cannot be reliably measured or estimated might still be significant.

- Positive effects from additional skilled migrants arise from higher participation rates, slightly higher hours worked per worker and the up-skilling of the workforce.
- Some of the economy-wide consequences lower per capita income, such as capital dilution and a decline in the terms of trade.
- The overall economic effect of migration appears to be positive but small, consistent with previous Australian and overseas studies.

In terms of the selection criteria of the Migration Program:

- the greater emphasis on skills has been associated with better labour market outcomes for immigrants
- English language proficiency stands out as a key factor determining the ease of settlement and labour market success of immigrants.

Indeed, a PC staff member summarised the findings of that report as follows:

Migrants affect many aspects of the community and economy in which they live. Some of the direct economic effects of migrants living within Australia were described in the Productivity Commission's (2006) report on the Economic Impacts of Migration and Population Growth. That report showed that migrants tend to raise Australian living standards — measured as GDP per capita — somewhat, because Australia's migrants are more highly skilled than the locally-born population on average and more concentrated in working age groups. This paper focuses on a less direct way in which migrants may affect living standards: by strengthening international social and business networks, thereby facilitating trade and investment flows. (Dolman 2008)

It is probably no coincidence that the 2008 assessment from the PC was even more positive, because the makeup of Australia's migration intake had changed in the interim, moving to a sharper focus on skilled migrants.

² The Productivity Commission's summary of its conclusions from its research is available at <http://www.pc.gov.au/projects/study/migrationandpopulation/docs/finalreport/keypoints>.

That said, the PC's December 2010 summary was less clear cut, merely noting that 'The impacts of immigration growth on GDP and GNI per head of the existing resident population are ambiguous ...' (PC 2010)

This debate is important, because it goes to the heart of the policy (as opposed to political) arguments around migration. Central to it is the argument raised by Ross Gittins that extra infrastructure is only partly paid for by migrants themselves, with the rest paid for by business and governments.

Yet businesses do not build infrastructure for the pleasure of doing so — they build because of the potential for profit. That means the prices they charge for infrastructure provide them with the necessary return. If so, then business-provided infrastructure is paid for by users and, if population increases due to migrant numbers, then the lift in revenue and profitability acts as a signal to build new infrastructure.

What of the argument that governments fund much infrastructure? Government spending is ultimately funded by taxpayers, meaning that this issue boils down to the question of whether migrants pay more or less than their fair share of tax. And the answer is that they pay above-average taxes. They do so because Australia's migrants are more skilled on average than the existing population, and because they are more likely to have a longer career in the workforce than Australia's existing population (because migrants are more skilled and earn higher incomes, they have an incentive to stay working for longer).

Hence, both elements of these arguments fall away. Let us be very clear here: if you took these arguments at face value, then they would also be arguments against any births in Australia — because those babies, even as adults, would pay only a portion of the infrastructure costs they invoke, with the rest paid for by 'business and governments'.

More broadly, you can think of 'government' as representing a social contract by the Australian community with itself — as a society, we tax workers so as to pay for subsidies to the young and the old.

Australia's migrants are of net benefit to that national social contract. On the one hand, the age profile of migrants means that we are providing relatively less to them to subsidise their education and health care while young — taxpayers in other nations do that for us. Moreover, the age profile of migrants to Australia means that they are likely, other things being equal, to be in the workforce for some time. In addition, many migrants (especially temporary migrants on the likes of 457 visas) do not qualify for some government benefits (or qualify only after a waiting period).

Furthermore, and most importantly, migrants to Australia are more skilled than the existing workforce. Those relatively higher skill levels mean they earn relatively higher wages and hence pay relatively higher taxes, which are a key component of the benefit to the rest of the nation. Moreover, the likelihood that migrants will work for longer than existing residents rests not merely on their age profile, but also on their skills — the high return to skills makes it more likely that they'll work for longer.

Note that the above arguments do not boil down to 'bigger is better'. Bigger is neither better nor worse unless there is a change in quality. However, it is exactly that which Australia's current migration program generates. Think of it in terms of the 3Ps of growth often invoked by the Treasury: population, participation and productivity.

The key benefit of migration to the average Australian lies in the improvement in the national average in productivity and participation from the relatively higher skills of migrants and their relative age profile.³

Or, in other words, the macroeconomic arguments in favour of migration focused on skilled workers arise not because migrants generate a bigger Australia, but because they support a 'better quality' Australia through lifting workforce productivity and participation.

Hence, at least at the macro level of Australians' social contract with ourselves, a skilled migration intake makes good sense.

But what of the macro cycle? Surely inviting migrants into Australia at a time of high or rising unemployment simply risks adding to the ranks of the unemployed?

Space does not permit us to address this issue at any length, but in passing it is worth harking back to a 1970s debate that also focused on the evils of new entrants to the workforce who were seen as 'stealing jobs'. Those new entrants were married women — and they had no lingering impact on unemployment at all.

³ The evidence from the Department of Immigration and Citizenship (DIAC 2010) shows that skilled migrants have lower unemployment and higher participation. Their salaries are an indirect measure of productivity. Those salaries are only a little above the Australian average overall, but are above the average when you compare income by age with the matching Australian averages. The Australian Bureau of Statistics also has the participation data in detail. For example, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6291.0.55.001Feb%202011?OpenDocument> shows that, in the past three months, migrants who arrived in Australia in the past decade had a participation rate of more than 72 per cent, comfortably above the national average of almost 66 per cent.

That is because they took the money earned from their labour supply and they spent it — meaning that the addition to labour supply also added to labour demand.

Although there are minor issues to do with both timing and the extent of income remittances, the same is broadly true of migrants: they get jobs and they spend their resultant incomes, thereby adding to both the supply of and demand for labour, with no lingering impact on unemployment rates.

5.2 Recent developments in Australian population and migration trends

In late 2009 the federal Treasurer, Wayne Swan, indicated that Treasury's view of Australia's population 40 years hence had changed markedly since the *Intergenerational Report* was released in April 2007. At that time, Treasury expected a future Australian population of 27 million. However, by late 2009 that projection had changed to 35.9 million.

In October 2009, then Prime Minister Kevin Rudd commented on those Treasury projections, saying:

I actually believe in a big Australia. I make no apology for that. I actually think it's good news that our population is growing. Contrast that with many countries in Europe when it's actually heading in the other direction. I think it's good for us, it's good for national security in the long-term, it's good in terms of what we can sustain as a nation.

Then Opposition leader, Malcolm Turnbull, gave qualified support at the time.

But the 2010 federal election saw a bipartisan shift from 'Big Australia' towards 'Sustainable Australia'. Accordingly, Australia's population growth is slowing fast at a time when our need for workers is rising fast. The slowdown is not due to births, which averaged 250 000 a year in the two decades to 2004 but rose to 300 000 by 2008. The jump wasn't due to the effectiveness of baby bonuses. It was partly because the trend towards having babies later in life had started to reach natural limits, but more notably because an extended bout of prosperity made many couples comfortable with their fiscal future — comfortable enough to have kids.

The upswing in births seen since 2004 has now mostly run its course, but the downswing in population growth now underway is rather more the result of policy impacts on migration flows. Australia saw record numbers of migrants from 2005 until recently, aided by the strength in our economy, which drew workers here amid growing skill shortages. The lift in migration was also partly the result of rules that eased the path to permanent residency for those studying in Australia. Although

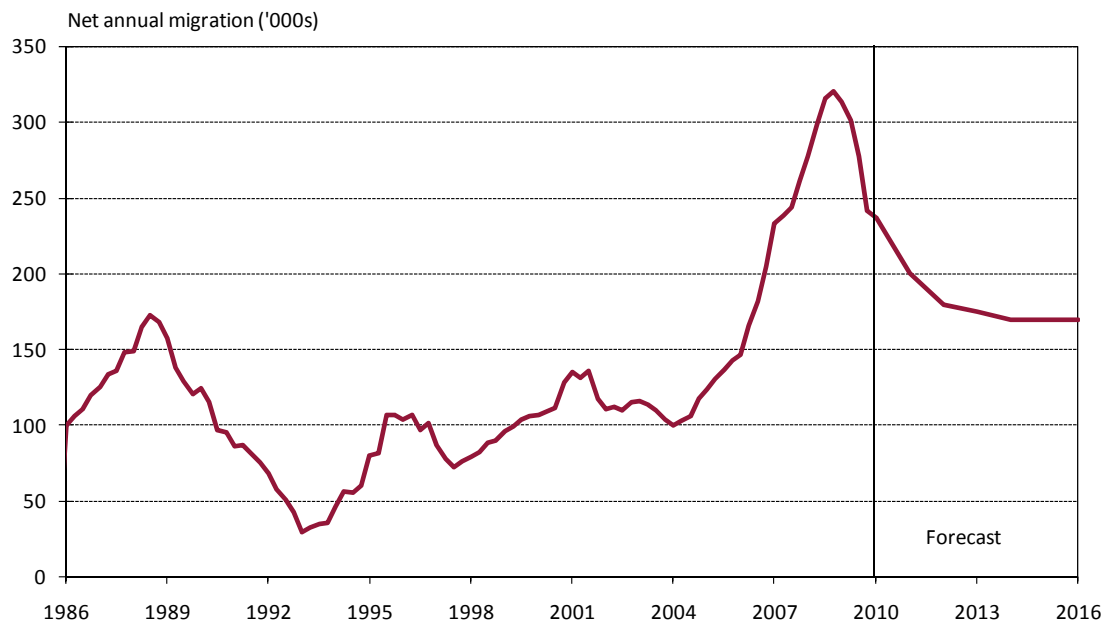
those rules had been around for the better part of a decade, there was a rapid increase in student numbers in the late 2000s.

Now, however, migration numbers are falling fast: the Australian Government cut the skilled migrant intake twice during the recent global crisis, following that up with changes that loosened the link between studying in Australia and getting permanent residency here.

The latter was a much-needed policy change, but it came just as the international education sector sailed into a perfect storm. Publicity over the treatment of Indian students, the closure of colleges leaving some students high and dry, an increase in visa costs, the change in the ease of getting permanent residency, and the rapid rise of the Australian dollar have all conspired to cut very sharply into foreign student numbers. That impact is most evident in vocational education and training courses, in English language courses, among Indian students and in Victoria (where the publicity has identified many of the problems).

Migration, having peaked at annual rates of 320 000 at one stage in late 2008, fell to 206 000 through 2010. As figure 5.1 shows, Deloitte Access Economics' demographic model (AE-DEM) points to further falls in prospect.

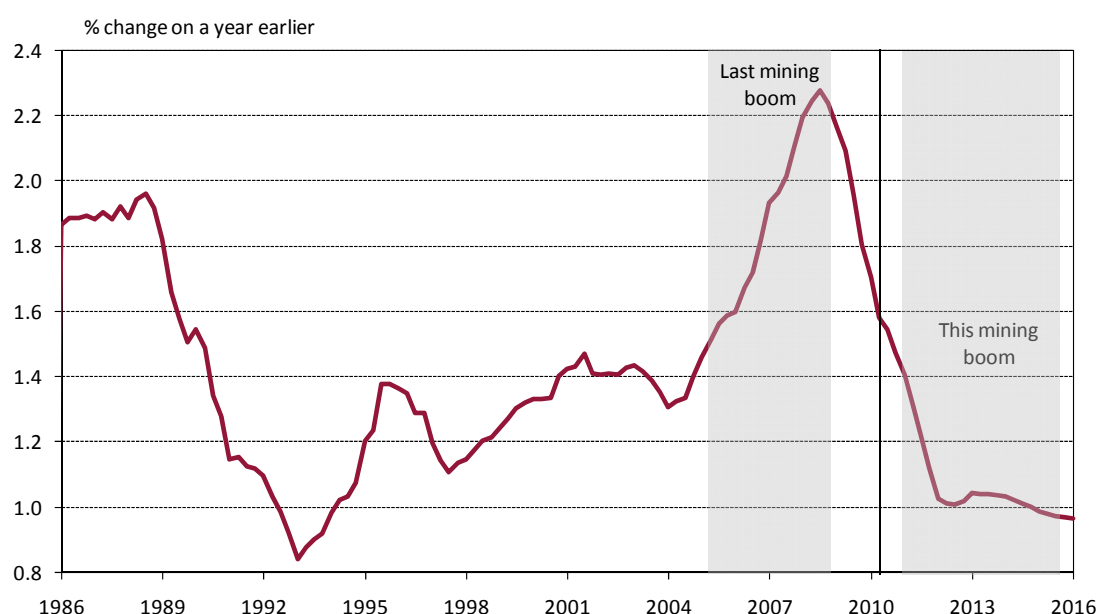
Figure 5.1 Net migration to Australia



Data sources: ABS, Deloitte Access Economics AE-DEM model.

Unsurprisingly, Deloitte Access Economics thinks population growth has already peaked, and that it will trail down alongside migrant numbers. The resultant downswing in population growth is large. Moreover, as figure 5.2 shows, it is larger still for the working-age population, given that many baby boomers will drop out of the workforce in the next few years.

Figure 5.2 Australia's working population growth rate



Data sources: ABS, Deloitte Access Economics.

5.3 Shorter term issues: Australia's 'migration equation'

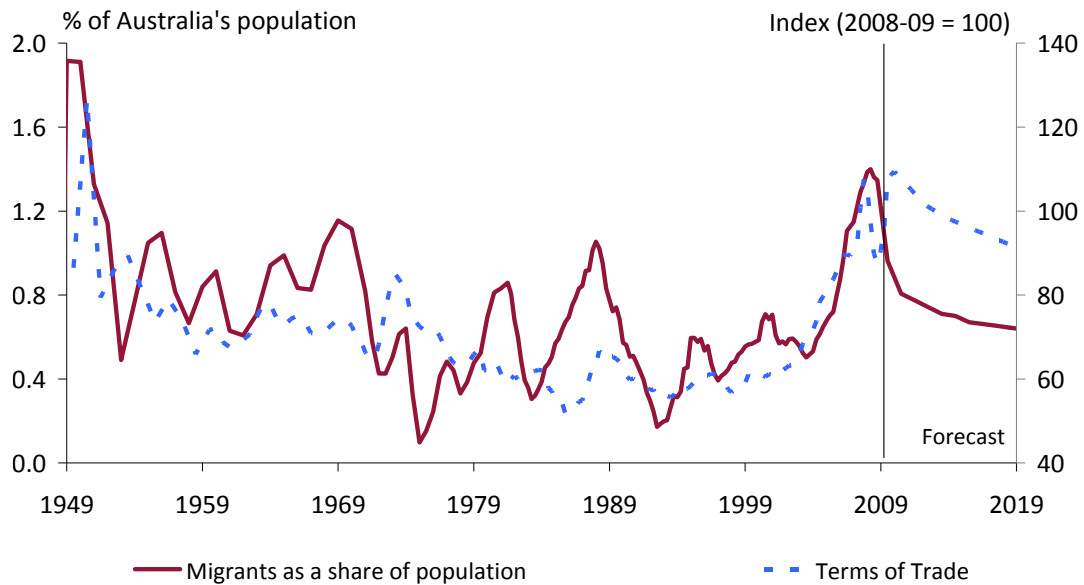
The pace of the current fall-off in working age population growth raises a macro cycle issue worth pursuing. As figure 5.3 suggests, the single best leading indicator of migration flows is the terms of trade — the ratio of export prices to import prices.

There are good reasons for that. When the world gives Australia a pay rise (as it does when it 'costs' fewer tonnes of iron ore to buy a TV)⁴, then purchasing power goes up, construction and retail spending lift, employment makes gains, unions

⁴ As the Reserve Bank Governor has noted, five years ago a shipload of iron ore was worth about the same as about 2200 flatscreen TVs. Today it is worth about 22 000, due partly to falling TV prices but more to the price of iron ore rising by a factor of six.

backpedal on their opposition to migration, business groups demand action to address developing skill shortages, expatriates find returning home more attractive, would-be expatriates are given pause, and those who face fewer restrictions on their movements — such as New Zealanders — are more likely to come.

Figure 5.3 Migration and the terms of trade — mind the gap



Data sources: ABS, Reserve Bank of Australia, Deloitte Access Economics, St. George Economics.

That explains the broad relationship — the ‘migration equation’ — shown in figure 5.3: economic good times foster migrant inflows, while downturns see those flows ease off.

Yet the chart also points to an important gap in coming years. Our national migration equation will be well out of equilibrium. The terms of trade have now bettered their 2008 peaks to stand at their highest since the early days of the Korean War. That means the economic drivers shown in figure 5.3 are underpinning demand for higher migration inflows.

Yet, as these forecasts also show, migration inflows have already fallen notably, producing a gap between the ‘economic demand for migration’ on the one hand and the ‘politically constrained supply of migrants’ on the other.

The underlying problem here is that Australia is still playing catch-up to China’s strength, and the resultant re-engineering of our economy is resulting in

considerable demand for labour. Unemployment is near 5 per cent and is projected to fall below that point in coming months.

5.4 The short-term costs of a ‘less big’ Australia

That means Australia’s labour market concerns are about to revolve around a lack of supply rather than a lack of demand.

The last time that was an issue was in 2006-07 and 2007-08, when Australia was struggling to rise to the challenge of the first phase of the resources boom. Income and employment were leaping, but so too were skill shortages, while wage and price inflation were rising.

The latter had to be doused by higher interest rates. Simply put, the engine of the economy was starting to blow smoke: demand had risen too fast for supply to cope, and the boom was spilling over from growth-related positives into a bunch of price-related negatives.

Then the global financial crisis came along, and the resultant cut to demand meant skill shortages lessened, wage and price inflation fell, and interest rates tumbled.

Yet now Australia is back amid what the federal Treasurer has dubbed ‘Resources Boom Mark 2’. Incomes are leaping higher than they did in the two years to mid-2008, and job growth over the past year has been even faster than the surging gains recorded in the first phase of the boom.

It is not quite a case of déjà vu. In the past three decades, Australia’s working-age population — those aged 15 to 64, a handy proxy for those available to work — grew by an average of 180 000 people per year.

However, there was a matching boom in migration during the first phase of the resource boom, and working-age population growth kicked up, meaning we added almost 330 000 potential workers through 2008. If Australia hadn’t done so, inflation and interest rates would have had to go higher still.

Yet, even with that supply-side surge, Australia was fast running out of workers. By early 2008 the unemployment rate was down to 4.0 per cent, skill shortages were worsening fast, and the Reserve Bank was jacking up interest rates amid a scramble to rein inflation back in.

Or, in other words, last time around even a surge in numbers of potential workers could not insulate the Australian economy from the damage that ‘too little supply’ can wreak — shortages, higher prices and higher interest rates.

Therein lies the problem. This time around the dollars are even bigger and the job gains have been even larger, but working-age population is amid a sharp slowdown.

5.5 The final result: what’s the fuss about?

The result is that the bipartisan choice to turn away from ‘Big Australia’ has left Australia ill-positioned to benefit as fully from the current boom in global commodity prices as we might have done — we will lack the ‘people power’ required.

Employers will have to ride out the renewed commodity boom with only two-thirds of the migrant flows that Australia won in 2008. Nationally, working-age population gains will slow from the peak of an extra 330 000 potential workers in 2008 to projected gains of 230 000 in 2010, 190 000 in 2011 and just 160 000 in 2012.

That is not enough, and that is a shame. In the short term, Australia looks like having too few workers to spread across too many jobs, meaning that some of the benefits of current high commodity prices will be lost in higher interest rates.

Ironically, it was also unnecessary — ‘Big Australia’ was never as big as it appeared.

Although the political landscape appears to have shifted sharply, most longer term demographic forecasts have changed little in the past year.

How can it be that the political backdrop has shifted so sharply but the numbers have not?

It is because the projections made by Deloitte Access Economics and the federal Treasury ahead of the recent policy changes had always assumed that Australia was seeing a short-term peak in its migration flows, driven up by a combination of factors that were never expected to last.

Even if the Government hadn’t cracked down on students studying in Australia as a better route to obtain permanent residency, the size of the international education sector in Australia would have levelled off anyway — meaning that the impact of

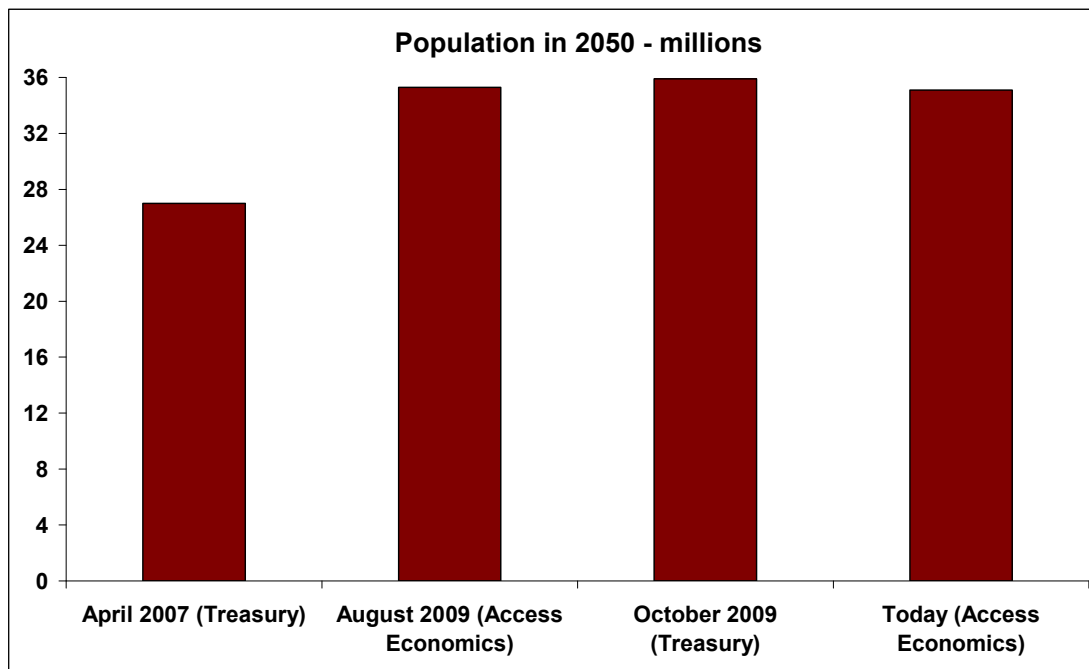
students on migrant numbers (and overall population levels) was always mostly a one-off increase as those numbers accelerated.

More broadly, all the major forecasts were always predicated on migration falling back to something like 160 000–180 000 per year. In practice, the peak in migration numbers in 2008 was higher than expected, and the political backlash it helped to generate means that the winding back of migration numbers is happening now. Yet so far the expectation is that the migration numbers will merely go close to halving from their peaks, not falling even further than that.

And that is pretty much what had already been factored into our forecasts. For example, in an August 2009 report for a major corporate client, we estimated Australia's population in 2050 at 35.3 million. In October 2009, the federal Treasury's estimate of 35.9 million was released, and promptly generated a considerable furore.

Yet, Deloitte Access Economics' latest forecast for Australia's population in 2050 is still 35.1 million (see figure 5.4).

Figure 5.4 Population forecasts made at different times



Data sources: Deloitte Access Economics, federal Treasury.

Or, in other words, it was a storm in a teacup. All that it managed to do was speed up what had always been expected to be a slowdown in migration anyway.

Sadly for those with mortgages, however, the bring-forward in the timing of the slowdown in migration means that Australia lacks the ‘people power’ to feed the job demand expected in the next couple of years. The deliberate decision to lower the speed limits on economic growth means that Australian families will — other things being equal — see less of the commodity boom show up as faster growth in our economy, and more of it show up as higher interest rates.

References

- DIAC (Department of Immigration and Citizenship) 2010, ‘How new migrants fare: analysis of the Continuous Survey of Australia’s Migrants’, www.immi.gov.au/media/publications/research/_pdf/csam-results-2010.pdf.
- Dolman, B. 2008, ‘*Migration, Trade and Investment*’, Productivity Commission Staff Working Paper, Canberra.
- PC (Productivity Commission) 2010, ‘*Population and Migration: Understanding the Numbers*’, Commission Research Paper.

General discussion

Discussion began with one participant questioning Chris Richardson's assertion that immigrants do not take jobs away from existing residents, as they contribute to the level of demand in the economy and hence 'create' their own jobs in an aggregate sense. How could this argument be reconciled with the idea that immigrants would help relieve increased demand caused by growth in the mining sector? Mr Richardson replied that the two points were not inconsistent as immigrants help fill a labour 'gap' in the short term but contribute to overall demand for labour in the longer term.

Referring back to Professor McDonald's point that a large part of the recent increase in net overseas migration was attributable to a change in ABS measurement methodology, one participant asked whether Mr Richardson's analysis of migration during the mining boom had accounted for this. Mr Richardson agreed that there were many migrants, such as overseas students, present in Australia prior to the measurement change who would not have been counted in net migration numbers, but that their capacity to assist in meeting increased labour demand was limited by their visa conditions. He also noted that overseas students might contribute in some way by filling part-time jobs, which would 'free up' others to work in the resources sector.

Another participant queried Mr Richardson's statement that the rest of the world wants Australia's population to grow faster, saying instead that the world just wants to purchase minerals at the lowest possible cost. Wouldn't the number of skilled workers required by the mining industry be limited, and if so, why should a mining boom necessarily imply a large increase in immigration?

Mr Richardson responded that increases in commodity prices have increased the exchange rate, making imported goods such as plasma TVs cheaper for Australians. Retailers consequently experience an increase in demand for their products and there are flow-on effects to increase labour demand more generally. The participant who asked the original question countered that not all Australians will be significant beneficiaries of the increased wealth generated by a mining boom, in the absence of a mineral resources tax to capture and distribute these gains.

Mr Richardson was asked about his assumption that the flow of skilled immigrants would stop in future years and that it would be insufficient to meet the increased demand for labour engendered by the resources boom. There are no legislated caps on the numbers of migrants entering on temporary business (long stay), working holiday maker or student visas, noted the participant. Mr Richardson conceded that there are uncapped visa categories that can help meet the increased labour demand, but remained concerned that an adequate supply response would not occur quickly enough to meet the need for workers on major resource projects. The participant who raised the issue then argued that there was a ‘reasonably quick’ turnaround of about 18 days, on average, between an employer’s application for an immigrant worker and a successful visa being granted.)

Professor Woodland was asked to comment on how his estimates of the fiscal impact of population ageing might vary with changes in assumptions about the actual retirement age of the population, as distinct from the age of eligibility for the age pension. A participant hypothesised that the actual average retirement age might be increasing, or increase in the future, if older people feel that ‘their money is going to run out’, and this could influence the impact of ageing on the budget.

Professor Woodland replied that his model incorporated both the eligibility age for the age pension, (assumed to be increasing over time) and the actual average retirement age (treated as endogenous and a function of individuals’ decisions to retire or not retire at a particular time). He has found that the actual retirement age does not change substantially except in response to changes in rules surrounding the age pension (such as increases in the age of eligibility or ‘taper rates’ that reduce the pension available to a person according to his or her income). He also stressed the importance of talking publicly about the trade-offs between changes to age pension eligibility rules (which cause older people to continue working beyond the age they otherwise would) and the effect on public finances.

Professor Chiswick, having spoken about the merits and potential problems associated with points-based and occupation-based methods of selecting skilled migrants, was asked for his view on combining both forms of selection in Australian migration policy. He recommended avoiding a policy setup that selected migrants on the basis of their skills, and included occupational licensing regulations that prevented migrants from using their skills. In a follow-up question, another participant wondered whether skilled migrants might find skilled employment in other fields still related to their original field of study. For example, a trained doctor who faced barriers to practising as a medical professional in the destination country might be able to work in a related science or health profession. Professor Chiswick agreed, noting that this certainly happens in Canada (which has a points-based

selection system), but reiterated that for many, their skills as doctors would go to waste.

Professor Woodland was asked about how his model incorporated human capital accumulation and depreciation over an individual's lifetime. It was suggested that if average life expectancy were increasing predictably, then rational individuals would choose to invest in human capital with lower depreciation profiles in the later part of life. Professor Woodland reiterated that his model did not currently treat decisions about human capital formation as endogenous, but that this would be a possible and potentially desirable extension to the model. Professor Chiswick suggested that modest increases in an individual's expected working life would be unlikely to significantly change human capital decision-making in the early part of the life cycle, as the difference would be small in net present value terms. Instead, increased longevity would likely manifest itself in a greater prevalence of mid-career occupational changes.

One participant asked Professor Chiswick whether the greater mobility of international capital relative to labour might 'neutralise' potential benefits from unskilled migration, as capital 'rushes in' in response to lower-cost labour. Professor Chiswick responded that he was unsure about the complementarity between skilled labour and capital in Australia, but that in the United States, it was high-skilled rather than low-skilled workers that have attracted (and retained) capital into the country.

Professor Woodland was asked to comment on whether his modelling could offer any insight on the idea that realistic changes in the level of migration would not substantially affect population ageing. He responded that his model did not distinguish between sources of population growth (natural increase versus net migration) and so he could not adequately answer this question. He did suggest that thinking about the longer term (30, 50 or more years into the future) would be more relevant for deciding whether population growth would be 'a good or a bad thing'. Mr Richardson added that he had done some modelling over a 40-year time frame in which he found that 'fairly massive amounts of migration' would be needed to keep the participation rate constant by 2050 (given population ageing).

The discussion returned to issues of how population growth would affect the wellbeing of existing residents. One participant suggested that a larger population would lead to the dilution of capital that could not be replaced at a constant cost, such as infrastructure and land. This could lead to 'crowding of facilities', which raises issues about the growth in per capita real income and growth in the living standards of the existing Australian population.

Mr Richardson was queried about his forecast of an extended period of relatively favourable terms of trade for Australia, given that historically such ‘spikes’ in the terms of trade had proven to be short-lived. He responded that while he felt that the world-wide supply response would eventually increase to match the high demand from countries such as China and India, his view was that high Australian terms of trade would remain the case for a while yet.

Another participant suggested that too little attention had been given to meeting increased demand for skilled labour through ‘home-grown’ alternatives to immigration: education and training of existing residents (particularly young people) and challenging the norm of retirement at 60 or 65. In response, Professor Woodland commented that people’s choice to retire, in his model, depended largely on age pension eligibility rules. Only when these rules are changed do people continue to work longer. Further, he said, there was limited information about workers’ productivity after the age of 65 or 70 as there are relatively few people over that age in the workforce. Professor McDonald added that even if participation rates of the existing population were at maximum levels, that would not produce the labour supply response that is possible from migration inflows.

The discussion concluded with a few final comments from Professor Chiswick on the topic of skilled immigration. Specifically: selection policies favouring skilled migration has benefited low-skilled workers by increasing their incomes, and encouraged capital formation and technological advancement. However, there is a need to ensure the potential benefits from skilled migration are realised by removing barriers to the recognition of migrants’ skills.

LIMITS TO POPULATION GROWTH?

6 Planning sustainable cities in the 21st century

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What problems related to metropolitan spatial growth are likely to be encountered in Australian cities in the 21st century? Anticipating these problems, how should the federal, state and local governments plan to deal with them? Will metropolitan growth be consistent with ‘sustainability’ (which I use imprecisely as ‘steady improvement in the quality of life’)?

I am not comfortable with ‘Big Think’. I decided instead to write up a series of ‘Little Thinks’. This paper will therefore lack the coherence of Big Think, but will hopefully contain a few ideas that are interesting and practically useful.

Let me start with a statement of ‘where I’m coming from’. Intellectually, I am very much a child of my generation. In the 1960s, there was an explosion of interest in urban problems that grew out of the idealism and radicalism of the time: Lyndon Johnson’s Great Society program, Michael Harrington’s *The Other America* (1962), the civil rights movement, Jonathan Kozol’s *Death at an Early Age* (1967), and the urban race riots. The low point for US central cities was the 1970s and 1980s, but in the 1960s the rot had clearly set in. The white flight to the suburbs, hastened by blockbusting, was almost over. Blacks were excluded from most suburbs by racial discrimination. Many of the inner suburbs had tipped from being 90 per cent white to 90 per cent black. Large segments of central cities became crime-ridden ghettos, and the situation was made worse by the sharp fall in downtown property values, which led to the erosion of the property tax base and a decline in the quality of public services (Mieszkowski and Mills 1993).

My undergraduate degree was in ‘urban studies’. MIT had no undergraduate program in urban studies at the time, so I put together my own program with an

¹ I would like to thank John Daley and Kevin O’Connor for their valuable comments as discussants of the paper at the Roundtable.

amalgam of courses in urban planning (then only a graduate program), architecture, civil engineering and economics. When I started graduate studies in the early 1970s, the general equilibrium revolution in applied microeconomic theory was in full swing. It coloured the perception of my generation of economics graduate students in two distinct ways. First, it caused us to look at economic problems from the perspective of the entire economy rather than from the perspective of single-market partial equilibrium analysis. Second, its foundation is axiomatic general equilibrium theory (Debreu 1959), which assumes all markets to be perfectly competitive, and whose central result is the First Theorem of Welfare Economics. Even though we were made aware of the restrictiveness of the theory's assumptions, through the theory of market failure (Bator 1958; Salanié 2000) and the theory of the second best (Salanié 2003), we nonetheless came away with a deep appreciation for the virtues and even the beauty of organising the economy through markets.

Urban economics grew out of the mixing of these two developments — reformist concern for the plight of the American central city, and the general equilibrium revolution in applied microeconomic theory. And their mixture accounts for the field's peculiar combination of left-wing concerns and qualified faith in the efficacy of markets, and for its benevolent planner perspective and lack of emphasis on political constraints.

This paper addresses facets of the opening questions from the perspective of urban economics and from the perspective of developed countries. Most of the urban drama in the 21st century will take place in developing countries, where urban populations are projected to increase from 2 billion in 2000 to 4 billion in 2030 and 5.5 billion in 2050 (Angel et al. 2010). In developed countries, in contrast, the urban population is forecast to stabilise at around 1 billion. In being land rich, Australia, Canada and the United States constitute a distinct subset of the developed countries. Since there is considerable uncertainty about how much immigration each country will choose to permit, metropolitan planning will need to accommodate alternative population scenarios.

I apologise in advance for the provincialism of my essay. It draws little on the Australian experience and perhaps too much on the Los Angeles experience.

6.1 Trends in urban spatial structure

Over the past decade, satellite imaging has revolutionised the measurement of urban spatial structure (Angel et al. 2010; Burchfield et al. 2006). We can now estimate coverage and floor-area ratios at a high degree of resolution and with reasonable accuracy across an entire metropolitan area.

In almost all cities, population and average income are increasing, and the money price of driving is decreasing. These factors together have generated strong empirical regularities with respect to trends in urban spatial structure.

1. Between 1990 and 2000, the mean population density of a global sample of 88 large ‘cities’ (metropolitan areas) declined at an average annual rate of 2 per cent (Angel et al. 2010). For a sample of 20 US cities between 1910 and 2000, average annual density decline was 2 per cent, too.
2. For a global sample of 119 large metropolitan areas in 2000, the elasticity of average population density with respect to population is 0.20, of average population density with respect to per capita income is -0.40, and of average population density with respect to the gas price is -0.13 (Angel et al. 2011, Table V, Model 3).
3. The population density gradient (Clark 1951 — the proportional rate at which population density falls with respect to distance from the metropolitan centre) has been falling consistently in virtually all metropolitan areas since data were available (widely documented, and reported in Anas, Arnott and Small 1996).
4. In US cities, suburbanisation started in the mid-19th century, with the advent of the railway suburb. The suburbanisation of the population continued steadily until World War II, and then accelerated in the immediate postwar period. The suburbanisation of jobs lagged the suburbanisation of the population. By 1990, in the 100 largest metropolitan areas in the United States, the average household lived 8 miles from the metropolitan centre (Glaeser and Kahn 2001), while the average job was located 7 miles away. Of course, these distances increase with the metropolitan area population. The important regularity is that jobs are now almost as decentralised as residences.
5. Metropolitan areas are becoming increasingly polycentric (Anas, Arnott and Small 1998; Gordon and Richardson, 1986). An employment subcentre is defined as a set of contiguous zones (census tracts, traffic analysis zones etc.), each having an employment density exceeding d per unit area and having combined employment exceeding D . Within a typical metropolitan area, as time proceeds employment subcentres become more numerous, and the ratio of aggregate employment in employment subcentres outside the traditional central city centre to that in the traditional city centre increases. One may employ alternative definitions of subcentres, and the same applies.
6. One can measure employment dispersion in terms of the ratio of employment outside subcentres to total employment. By this measure, employment is becoming increasingly dispersed (Gordon and Richardson 1996).

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7. Over the past 50 years, US metropolitan areas have been steadily less segregated in terms of race and religion, and steadily more segregated in terms of income (Madden 2003).

6.2 Empirical regularities with respect to travel

Trip tours and trip chaining are becoming increasingly important. When looking at the data, one must therefore pay careful attention to how a trip and the nature of a trip are classified. An increasingly small proportion of travel is on the journey to and from work, whether directly or as part of a trip chain.

The era of massive freeway building ended around 1970. Since then, the population of US metropolitan areas has increased steadily, as has mean income. With the monocentric city model in mind, for auto commuters one would expect average commuting distance to have increased, average travel speed to have decreased, and average commuting time to have increased. Paradoxically, however, while average commuting distance has indeed increased, average travel speed has increased, so that average commuting time has increased only slightly. Making the paradox even more paradoxical, the average time lost due to congestion has been increasing steadily (Gordon and Richardson 1989; Texas Transportation Institute 2010)

The paradoxes have not been completely resolved, but three elements seem to be particularly important. First, since jobs have suburbanised, an increasingly large proportion of commutes are from suburb to suburb. Second, travel speeds in uncongested to moderately congested traffic have increased significantly due to improvements in automobile safety and design. Third, the length of the rush hour has increased.

One can imagine several scenarios in which a metropolitan area's population and average income grow at a constant rate, and yet commuting times remain constant. In the first, which I present to my undergraduate class, one can imagine a situation in which the city remains monocentric and commuters will not tolerate a commute of more than 30 minutes. Combining this simple rule of thumb with technological improvements in transportation (the horse-drawn streetcar, the electric streetcar, the subway, the bus, and the car) actually goes a long way to explaining the evolution of urban spatial structure in US cities over the past two hundred years (Warner 1962). In the second, the city remains monocentric and investment in transportation infrastructure and technological improvements in transportation are such that mean commuting time remains constant. In the third, the city remains monocentric and the length of the rush hour increases. In the fourth, the metropolitan area expands outwards with no improvements to the existing road system but with continual

additions to it at the urban periphery (Gordon and Richardson 1989). Employment subcentres emerge at the urban periphery at such a rate as to keep mean commute times unchanged. In this sense, there are several sustainable ways in which a metropolitan area can keep growing in population and getting richer.

6.3 Go with the flow: rechannelling, not opposing, market forces

Economists and planners often disagree. Economists have qualified faith in the operation of markets and favour pricing solutions. Planners, especially those in the British tradition, are sceptical of the market, find many aspects of market outcomes unlovely (in the two senses of unjust and unaesthetic) and have traditionally favoured regulation. Over the course of my career, there has been a partial convergence. When I started teaching, planning professors at Queen's University urged their students not to take my urban economics course on the grounds that I would corrupt them. That would no longer happen. The ideological divide between Marxists and non-Marxists is no longer at centre stage. And the historical experience of the past 75 years has persuaded many of those who were attracted by socialist ideals that market-based economies, warts and all, tend to work better than planned economies. At the same time, the recent financial crisis has caused economists to be less arrogant and to acknowledge that economic liberalism can be carried too far.

There seems to be a broad consensus that economic policy generally and metropolitan planning in particular should *harness* or *rechannel* market forces rather than oppose them, though there remains considerable disagreement about how principle should be translated into practice. In the context of economic development, the Washington Consensus of the 1980s and 1990s has largely broken down, and the World Bank is now seeking a middle way, as evidenced by the work undertaken under the aegis of the Commission on Growth and Development (which includes a volume on urbanisation and growth).

The virtues of markets are manifold. Markets deliver goods to those who value them the most. Markets solve a huge coordination problem with low transaction costs. Markets efficiently aggregate information (at least under ideal conditions). When prices are right, markets create incentives for individuals to act in the social interest (Adam Smith's 'Invisible Hand' — Smith 2009). Markets provide the incentives for individuals to work hard, to work on those things that are socially valued, and to undertake the invention and innovation that underlies economic growth. Markets are compatible with consumer sovereignty, individual freedom, civil liberties and democratic institutions.

But markets also fail in small ways and in large. Even when markets operate efficiently, their outcomes may be highly unjust and inequitable, and distasteful in other ways. Markets are also subject to the classic market failures — public goods, externalities and increasing returns to scale (Bator 1958) — as well as the more modern failures associated with asymmetric information and coordination failure (Salanié 2000).

Good economic policy entails redistributing income and equalising opportunity to make society more just, and correcting market failure through taxation, regulation and the creation of new markets.

6.4 In defence of consumer sovereignty

Another traditional bone of contention between economists and planners is respect for consumers' tastes. Microeconomic theory takes consumer tastes, as described by utility functions, as exogenous, and, excepting addictions, respects the economic choices that people make, conditional on their facing prices that reflect true social cost. This may entail a teenager 'wasting' his pocket money on the latest designer running shoes and rap music, or a middle-class family 'squandering its income' on a tasteless and unnecessarily large home, replete with the latest appliances, rather than buying goods that celebrate the beauty of nature or the glory of the human spirit, or giving their money to charities dedicated to social justice. In contrast, many planners, especially those in the British tradition, are willing to impose their view of the good life on others.

Given my tastes, I wish that others did not waste their money. At the same time, given theirs, they likely wish that I did not waste mine. I might feel happier if I could constrain their choices or force them to consume what I think would be best for them, but I would certainly not feel happier if they were to constrain my choices or force me to consume what they think would be best for me. Behind the veil of ignorance, where not only my endowments but also my tastes are revealed after the veil is lifted, I would choose that everyone respect others' tastes rather than have a subset impose their tastes on others.

This line of argument is essentially the same as that which has been used to defend cultural relativism and moral relativism. Taste and cultural relativism lead to stimulating diversity and pluralism. Moral relativism is constrained by the need to have a legal system based on a consistent set of beliefs.

6.5 Getting the prices right

Consider a person who has to decide how many units of a commodity to consume. It is almost a truism that, if he faces the full social cost of each unit and enjoys the full social benefit, he will choose to consume the socially optimal amount. In a perfectly competitive economy, with no externalities and with complete markets, these conditions are satisfied. Under these circumstances, the price of a good is equal to the marginal social cost of its production; thus, when purchasing the good in a competitive market, the individual does indeed face the full social cost. Since he chooses the number of units to purchase such that the benefit he derives from the last unit equals the price, his marginal private benefit equals the price of the good. And since there are no externalities, the marginal social benefit equals his marginal private benefit.

Unfortunately, of course, externalities are pervasive, few markets are perfectly competitive, and many markets are absent. The benevolent planner who aims to improve the performance of a market economy will attempt to correct these market failures through taxation, regulation and the creation of new markets.

There is an ongoing debate within public economic theory concerning how to integrate equity and efficiency. When I started my graduate studies, I was taught that equity can be dealt with through lump-sum redistribution, in which case efficiency can be pursued as an independent goal. It was then pointed out that lump-sum redistribution on the basis of need is impossible, since need is unobservable and, if any proxy of need such as income is employed, individuals will adapt their behaviour in distortionary ways to appear more needy. A set of papers then appeared that argued for distributional considerations to be taken into account in deciding on commodity tax rates, public sector prices and the level of public goods. It was then argued that, under certain not unreasonable conditions, an optimal income tax redistributes income as efficiently as possible, so redistribution by other means is both unnecessary and distortionary.

The current majority view seems to be that commodity tax rates, public sector prices and the level of public goods should be chosen without regard to their distributional effects (Kaplow 2008). It is interesting that William Vickrey, who was very much a champion of the poor, argued for marginal cost pricing, without regard to distributional considerations (Arnott et al 1994).

6.6 Optimal metropolitan spatial structure

To start, consider a large, homogeneous plain that is uniformly endowed with resources and population. To simplify, suppose there is a single, generic consumption good that is produced in factories using the resources and homogeneous labour. The optimal spatial structure maximises the per capita consumption of the good (or, since population density is given, per unit area of land). If there are constant returns to scale in production and if resources are costly to transport to the factory, the optimal spatial structure is a ‘backyard economy’, in which people are distributed uniformly over space, each operating his own miniature factory using resources from his personal ‘market area’.

A ‘non-trivial’ spatial structure requires either that space be inhomogeneous in terms of transport costs (rivers and oceans) or resource endowments, or that production occurs under increasing returns to scale (these correspond to Cronon’s first and second nature; 1991). The earliest cities may have formed on the basis of unequal resource endowments, leading to river trade, combined with increasing returns to scale in loading and unloading, or of increasing returns to scale in grain storage or religious observance. Until the Industrial Revolution, most large cities were port cities that arose on the basis of economies of scale in shipping, with trade deriving from unequal resource endowments. In the early Industrial Revolution, economies of scale internal to the individual plant became of prime importance. With the exception of Rome, whose size was partially attributable to economies of scale in the administration of the Roman Empire and partly to its receipt of tribute, no city up to 1800 had a population exceeding one million (Bairoch 1988). Thus, the general opinion is that neither unequal resource endowments combined with economies of scale in shipping, nor economies of scale internal to the individual plant, can explain the modern city.

Three general factors are responsible for the rise of today’s large cities. The first is technological improvements in goods transportation; goods transportation costs have fallen by a factor of 100 in the past two centuries (Glaeser and Kohlhase 2003), and there has been a series of technological improvements in intra-urban people transportation that has permitted the areal expansion of the city (Warner, 1962). The second is technological improvements in building construction. The third is an increase in the complexity of production combined with *external economies of scale*. External economies of scale are economies of scale that are external to the individual plant, but internal to a firm, an industry in a particular city, or the city as a whole (Fujita, Krugman and Venables 1999; Henderson 1974). With external economies of scale, the individual firm’s cost per unit of output is independent of how much it produces, but its units cost less the larger the agglomeration in which it is located because of the increased labour specialisation

possible with a larger labour pool, the increased specialisation in intermediate goods possible in a larger city, and collective learning by doing (Marshallian economies of scale). Since the individual firm contributes to the size of the agglomeration and therefore reduces the unit production cost of other firms in the agglomeration, it benefits them. And since the firm is only partially compensated by the other firms, the benefit it confers on them is, partially at least, an uninternalised positive ‘agglomeration’ externality (Fujita and Thisse 2002). Note that external economies of scale are consistent with each firm being a price taker.

The modern view, as reflected in the literature on the new economic geography (Fujita, Krugman and Venables 1999; Henderson and Thisse 2004), is that the spatial pattern of production, whether at the global, national, regional or metropolitan scale, derives from the interplay between the agglomerative or centripetal force of external economies of scale and the deglomerative or centrifugal force of transport costs.

6.7 Potentially important market failures in metropolitan spatial structure

The centrepiece of the new urban economics is the monocentric city model (Alonso 1964; Brueckner 1987; Mills 1967; Muth 1970; von Thünen 1827). In that model, residential lots surround a point central business district (CBD), and each day each of the fixed number of residents commutes to the CBD to work and shop. In the basic model, production occurs under constant returns to scale and commuting costs are not subject to congestion. The First Theorem of Welfare Economics states, ‘Any competitive equilibrium is Pareto optimal.’ There is an analogous theorem for the monocentric city model that ‘Any monocentric city equilibrium is Pareto optimal’ (Mirrlees 1972). This theorem is not implied by the First Theorem since the structure of the economy is different, but its proof is much the same. The theorem is important. First, it indicates that, with constant returns to scale in production at a point CBD and absent congestion externalities in transportation (and other potential sources of externality that are not in the model), in the monocentric model at least, a competitive land market allocates space efficiently. Second, it points to two potentially important sources of market failure in more realistic urban economies — economies of scale in production and uninternalised congestion externalities. Conventional wisdom is that these are indeed the two most important market failures with respect to metropolitan spatial structure.

Auto congestion

When auto congestion is introduced into the monocentric city model, if the congestion externality is internalised, for example through the application of an optimal congestion toll, the economy is efficient. If, however, the congestion externality is not internalised, then transportation is underpriced, and cities become inefficiently sprawling and low density (Kanemoto 1980; Solow 1972).

External economies of scale/agglomeration externalities

Remove auto congestion, add economies of scale in production, and endogenise firm location. Each firm then locates so as to maximise profits, taking as fixed the location of households and other firms. If the economies of scale to firms are internal to firms, the market power problems associated with natural monopoly are encountered, and firm behaviour must be modelled using the tools of game theory. If the economies of scale are external to firms and are localised so that a particular firm's productivity depends on its proximity to other firms, equilibrium exists but its properties are quite different from those of the monocentric city model (Fujita and Ogawa 1982). First, there may be multiple equilibria. Second, for at least some of those equilibria, cities are polycentric. Third, equilibrium is inefficient for the reason noted above — the uninternalised positive agglomeration externality. Furthermore, since agglomeration externalities are by their nature very difficult to measure, unlike the congestion externality, there is no simple policy remedy to internalise them. Remarkably, no-one has undertaken a thorough investigation of how external economies of scale distort metropolitan spatial structure. Imagine plotting the net marginal private benefit to a firm from joining an agglomeration of employment size n compared to operating in isolation. Since the marginal social benefit curve lies above the marginal private benefit curve, too few firms join agglomerations. It is also reasonable to conjecture that, if all subcentres are of the same size and if all firms produce in subcentres, then equilibrium will entail too many subcentres of suboptimal size. But all subcentres are not of the same size, and there may exist multiple equilibria. Adding congestion externalities to the mix further complicates an already very complicated problem.

How should the policymaker respond to this vexing problem? There is no right answer. Like most urban economic theorists, my gut reaction is that the planner should internalise those externalities that he can, but the scientific basis for this prescription is weak.

Migration

Migrants generate both positive and negative externalities. By increasing the number of workers in a city, via external economies of scale a migrant likely increases the productivity of existing workers. And by increasing the population of the city, her presence increases congestion in the city. There may also be fiscal externalities associated with migration. If these externalities are efficiently priced, her private decision to migrate is socially optimal. But, in fact, neither the positive agglomeration externality nor the negative congestion externality is fully internalised.

It is therefore not possible a priori to say whether there is too much or too little rural–urban migration. The older literature on rural–urban migration, which was heavily influenced by the Harris–Todaro model (1970), neglected the agglomeration economy and so argued that rural–urban migration is excessive. Partly for this reason, almost all developing countries have discouraged rural–urban migration. There is now a new view of rural–urban migration, based on the new economic geography, which takes the agglomeration externality into account and sees cities as engines of growth (Duranton 2009). According to this new view, the largest city in a country tends to be too small.

In most developed countries, net rural–urban migration is now small, and the important internal migration occurs between regions and within systems of cities in an urban hierarchy. How the actual distribution of population differs from the optimum then depends on how the size of the uninternalised portion of the net migration externality varies across regions and across cities in the city-size distribution (Papageorgiou and Pines 1999). There is no consensus in the literature on how the equilibrium and optimal city-size distributions differ. The literature therefore suggests that government intervention to alter the city-size distribution is unwarranted.

How rapidly Australia's cities grow over the next decades will depend first and foremost on the level of immigration. Australian policy makers will need to plan their cities' growth under alternative population scenarios.

Pollution

From a conceptual point of view, pollution can be dealt with straightforwardly by charging polluters for the social cost of the pollution they generate. One practical problem is monitoring, but the biggest problem is overcoming the opposition of industrial polluters, particularly during hard times when the threat of job losses is a real one. The Los Angeles metropolitan area has been remarkably successful in

reducing the level of air pollution. If the political will is there, the problems can be managed.

Water

In California, the management of water has been and continues to be a major problem. The problem is a political one. The Central Valley's agriculture consumes a significant portion of the state's water at very low prices, which results in rice being produced in semi-desert conditions. Conceptually, setting the price of water at marginal social cost and following sound cost-benefit practice in managing the water infrastructure system can straightforwardly solve the problem.

Land assembly

Through its exercise of eminent domain, government has an advantage over the market in land assembly. The market failure derives from the inefficiency of the game between the assembler and the property owners (Strange 1995).

6.8 Densification

As a city's population grows and as its residents become richer, the demand for floor area increases. The market deals with this increased demand by a combination of an increase in rent and an increase in the quantity of floor area. The growth in floor area can occur either horizontally, vertically or through infill and add-ons. I live in Riverside County, the population of which almost doubled between 1990 and 2010, from 1.17 million to 2.14 million. The current economic crisis notwithstanding, the population is expected to double again in the next 40 years. Thus, it is natural for me to think of horizontal expansion. But increases in floor area can also be achieved by increases in the floor-area ratios of already developed areas, through redevelopment at higher density, infill and add-ons — a process called *densification*. Vancouver's West End went through the most dramatic densification that I am familiar with, with stately mansions on large lots being replaced by 30-storey residential high-rises. Cities choose whether and how they wish to densify. Vancouver has chosen to permit the densification of some neighbourhoods but not of others. Boston has chosen to allow densification of the city's two downtown cores — the financial district and the Prudential-Copley area — but not of any of the downtown residential areas.

6.9 Zoning issues and other land-use controls

In an undergraduate urban economics examination, I recently posed the question, ‘What would be the result of removing zoning?’ Almost to a person, the students answered, ‘Chaos.’ (Evidently, I had not done a very good job in corrupting them). That is not the right answer. Land would go to the ‘highest use’ — that use which bids the most for it — but because of externalities, not necessarily its best use. Zoning was originally introduced with the intention of separating incompatible land uses.

Most cities in the United States have Euclidean zoning. It is called Euclidean zoning not after the geometer but after *Village of Euclid, Ohio v. Ambler Realty Company*, which established the constitutionality of zoning. Euclidean zoning entails the rigid separation of land uses into residential, commercial and industrial districts (and often separation between subcategories as well). Euclidean zoning was so rapidly adopted because it is easy to implement and does indeed achieve the goal of separating incompatible land uses. But Euclidean zoning is widely criticised today for giving rise to a dull uniformity of residential neighbourhoods, for separating housing and jobs, and for being insufficiently flexible and insufficiently adaptable to changed economic circumstances. Changes in land use are permitted, but through a lengthy process of zoning variances being granted by local zoning boards. Many US cities are now making their zoning policies more flexible, allowing Euclidean II zoning (which some define too specifically as hierarchical zoning), incentive zoning (where variances are granted when a proposed project meets development goals), and smart zoning (which is associated with smart growth, and of which cluster zoning is one type). Neighbourhoods that were dull and uniform at the time of initial construction become more interesting with improvements and more varied land use. A similar argument can also be made for greater flexibility in the design and application of the land use master plan. Flexibility is especially important in metropolitan areas where future population growth is uncertain.

Many suburban towns in the United States use land-use controls to exclude the poor and other undesirable elements. This is referred to as NIMBYism (Not In My Back Yard). When I visited Stanford in 1990, I encountered an extreme example. A wealthy suburb close to Palo Alto zoned out old folks’ homes solely on the basis of a hedonic study that found them to reduce property values. The term *exclusionary zoning* refers to the use of zoning with the intention of excluding certain groups from the community. The most familiar method of exclusionary zoning is minimum lot size zoning. In the Boston metropolitan area, some suburban communities where land prices are \$500 000 per acre impose minimum two-acre lot sizes. The rich may want to exclude the poor either because, under property taxation, the poor would pay less for the same level of public services (Hamilton 1975; Tiebout 1956), or

simply to keep out the riffraff, who depress property values. Newton uses wetland zoning to exclude affordable housing projects. Exclusionary zoning is unhealthy in separating the rich and poor, and distorts urban spatial structure. It also seems (the phenomenon is well documented empirically but the theory has not been well worked out) to steepen the supply curve for suburban development (Glaeser, Gyourko and Saks 2005; Saiz 2010), not only driving up property prices and rents throughout the metropolitan areas to inefficiently high levels, hurting the poor, but also increasing the amplitude of real estate cycles. In southern California, NIMBYism seems to be less of a problem. There the rich exclude the poor more through the use of gated communities (Blakely and Snyder 1997). Gated communities allow the rich to enjoy their preferred level of public services without subsidising the poor's consumption of them, and keep the riffraff out without impeding suburban expansion.

6.10 Impact fees

An *impact* or *development fee* is a fee that is imposed by a local government on a new or proposed development to cover a portion of the costs associated with the delivery of public services to the development. Impact fees have become very widespread in the United States. While the level of the fees may be prespecified, in most cases the actual fees paid by a developer are the outcome of negotiation between the city and the developer.

You have probably heard the sorry story of California's Proposition 13. A property tax revolt led to Proposition 13, which imposed a ceiling on the property tax payable on a property of 1 per cent of the most recent sales prices (with an upward adjustment of 2 per cent per year, as well as increases for improvements). This generated a fiscal crisis for local governments, which collectively agreed to give the state their property tax revenue in exchange for equalised state funding for K–12 education. One result has been a steady deterioration in the quality of K–12 education (the influx of Mexican-Americans is another cause); another has been that local governments are left with little room for budgetary manoeuvre. Fees and fines, including impact fees, have increased sharply (in Riverside, the fine for not fully stopping at a red light on a right turn is \$500). I bought an older home for which the effective property tax rate at the time of purchase was slightly above 1 per cent. If I had bought a new home, the effective tax rate, including impact fee payments, could have been as high as 3 per cent. Thus, impact fees are substantial in California.

Should impact fees be encouraged or discouraged? Unfortunately, I know of only one paper that models impact fees reasonably well, and its treatment is far from definitive (Brueckner 1997). There are three general ways of financing the

infrastructure for a new development: from current revenues, through bond financing and from impact fees. Ascertaining which is best is difficult, since several separate issues are involved:

1. In the first best (that is, when there are no other distortions present), which of the methods results in the efficient timing and density of development, and in efficient migration?
2. Suppose, for the sake of argument, that individuals are infinitely lived, that a city's population keeps growing by natural reproduction, and that all the houses in new subdivisions are bought by first-time homebuyers. Does it make a difference how the infrastructure for the new subdivisions is financed?
3. Suppose instead that there are overlapping generations. Not only current residents but also future residents will occupy a new housing unit. Does it make a difference how the cost of financing infrastructure for the new subdivisions is split across generations, and, if so, why and how?
4. How do existing distortions, such as those due to property taxation, affect the comparison of the three financing modes?

6.11 Urban transportation

There is a broad consensus among urban transportation economists that mass transit is characterised by significant economies of scale. The economies of scale derive not from the technology of operations and infrastructure construction, but from *economies of service density and service frequency* (Mohring 1972). Consider the effects of doubling the number of bus travellers and doubling the density of routes, holding service frequency and fares fixed, and suppose for the sake of argument that total fleet and operating costs double. Since travellers have to walk less far on average to get to a bus stop, the average full price (time and money costs) of a trip falls. An analogous argument applies if instead service frequency is doubled and the density of routes is held fixed. Since travellers have to wait a shorter time for a bus, the average full price again falls. A recent article in the *American Economic Review* (Parry and Small 2009) documents the quantitative importance of these economies of scale. They do not alter the appropriate method of analysis for investment in mass transit.

These economies of scale may result in multiple local optima. In the Los Angeles metropolitan area, only about 2 per cent of trips and only 1 per cent of trip-miles are taken by mass transit. Service density and service frequency are low, and, because of a half-century of freeway building and federal subsidisation of auto travel, population densities are low compared to metropolitan areas of comparable size. In

such a setting it is very difficult to substantially increase the mass transit modal share. The State of California is certainly trying, however. About one third of the state's transportation budget over the past 20 years has gone to mass transit. But even with this level of investment, and despite the heavy freeway congestion (because the recession has hit California particularly hard, Los Angeles is no longer the city with the greatest number of average hours of congestion delay per auto commuter; Texas Transportation Institute 2010), it is very unlikely that the travel behaviour of Los Angelinos will be much changed.

The mass transit share is significantly higher in Australian cities. Nevertheless, it will still be difficult and costly to substantially increase the mass transit modal share. The mass transit corridor development approach, which allows an individual to lead a convenient routine without driving, seems the way to go, since it exploits the economies of scale inherent in mass transit.

Our understanding of the macroscopics of traffic congestion has increased substantially in recent years, thanks primarily to ongoing work being done at the Institute for Transportation Studies at the University of California, Berkeley. Broadly speaking, freeway traffic behaves much as the simple bottleneck model (Vickrey 1969) assumes (Cassidy and Bertini 1999). Despite the stop-and-go nature of traffic flow, at high traffic densities the average flow along a section of freeway is close to capacity. In contrast, downtown traffic congestion can be 'hypercongested', in the sense that, at high densities, average flow falls as density increases (Geroliminis and Daganzo 2008). This points to the critical importance of implementing downtown traffic management policies that eliminate recurrent high traffic density and deal effectively with high density due to non-recurrent events (such as traffic accidents, inclement weather and road construction). Cordon/area tolling has been implemented successfully in London and Stockholm, and its implementation is being actively considered in several other cities.

6.12 Build thy house upon a rock

A regular feature on the nightly news is some disaster for which a state of emergency has been declared. Disaster victims whose homes have been damaged or destroyed almost invariably receive assistance (or at least promises of assistance) from the various levels of government. But in most cases, the victims' homes would not have been destroyed if they had not built on a flood plain, or had built their homes to withstand an earthquake, hurricane or tornado. And if they had fully insured, they would have been able to get adequate compensation to build a new home. When I moved to California, I was advised *not* to purchase earthquake insurance on my home since the reduction in expected compensation I would get

from the government in the event of an earthquake would more than offset what I would get from a private insurance company after the deductible.

Private insurance against disasters is often expensive because, unlike many accidents, the risk associated with disasters tends to be systematic. Private insurers can sell some of this systematic risk on reinsurance markets, but reinsurance markets are highly imperfect. In some states, private insurers refuse to provide certain types of insurance at any price. Here is a clear instance of market failure. The federal government should intervene by providing disaster insurance itself at actuarially fair rates.

6.13 The adverse effects of macroeconomic instability in real estate markets

I live in Riverside, which is about 50 miles southeast of Los Angeles. The city and the county are about 50 per cent Hispanic. Property prices have fallen to about half their level in 2007, and below replacement cost. Since construction is the main industry in the county, the effects on the local economy have been devastating. Unemployment rose from a low of about 4.5 per cent in early 2006 to a high of over 15 per cent. In Riverside, on average about one property per block has been foreclosed.

The major cause was excessively generous mortgage underwriting. Republicans allowed it to happen because they are opposed to financial regulation, and Democrats because they want the poor to live in owner-occupied housing. Another cause was the underpricing of teaser and sub-prime mortgages in the secondary mortgage market. The episode has taught us painful yet valuable lessons. One is that mortgage markets need to be prudentially regulated (Canadian housing markets did not experience the same problem). Another is that homeownership is not necessarily the best option for poor households, since it exposes them to so much risk.

6.14 Metropolitan computable general equilibrium models

Getting an urban policy adopted entails persuading a majority of the interested parties, including voters directly or indirectly via politicians, that the policy is in their interest. This entails quantifying the effects of the policy on different segments of the population. Computable general equilibrium (CGE) models are particularly useful for this purpose because they potentially take into account all of the many

channels through which a policy affects a metropolitan area, and permit as much detail as the available data and computational speed permit.

CGE models are widely used in tax and trade policy analysis, but their use in metropolitan planning is in its infancy. Metropolitan CGE models have the same conceptual structure as other types of CGE models, except that the land and property markets at different locations are of central importance. Also, because of the durability of structures and infrastructure, and because homeowners attach so much importance to the market value of their homes, dynamics are of central importance, too.

In the past few years I have been participating in a team (Alex Alas, University of Buffalo; Michael Goodchild, University of California, Santa Barbara; and Rick Peiser, Harvard University, are the other principals) that is developing a CGE model of the Los Angeles metropolitan area, called LA-Plan.² The model focuses on forecasting land use, transportation and environmental quality.

The model is constructed on the basis of deterministic urban dynamic, general equilibrium theory under perfect foresight. In each period, taking the infrastructure and the stock of structures by location as given, the model solves for a temporary competitive equilibrium in which prices adjust to clear all markets, including markets for the different property types at each location. Individuals' probabilistic (due to idiosyncratic tastes) choices of residential location, work location, shopping location and travel mode, as well as their demand functions, are based on utility maximisation. Firms' probabilistic (due to idiosyncratic costs) choice of location, as well as their net supply functions (which include their input mixes), are based on profit maximisation. Between periods, developers make probabilistic (due to idiosyncratic costs), profit-maximising conversion decisions (for example, constructing at a particular density on vacant land, upgrading a building's quality, adding on, demolishing an existing structure and redeveloping at a different density). Zoning restricts the set of allowable conversions. In each period, the asset values of vacant land and property by structure type equal the expected discounted value of net rents. Thus, the model's theory is sophisticated and fully grounded in standard microeconomic theory.

The practical implementation of the model is a mammoth undertaking. First, there is data collection, cleaning and documentation, and design and implementation of the GIS data management system. We have property tax assessment data for every parcel of land on the assessment rolls in the Los Angeles metropolitan area, with information on property characteristics, as well as public census data, and several

² www.la-plan.org.

other databases. Second, there is imputation of missing or unreliable data. Third, there is aggregation. To keep computation times manageable, it is necessary to aggregate space into zones (at present about 100), the real transport network into an aggregated network, industries into industry groups, and households into household groups. Fourth, account must be taken of Los Angeles' geography, which renders much land undevelopable because it is mountainous, has insufficient water or is off limits for development (Indian reservations, military bases, environmentally protected areas and corridors). Fifth, the model must be calibrated. There is considerable experience to draw on in the calibration of the transport network (traffic network equilibrium models) and of travel demand, but little to draw on in calibrating the model to conform to base-year rents and values. Sixth, there is the design and implementation of a graphical, user-friendly interface.

We plan to have a preliminary version of the model up and running by the end of the summer. Then, over the next two years, we shall be running sample policy simulations, refining the model and its calibration, and developing and testing the interface.

The model builds on a series of computable, urban general equilibrium models developed by Alex Anas over the past 30 years, most of which have been implemented for Chicago. A complete description of an earlier version of the model, RELU-TRAN, is given in Anas and Liu (2007).

There are other metropolitan simulation models, such as UrbanSim and PECAS, but they are disequilibrium models in the Lowry tradition (Lowry 1964) that lack strong microeconomic foundations. God did not design the world to conform to microeconomic theory. At the same time, models that lack strong microeconomic foundations tend to be both *incomprehensible* (or, perhaps more fairly, incompletely comprehensible), in the sense that their output is hard to explain intuitively, and *incoherent and inconsistent*, in the sense that different elements of the model have different and inconsistent conceptual foundations.

Metropolitan simulation models are useful in structuring policy discussion. Their output suggests which effects of a policy are quantitatively important and which are not, as well as which groups are helped by a policy and which groups are hurt by it. Also, comparing a model's output with different sets of parameter values suggests which factors the effects of a policy are sensitive to. Their use in the context of metropolitan policy analysis has started only recently but will become more widespread.

6.15 Conclusion

This paper started by posing the questions: What problems related to metropolitan spatial growth are likely to be encountered in Australian cities in the 21st century? Anticipating these problems, how should the federal, state and local governments deal with them?

The answers provided by the paper are generally conservative. Space does not alter economic analysis in any fundamental way. The market allocates space reasonably efficiently, when the classical market failures (externalities, public goods and increasing returns to scale) are dealt with appropriately through government intervention. As in other areas of economics, if economic agents face the social costs of their economic decisions and derive the social benefits from them, they will make socially efficient decisions. This can be achieved by ‘getting the prices right’, which entails internalising externalities and resisting political pressures to distort prices so as to favour particular interest groups.

Non-economists tend to underappreciate the flexibility and wisdom of the market. When I was a boy, the demographic boom was in full swing. The prophesiers of doom foresaw a world with standing room only and cities clogged by traffic congestion. But economic incentives led to the demographic transition, and the large metropolitan areas responded to population and income growth through decentralisation and subcentring. As long as the economic incentives are appropriate, which is achieved by getting the prices right, urban growth will be sustainable, in the sense that at least the material quality of life will continue to improve.

This is not to say that we should just sit back and let the market do its thing. Most of the classic externalities, such as those discussed by Coase (1960), are spatial in nature. Some land uses are indeed incompatible, and those incompatibilities are appropriately dealt with by zoning, although less rigid zoning than was applied over most of the previous century. Also, if individuals are to make socially efficient decisions concerning how much to travel, what mode to travel by, where to purchase their home, and how large a home and lot to buy, they need to face the right prices, which requires internalising traffic congestion externalities. This does not require full-blown electronic congestion pricing. Getting the prices almost right will be good enough, and that can be achieved through the right combination of a gas tax and subsidies to mass transit, and perhaps cordon tolling to deal with downtown traffic congestion.

The broadly conservative theme of this paper is subject to two qualifications. The first is that spatial agglomeration derives primarily from external economies of

scale, and it is well known that the standard results concerning the efficiency of markets do not carry through in the presence of increasing returns to scale. The economic forces that give rise to cities, as well as the location of production within cities, lead to a spatial pattern of economic activity that is not fully efficient. However, the distortions are so subtle and complex that, given the current state of knowledge, we cannot say in what ways the equilibrium spatial pattern of economic activity differs from the optimum. My recommended response to this ignorance is to leave well enough alone. At the same time, we should acknowledge that planners are not necessarily wrong-headed in trying to modify the spatial pattern of metropolitan growth through land use and transportation planning.

The second qualification is that metropolitan growth may be sustainable but lead to allocations that are objectionable in some ways. A disturbing trend, at least in US cities, has been increasing residential spatial segregation by income. To some extent this trend is the outcome of natural economic forces, but it has been accentuated by exclusionary zoning in suburban communities. Even if it were completely the result of market forces, spatial segregation by income would still be objectionable, since it would increase social stratification and undermine equality of opportunity. I would be more than willing to sacrifice some efficiency to achieve greater income mixing.

References

- Alonso, W. 1964, *Location and Land Use: Towards a General Theory of Land Rent*, Harvard University Press, Cambridge, MA.
- Anas, A. and Liu, Y. 2007, 'A regional economy, land use, and transportation model: formulation, algorithm, design, and testing', *Journal of Regional Science*, vol. 47, pp. 415–55.
- Anas, A., Arnott, A. and Small, K. 1998, 'Urban spatial structure', *Journal of Economic Literature*, vol. 36, pp. 1426–64.
- Angel, S., Parent, J., Civco, D. and Biel, A. 2010, 'The persistent decline in urban densities: global and historical evidence of sprawl', Lincoln Institute of Land Policy Working Paper.
- Arnott, R., Atkinson, A.B., Arrow, K. and Drèze, J.H. (eds) 1994, *Public Economics Selected Papers by William Vickrey*, Cambridge University Press, Cambridge, United Kingdom.
- Bairoch, P. 1988, *Cities and Economic Development: From the Dawn of History to the Present*, University of Chicago Press, Chicago.
- Bator, F. 1958, 'The anatomy of market failure', *Quarterly Journal of Economics*, vol. 72, pp. 351–79.

-
- Blakely, E. and Snyder, M. 1997, *Fortress America: Gated Communities in the United States*, Brookings University Press, Washington DC.
- Brueckner, J.K. 1987, 'The structure of urban equilibria: a unified treatment of the Mills–Muth model, in Mills, E.S. (ed.), *Handbook of Regional and Urban Economics* 2, North-Holland, Amsterdam, pp. 821–45.
- 1997, 'Infrastructure financing and urban development: the economics of impact fees', *Journal of Public Economics*, vol. 66, pp. 383–407.
- Burchfield, M., Overman, H., Puga, D. and Turner, M. 2006, 'Causes of sprawl: a portrait from space', *Quarterly Journal of Economics*, vol. 121, pp. 587–633.
- Cassidy, M. and Bertini, R. 1999, 'Some traffic features at freeway bottlenecks', *Transportation Research B*, vol. 33, pp. 25–42.
- Clark, C. 1951, 'Urban population densities', *Journal of the Royal Geographical Society*, vol. 114, pp. 490–96.
- Coase, R. 1960, 'The problem of social cost', *Journal of Law and Economics*, vol. 3, pp. 144–71.
- Cronon, W. 1991, *Nature's Metropolis: Chicago and the Great West*, Norton, New York.
- Debreu, G. 1959, *Theory of Value: An Axiomatic Analysis of Economic Equilibrium*, Yale University Press, New Haven, Connecticut.
- Duranton, G. 2009, 'Are cities engines of growth and prosperity for developing countries?', in Spence, M., Annez, P. and Buckley R. (eds), *Urbanization and Growth*, World Bank, Washington DC.
- Fujita, M. and Ogawa, H. 1982, 'Multiple equilibria and structural transition of non-monocentric urban configurations', *Regional Science and Urban Economics*, vol. 12, pp. 161–96.
- Fujita, M., Krugman, P. and Venables, A. 1999, *The Spatial Economy: Cities, Regions, and International Trade*, MIT Press, Cambridge, MA.
- Fujita, M. and Thisse, J.-F. 2002, *Economics of Agglomeration*, Cambridge University Press, Cambridge, United Kingdom.
- Geroliminis, N., and Daganzo, C. 2008, 'Existence of urban-scale macroscopic fundamental diagrams: some experimental findings', *Transportation Research B*, vol. 42, pp. 759–70.
- Glaeser, E. and Kahn, M. 2001, 'Decentralized employment and the transformation of the American city', Working Paper 8117, National Bureau of Economic Research.

-
- Glaeser, E. and Kohlhase, J. 2003, 'Cities, regions, and the decline of transport costs', *Papers in Regional Science*, vol. 83, pp. 197–228.
- Glaeser, E., Gyourko, J. and Saks, R. 2005, 'Why have housing prices gone up?', *American Economic Review*, vol. 95, pp. 329–33.
- Gordon, P. and Richardson, H. 1986, 'The distribution of population and employment in a polycentric city', *Environment and Planning A*, vol. 18, pp. 161–73.
- , —— 1989, 'The influence of metropolitan spatial structure on commuting time', *Journal of Urban Economics*, vol. 26, pp. 138–51.
- , —— 1996, 'Beyond polycentricity: the dispersed metropolis, 1970–1990', *Journal of the American Planning Association*, vol. 62, pp. 289–95.
- Hamilton, B. 1975, 'Zoning and property taxation in a system of local governments', *Urban Studies*, vol. 12, pp. 205–11.
- Harrington, M. 1962, *The Other America*, McMillan, New York.
- Harris, J. and Todaro, M. 1970, 'Migration, unemployment and development: a two-sector analysis', *American Economic Review*, vol. 60, pp. 126–42.
- Henderson, J.V. 1974, 'The sizes and types of cities', *American Economic Review*, vol. 64, pp. 640–56.
- and Thisse, J.-F. (eds) 2004, *Handbook of Regional and Urban Economics 4: Cities and Geography*, Elsevier, Amsterdam.
- Kanemoto, Y. 1980, *Theories of Urban Externalities*, North-Holland, Amsterdam.
- Kaplow, L. 2008, *The Theory of Taxation and Public Economics*, Princeton University Press, Princeton, New Jersey.
- Kozol, J. 1967, *Death at an Early Age*, Houghton Mifflin, Boston, MA.
- Lowry, I. 1964, *A Model of Metropolis*, Research memorandum RM-4035-RC, Rand Corporation, Santa Monica, CA.
- Madden, J. 2003, 'The changing spatial concentration of income and poverty among suburbs of large US metropolitan areas', *Urban Studies*, vol. 40, pp. 481–503.
- Mieszkowski, P. and Mills, E. 1993, 'The causes of metropolitan suburbanization', *Journal of Economic Perspectives*, vol. 7, pp. 135–47.
- Mills, E. 1967, 'An aggregative model of resource allocation in a metropolitan area', *American Economic Review*, vol. 57, pp. 197–210.
- Mirrlees, J. 1972, 'The optimum town', *Swedish Journal of Economics*, vol. 74, pp. 114–35.

-
- Mohring, H. 1972, 'Optimization and scale economies in urban bus transportation', *American Economic Review*, vol. 62, pp. 591–604.
- Muth, R. 1970, *Cities and Housing*, University of Chicago Press, Chicago.
- Papageorgiou, Y. and Pines, D. 1999, *An Essay on Urban Economic Theory*, Kluwer, Boston, MA.
- Parry, I. and Small, K. 2009, 'Should urban transit subsidies be reduced?', *American Economic Review*, vol. 99, pp. 700–24.
- Saiz, A. 2010, 'The geographic determinants of housing supply', *Quarterly Journal of Economics*, vol. 125, pp. 1253–96.
- Salanié, B. 2000, *Microeconomics of Market Failures*, MIT Press, Cambridge, MA.
- 2003, *The Economics of Taxation*, MIT Press, Cambridge, MA.
- Solow, R. 1972, 'Congestion, density and the use of land in transportation', *Swedish Journal of Economics*, vol. 74, pp. 161–73.
- Smith, A. (1776) 2009, *The Wealth of Nations*, Classic House Book, New York.
- Strange, W. 1995, 'Information, holdouts, and land assembly', *Journal of Urban Economics*, vol. 38, pp. 317–32.
- Texas Transportation Institute 2010, *2010 Urban Mobility Report*.
- Tiebout, C. 1956, 'A pure theory of local public goods', *Journal of Political Economy*, vol. 64, pp. 416–22.
- von Thünen, J. (1827) 1966, *The Isolated State*, trans. C.W. Wartenberg, Pergamon Press, Oxford.
- Vickrey, W. 1969, 'Congestion theory and transport investment', *American Economic Review*, vol. 59, pp. 251–60.
- Warner, S. 1962, *Streetcar Suburbs*, Harvard University Press, Cambridge, MA.

Discussant comments

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Professor Arnott gave us an economics view of the world, which is, I guess, exactly what we were hoping for. I would like to overlay a political process view of the world, a political reality view of the world and a wellbeing view of the world, and see how that might shift our thinking.

Using Professor Arnott's economics approach, many things struck me as interesting.

His logic suggests that we should, if anything, encourage agglomeration. That runs counter to the history of Australian policy, where we continue to spend in the order of \$3 billion each year trying to promote regionalism — and that only includes the direct funding. By contrast, Professor Arnott's analysis suggests that policy should promote more growth in cities to correct for the market's failure to capture all of the positive externalities of agglomeration.

He also encourages us to implement congestion pricing. He encourages us to price energy and water. However, Australia is further down the water-pricing track than many other countries, and it is emerging that pricing water effectively in urban areas is a lot harder than it looks.

Professor Arnott also encourages us to release or relax a lot of zoning controls, particularly where there are not real externalities. He encourages us to increase mixed-use and mixed-income districts. To add a little to his ideas about the value of mixed-income suburbs, there is some interesting work on their value for education outcomes. Richard Kahlenberg from the Century Foundation suggests that students from low-income backgrounds do better than you would expect if they go to school with students from high-income backgrounds (Kahlenberg 2000; Schwartz 2010). Having genuinely mixed background schools means that your school results are better than they might be otherwise.

These economic insights generally make a lot of sense to many people, particularly economists. They lead one to ask, 'If it's all so obvious, why hasn't it happened already?' Of course, the answer is, 'The politics is hard.'

That should not surprise us. Cities are highly contested policy spaces and political spaces. In the city, everywhere is somebody else's backyard. Furthermore, we have lots of public space in cities. Consequently, the first of Professor Arnott's assumptions does not always hold: there are many public goods in cities, and policy must take them into account.

This political contest is not an exogenous variable. It is not something we can simply assume away — but we *do* have some control over it. We can set in motion political processes that will probably lead to different economic outcomes than otherwise. Professor Arnott talked about Vancouver. The Grattan Institute study, *Cities: Who Decides?* examined a number of successful cities around the world (Kelly 2010). Vancouver was the *only* city where urban travel times had actually decreased. It was also the only city, apart from Portland and Seattle, that had gone through very deep citizen engagement processes to get to the outcomes. The study was highly suggestive that those two things are related. Nobody likes density very much, at least not in their own backyard, and nobody wants to pay for infrastructure like public transport. It is only when you push the tradeoffs down to the very local level and get people to genuinely engage in those tradeoffs that you have some chance of making choices with obvious losses and less obvious gains. Only then can you, for example, substantially increase density and thereby reduce average commuting times.

So I would like to suggest that, as we think about Professor Arnott's economic prescriptions, we should also think about encouraging particular political structures or processes so that the economically rational result becomes more likely. The catch with such deep citizen engagement processes, as one public servant put it to me, is 'What if they choose the wrong answer?' And that is a real possibility when many people came to Australia precisely because they were attracted by wide-open suburban spaces. We must be open to the outcome that, as we push tradeoffs down to the local level, people may choose to live with lower densities and higher commuting times, and perhaps fewer agglomeration benefits. Nevertheless, the process may well alter the outcome. In that sense, the political process is a variable that we can influence and that might ultimately change the kinds of policy choices we make.

Second, I would suggest that the optimal policy choice in one area may well depend on what we think is a politically achievable policy result in another. So, for example, although a few cities have succeeded in setting congestion charges, many cities have tried to do so but never quite got there. While personally I would encourage congestion charging in Australia, I am not holding my breath. It is inherently a difficult thing to pull off politically.

If you cannot get the money for infrastructure and for congestion pricing and for migration integration services, then the costs of migration are substantially higher. This raises the question: does the failure to optimise these policies change the optimal policy choice on migration? This problem of ‘second best’ needs to be considered in setting population policy.

I also want to overlay a wellbeing approach. As Professor Arnott suggested, economists tend to be very focused on choice. A broader definition of wellbeing might shift some of our economic analysis of cities. In his paper, Professor Arnott used Rawls’ ‘veil of ignorance’ to suggest that we would always prefer a society that maximised choice and equality. But I am not sure that is right. From behind the veil of ignorance, I might well be prepared to have a bit less choice but more parks and street trees. Indeed, the fact that I live in Melbourne and Professor Arnott lives in Los Angeles suggests that we might actually make different choices about that tradeoff.

This implies that we must ask how to value such things as parks and trees relative to individual choice. That is particularly difficult, I would suggest, when we come to the value of shorter commuting times, which is so central both to Richard’s paper and to thinking about cities in general. A paper from Germany uses panel data on wellbeing to suggest that, in general, people tend to underestimate the costs of commuting time on their lives (Stutzer and Frey 2008). People tend to make upfront choices for a longer commute, which on average makes them more miserable than they would have been if they had chosen shorter commuting times. That is after taking into account that higher commuting times might lead to better jobs or larger houses. Indeed, it even turns out that their families wind up being more miserable as well.

This poses an interesting issue for public policy. If we know that people tend to make upfront choices about congestion that are not optimal, how does that shift the policy environment we want to create for them? How much do we value their choice relative to promoting an outcome that will leave them and their families happier? There is at least an argument for preferring an outcome that increases wellbeing even if it leaves people with fewer choices.

Professor Arnott’s stimulating paper encourages us to understand the economic consequences of the choices we make about cities. Some of the results are counterintuitive, or run counter to conventional wisdom. They suggest fruitful directions for cities policies. However, approaches taking into account political processes, political realities and wellbeing might in some cases lead to slightly different answers to the purer economic analysis that Professor Arnott presented.

References

- Kahlenberg, R. 2000, *All Together Now: Creating Middle-Class Schools Through Public School Choice*, Brookings Press, Washington DC, 2000.
- Schwartz, H. 2010, *Housing Policy is School Policy: Economically Integrative Housing Promotes Academic Success in Montgomery County, Maryland*, The Century Foundation, New York, <http://tcf.org/publications/pdfs/housing-policy-is-school-policy-pdf/Schwartz.pdf>.
- Kelly, J. 2010, *Cities: Who Decides?*, Grattan Institute, Melbourne.
- Stutzer, A. and Frey, B. 2008, 'Stress that doesn't pay: the commuting paradox', *Scandinavian Journal of Economics*, vol. 110, no. 2, p. 339.

Discussant comments

Kevin O'Connor

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The urban economics outlined by Professor Arnott will need to be utilised in policy analysis as Australia prepares to cope with the population growth associated with migration, whether the rates are small or large. At the current point in time, most of Australia's cities are growing rapidly. Evidence of house price increases, along with public commentary on congestion levels, provides a general sense that economic activity and community life operate at or near the capacity of existing urban infrastructure. These urban outcomes are felt in particular in the inner and mid-suburban parts of the metropolitan areas. They spill over, to a greater or lesser degree, into an extended urban fringe that is attracting population, but less employment. Beyond that area, in rural and eventually remote Australia, the shares of population change and recent population changes are less, except in a few places with special locational and industrial features (coastal, special agricultural activity, tourism or mining).

So where will the additional population go? What will be the mix of big city and small city in the future? Within big cities, where will the additions be made? Where will we build the schools, shops, medical centres, sporting facilities, office buildings, warehouses and factories that the expanding population will need? The conceptual thinking to provide a sense of priority on policy action to address these questions is not well developed. Urban economics is a potential source of these principles; however, much of that source is derived from a framework built around the dominance of a central city, with precisely specified distance decay curves extending away to the urban fringe. As Professor Arnott made clear, the empirical context has shifted so far from that pattern (which once did serve as an accurate model of most cities). Just two features make that clear. One, suburban job growth has reduced the central city share of all metropolitan employment to around 30 per cent. Two, there are high levels of local and regional self-containment in suburban labour markets, so that daily links to the central city are not as significant as they once were for a considerable share of the population.

Thinking on these new patterns has produced a modern framework of relationships expressed in the form of a multicentred city (Fujita et al. 1999). That framework has been backed with considerable empirical analysis. For example, Glaeser and Kahn

(2001) provide a perspective on the spread of employment in US cities; Davies (2009) shows the outcome in Melbourne. These approaches point to the role of subcentres. Guiliano and Small (1991), among others, give some sense of the number and scale of these centres in a given metropolitan area, and their importance as foci for employment growth. This thinking has been embraced in metropolitan land-use planning strategies in most Australian metropolitan areas, although there is little or no economic rigour in the selection of centres, or understanding of their current size and potential links with a surrounding labour market and community.

In contrast to that set of principles and empirical breadth, current thinking on long-term urban development tends to involve effort primarily to control the location of housing, with little concern for the location of employment. In particular, the emphasis is to influence the balance of population growth between inner and outer areas. These approaches are based on a long heritage of studies that compare the cost of housing development in new areas with the cost in established areas. A very recent example has been carried out by Trubka et al. (2008). Using what they term a 'conservative estimate' (p. 26), they showed that an additional 1000 dwellings in an outer area are twice as expensive as the same number in inner areas. It seems axiomatic, in that new locations call for new construction of all infrastructure and related facilities.

However, that axiom is derived in large part from an understanding that there is surplus capacity in facilities in inner areas, built on observations of population loss over recent decades. It is possible that the effects of several decades of population consolidation have changed that situation. Substantial additional population in the inner areas, especially now with growing numbers of children, means that a major list of new economic, transport and community infrastructure is needed. In some cases, given the price of inner urban land, those services will be very much more expensive to supply than in middle and outer suburbs. So space for new schools, and to expand transport services (providing lines for new train routes and adding new equipment, as well as additional road space) will be very expensive. Hence it is no longer as clear that inner area population development is necessarily so much cheaper than outer (or middle) suburban expansion. Some sophisticated urban economic analysis, taking account of service levels and congestion in inner areas, could provide a refinement to this analysis.

The lack of clarity about the economic issues associated with accommodating population are well illustrated in proposals to accommodate additional population primarily along current transport alignments. What seems like a good design idea faces problems in implementation, as it does not include costs required to expand the transport service and the additional services that extra population will require. Nor does it consider that transport corridors run to a part of the metropolitan labour

market with just one third of total jobs, and so may not suit new residents who may need to travel to work away from the transport corridors.

This discussion indicates that there is a substantial need to develop a deep-seated economic understanding of the role of intrametropolitan job and housing markets as a foundation for policy decisions on the location of investment in public infrastructure and services. The connection with Professor Arnott's computable general equilibrium modelling could be used as a foundation here, building on some earlier approaches developed in Melbourne.

Looking beyond the metropolitan area, a renewed effort in urban economic analysis may be needed to isolate the costs and benefits of providing services to smaller populations. Here (as in the analysis of projects within the metropolitan areas) the new approaches may need to come to terms with the effects of a different timeframe. Public sector investment in urban areas has a long life; many parts of the urban infrastructure built in Australian cities over 100 years ago are still in use; much dates from the early postwar period. Hence, as cost–benefit analysis considers discount rates over time, it may need to acknowledge very long payback periods — something that is not incorporated into standard project evaluation methodologies.

Finally, and perhaps outside urban economics, there is the concern that the nation needs to spend on its urban infrastructure. Meeting that need may depend more on the politics of macroeconomics, but steps towards spending decisions will be strengthened by high-quality urban economic analysis.

References

- Davies, A.K. 2009, *The Structure of Suburban Employment in Melbourne*, PhD thesis, University of Melbourne.
- Fujita, M., Krugman, P.R. and Venables, A. 1999, *The Spatial Economy: Cities, Regions and International Trade*, MIT Press, Cambridge, Massachusetts.
- Giuliano, G. and Small, K.A. 1991, 'Subcenters in the Los Angeles region', *Regional Science and Urban Economics*, vol. 21, pp. 163–82.
- Glaeser, E. and Kahn, M.E. 2001, *Decentralized Employment and the Transformation of the American City*, Working Paper no. 8117, National Bureau of Economic Research.
- Trubka, R., Newman, P. and Bilsborough, D. 2008, *Assessing the Costs of Alternative Development Paths in Australian Cities*, Curtin University Sustainability Policy Institute for Parsons Brinkerhoff.

7 Dealing with congestion efficiently

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7.1 Defining the problem

As a motorist, I am inclined to regard any interference from other traffic that makes me travel more slowly than I would like to — or than the traffic laws will permit me to — as a ‘congestion problem’. The Victorian Competition and Efficiency Commission (VCEC) captured this perspective well in its exploration of possible responses to increasing congestion:

Road congestion is sometimes described as a situation where the number of vehicles using a road at any point in time causes vehicle speeds to fall below those experienced in freely flowing traffic. VCEC (2006)

But, as the VCEC goes on to point out, this is unhelpful from a policy perspective. If we define congestion in this way, then it is entirely appropriate to say, along with the Director of the Institute of Transportation Studies at UCLA, that ‘Traffic congestion is evidence of social and economic vitality; empty streets and roads are signs of failure’ (Taylor 2002).

When we are dealing with flows as variable as urban road traffic, if there is no congestion we can be pretty sure we have massively overinvested in infrastructure, so one of the key issues in dealing with congestion efficiently is to work out just how much congestion we ought to be willing to put up with.

The standard economist’s response is that congestion — or more accurately a congestion problem — arises when congestion leads to inefficiency. This will be the case if the marginal social cost of a trip exceeds the benefit derived from making it. Since the benefit derived from the trip is customarily assumed to be reflected in the willingness of the individual to pay for the trip — or more accurately to incur private costs in making the trip — this reduces to the idea that a congestion problem arises when the marginal social cost of the trip exceeds the private cost of making it. In practice, this will often be the case, since when you or I decide to make a trip, we

take into account only the costs that we will bear; we do not worry about the fact that our decision may slow down everybody else's journey, and by doing so impose costs on them.

However, although the principle is straightforward enough, in practice, estimating the size of the congestion problem is trickier than it looks. Nevertheless, the work of the Bureau of Transport and Regional Economics (BTRE) on the cost of congestion gives us some indication of how much difference this definitional distinction makes to our understanding of the scale of the congestion problem (BTRE 2007). That work estimates that the total cost of traffic delays in 2005 is around \$11.1 billion per year. However, the estimate of the 'avoidable social cost of congestion' — the cost that is relevant from the point of view of policy formulation — is a little smaller. The BTRE estimate (for 2005) is \$9.4 billion per year. By implication, the desirable level of congestion costs, given the current road network, should be around \$1.7 billion per year. Put another way, in 2005 the cost of congestion on Australian roads was roughly six times what it should have been.

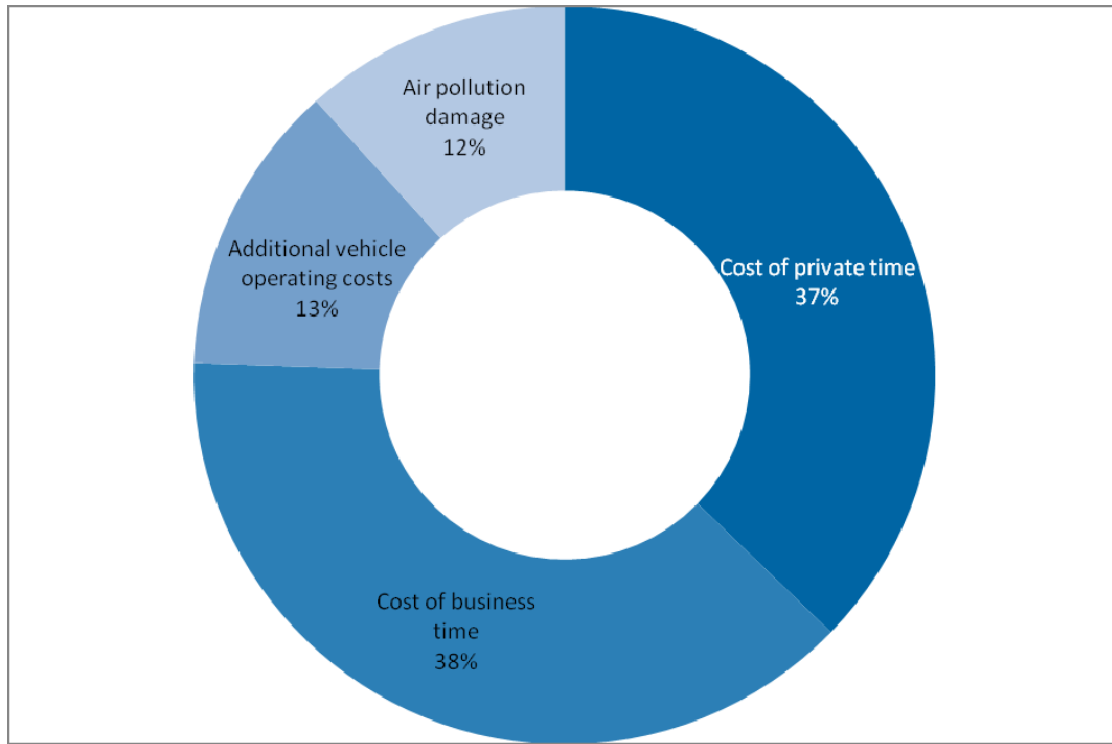
7.2 The structure of congestion costs

The BTRE's estimates of the magnitude of current and likely future congestion costs are, by its own admission, 'order of magnitude' evaluations — to help with considerations dealing with the likely aggregate costs of urban transport externalities for Australia, and their likely future trends' (BTRE 2007, p. 2). However, it seems to me that it is safe to assume that congestion is a sizable problem, and likely to get bigger — and for the purposes of this paper the structure and causality of congestion costs are more interesting than their magnitude.

In framing policies for dealing with this congestion problem, it is useful to have some idea of the nature of the costs that comprise the 'avoidable social cost of congestion'. A breakdown of those costs is provided in Figure 7.1.

Of some importance to the development of appropriate policies for addressing congestion is that for approximately half of these costs — the costs of private time and the damage caused by air pollution — there are no market prices on which we can base our estimates of costs. There are of course more or less well-established ways of inferring the value of these things, but they are indirect and imprecise. For business time, there is a market, but there are a number of steps involved in moving from wage rates to an estimated cost of business time lost due to congestion, and each step moves us away from a firm empirical foundation. These issues are less of a concern for additional vehicle operating costs, for most of the components of which there are directly observable market prices, but even so the problem of

Figure 7.1 **Breakdown of avoidable social costs of congestion**



Data source: GHD analysis, based on data in BTRE (2007).

estimating the extent to which the costs increase as a result of congestion is non-trivial.

To emphasise these measurement difficulties is not to deny that the problem of congestion is real, or that it is useful for us to have an estimate of the economic loss due to congestion, however imperfect. But it is important that we bear in mind the provisional and imprecise nature of such estimates when we try to devise appropriate policy responses to the problem of increasing congestion.

7.3 Population growth and the problem of congestion

The deadweight loss of congestion is forecast by the BTRE (2007) to more than double from \$9.4 million per year in 2005 to \$20.4 billion per year in 2020. This is a large number, and enough for the peak infrastructure industry body to conclude that ‘urban congestion is a significant national challenge that requires an equally significant national response’ (IPA 2009).

It is useful to look more closely at just what will drive the expected increase. There are a number of ways in which to look at this, but one is particularly instructive. We can decompose the total cost increase into three components:

- the component that results from an increase in the number of people making trips or causing them to be made; that is, the increase in population (x)
- the increase in the amount of travel — or, more precisely, the increase in the load on the road system — per head of population (y)
- the increase in the avoidable cost associated with each unit of traffic load (z).¹

In principle, the component ‘z’ could itself be segregated into two components: the increase in the *quantity* of resources (mainly time) consumed with each unit of traffic load, and the increase in the *price* of those resources. However, although the BTRE report is not completely clear on this, it appears that congestion cost estimates are made on the assumption that the value of time remains constant over the analysis period. The component ‘z’ therefore reflects the decrease in network service quality over the analysis period.

Figure 7.2 shows the contribution that each of these factors makes to the expected increase in congestion costs for Melbourne (the picture is much the same for Sydney).

Figure 7.2 shows the proportion of the increase in congestion costs that is due to expected future population increase. If all other factors were held constant, population growth would lead to an increase of only 12 per cent in congestion costs.

Looked at another way, it is useful to consider a hypothetical situation in which:

- there is no increase in population in our major urban areas
- traffic per capita increases as anticipated by the BTRE
- the level of service on the road network deteriorates as anticipated by the BTRE.

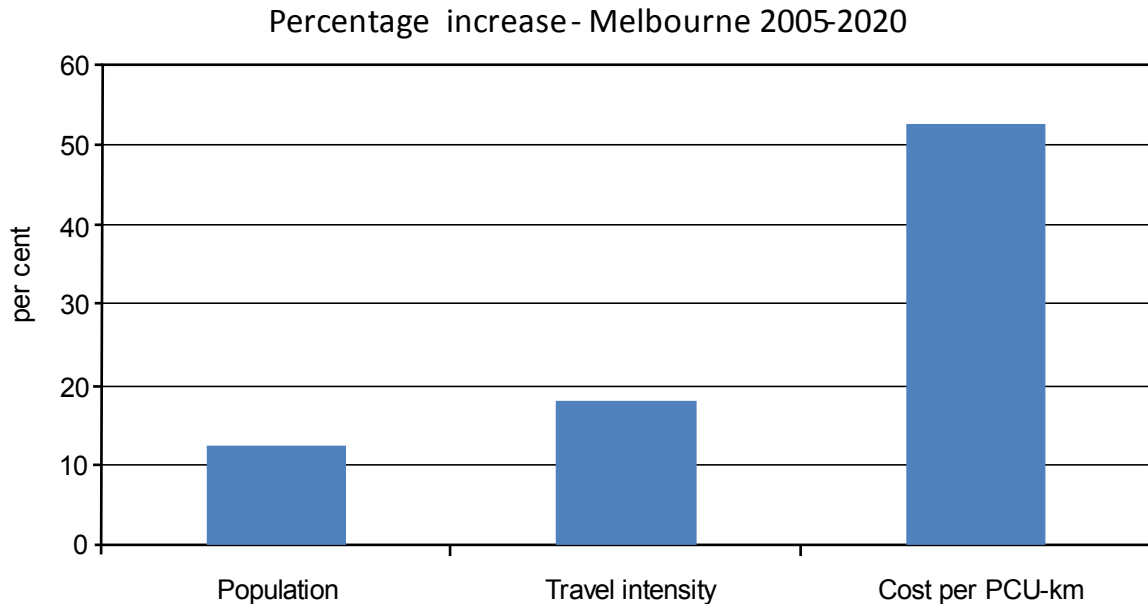
In this situation, the total cost of congestion would increase by over 80 per cent between 2005 and 2020.

The second component — the increase in traffic intensity — makes a slightly larger contribution. It is expected to increase by approximately 18 per cent between 2005 and 2010. That increase is equivalent to 1972 passenger car units (PCUs: kilometres per annum).² Of this total, most is commercial vehicle traffic; only 37 per cent is

¹ The total increase in congestion costs (r) is given by the relationship: $r = (1 + x)(1 + y)(1 + z) - 1$

² Some vehicles, such as large trucks, have a greater impact than others on the flow of traffic and the load on the road system. To allow the mix of vehicles to be taken properly into account

Figure 7.2 Causes of increases in congestion costs



Data source: GHD analysis, based on data in BTRE (2007).

private vehicle traffic, of which a substantial share is business travel (see Figure 7.3).

By far the most significant element of the increase is cost per unit of traffic load. This reflects an expected decline in the average level of service on the urban road network, but that decline is not a fact of nature. It reflects expected future infrastructure investment policy: specifically, it reflects an assumption that investment in effective urban road capacity will not keep pace with the increase in demand — in fact, that it will fall far short of the increase in demand.

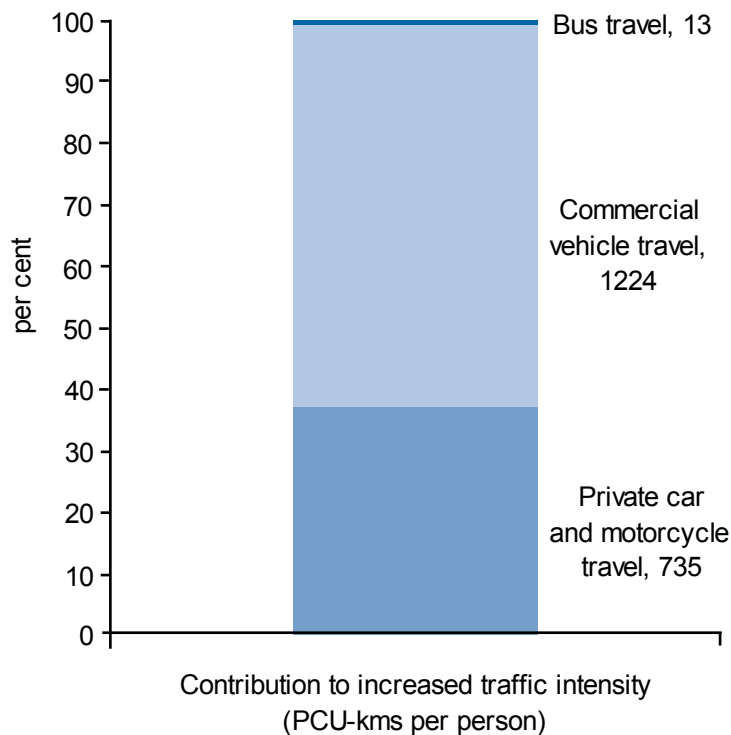
These observations justify three propositions, all of which are of some importance in meeting the challenge of congestion efficiently:

- The problem of increasing congestion is not primarily a problem of increasing population.
- The most important single factor in the expected increase in costs of congestion is the (assumed) decision not to expand the supply of road space at the same rate as demand.

when discussing the load on the road system, traffic load is customarily expressed in terms of the equivalent number of passenger cars (PCUs).

- Most of the expansion in demand for road space will come from the freight sector, and a significant share of the remainder will come from business-related private vehicle travel.

Figure 7.3 Breakdown of increased travel demand (Melbourne)



7.4 Addressing the problem

Congestion pricing

I have placed congestion pricing first on the list of possible response measures not because it will play the most important role, but because the response of most economists to any rationing problem is to fix it with prices. The great advocate of congestion pricing in the road sector (and many other sectors) was Nobel laureate William Vickery (Vickery 1963).

It is useful to distinguish between two concepts that are often unhelpfully intertwined:

- *road pricing*: recovering from road users the cost of providing the road infrastructure that they use

-
- *congestion pricing*: setting a price on road use at particular times and places, which is intended to reflect the impact that the decision to travel has on the costs faced by other road users.

I am not aware of any credible argument for not charging road users the full cost of providing, maintaining and operating the road infrastructure that they use, but that is not the concern of this paper. This paper is solely concerned with congestion pricing. Congestion pricing is not about recovering the cost of infrastructure.

The first important point to make about congestion prices is that they are not really prices at all but Pigovian taxes. This matters because one of the great attractions of prices is that they often function as an endogenous equilibrating mechanism that will bring demand and supply into optimal equilibrium; this happens, for instance, in the markets for bread or body-piercing services.

This is not applicable to taxes, including congestion pricing. We have to set the charge or charges through an administrative ruling. If we get this right, it may reduce the social cost of using road infrastructure. It will not automatically call forth an appropriate supply response. This characteristic is intrinsic rather than accidental: it cannot be fixed by institutional reforms, such as commercialising or privatising road provision.³

Aside from this fundamental limitation, there is a range of practical problems in setting appropriate congestion charges. The standard precept of setting the congestion charge equal to the marginal social cost of additional road use is beguilingly simple (Hau 1998), but of course road use varies by the minute and by the street. Moreover, the relationship between traffic load and delay is mediated by a variety of factors, many of which are specific to a particular road, and sometimes — as with clearways and school zones — specific to a particular time. Additionally, as discussed above, most of the cost associated with congestion relates to resources that are difficult to price with confidence and accuracy.

For all of these reasons, estimating the marginal social cost of additional road use — which will in any case vary greatly over time and space — is complex and prone to very great uncertainty. Any practical congestion pricing scheme is therefore likely to be only a very, very crude approximation of ‘optimal’ congestion pricing.

³ Some interesting and elegant work has been done to show that under certain assumptions an ‘optimal’ congestion tax will raise sufficient funds to finance an ‘optimal’ level of road capacity (Mohring 1976; Newbery 1989). However, as it seems that these conditions are unlikely to be even approximately true in an urban road environment, they are of little practical relevance to congestion policy.

But even very crude schemes can be pretty expensive. The highly publicised London congestion pricing scheme is about as crude as you can get — in essence, it is a single flat charge for operating a vehicle within the congestion charging zone during the daytime (TfL 2011). But even for this very simple scheme, the annual operating costs amount to approximately 50 per cent of the total annual revenue from the £10 /day⁴ charge that is levied on vehicles entering the restricted area (TfL 2010). This is a problem because there are good reasons to expect that the revenue generated by a congestion pricing scheme will be many times larger than the efficiency gains from the reduction in congestion. If that is the case, and if it is also the case that the cost of operating the scheme equals a large proportion of the revenue, then it seems unlikely that the benefits will outweigh the cost.⁵

According to KT Analytics (2008), an *ex post* evaluation of the scheme yields an economic benefit–cost ratio of 1.4. Given the considerations outlined above, this seems surprisingly high. However, even if we accept it as accurate, it does not seem a particularly impressive figure for an initiative designed to address the problems of a notoriously dysfunctional CBD, and which is generally regarded as successful. Worth doing, perhaps, but I suspect that there are a number of road improvement schemes awaiting funding that would have yielded benefit–cost ratios of at least that magnitude.

Congestion is also expensive in another sense. Politically, the costs are usually high and can be insupportable — especially in cities, like Australian cities, whose form is premised on the use of private motor vehicles. Despite the enthusiasm of those who, during the past decade, have celebrated congestion pricing as an idea whose time has finally come, it is still common for such schemes to fail to gain political support — even when, as in the case of the failed New York initiative, central governments have tried to sweeten the deal by providing a large grant (EDF 2008).

Finally, there are risks involved in any ‘sin tax’, and they apply also to congestion pricing. The first is that governments become addicted to the revenue from them, and the desire to keep that revenue can undermine commitment to solve the problem (the obvious Australian example is revenue from gambling taxes). The second is that, in order to make the tax palatable, the government commits to spending it on things that have popular appeal but do little for economic efficiency or for any other worthwhile objective.

All of this is not to say that congestion pricing does not have a role to play in the future management of congestion. There are examples of congestion pricing

⁴ There is a 10 per cent discount for automatic payment.

⁵ I am grateful to Henry Ergas for making this point in his comments on the original version of this paper.

schemes that have made an important contribution to the management of congestion — the most sophisticated, celebrated and successful is Singapore's (BAH 2006). Time-of-day pricing on road links that are already tolled seems an obvious improvement, despite the fact that recent press reports suggest that the marked initial impact of Sydney's peak period toll surcharge has dissipated over time (Haynes 2010).

However, in general, pricing is likely to be a rather blunt instrument for dealing with congestion efficiently, and it would be very unwise to place all of our policy eggs in this particularly fragile basket. It is unlikely to be enough by itself, it will probably not be the main game, and it may not even be worth the effort. An adequate approach to congestion management may incorporate congestion pricing, but it is also likely to require a number of other measures, many of which are less likely to be embraced by econocrats.

The supply side

As we have seen, a very large part of the expected increase in congestion costs results from the assumption of the BTRE analysis that the ratio of demand for road capacity to supply will increase over time. I have not undertaken a detailed appraisal of the BTRE's supply-side assumptions, but intuitively I have no trouble in accepting this assumption as a reasonable depiction of what is likely to occur if we continue with our current policy settings. What is more questionable is whether we should accept this outcome as reflecting what we *ought* to do with the supply of road capacity.

There are two levels to this issue. The first level deals with what might be called road management initiatives. By this I mean things that can be done to increase the effective capacity of existing road space. There seems to me to be a general consensus that there are things — freeway ramp metering, improvements to information systems and the like — that can be done to get more out of our existing road infrastructure. Just how much can be gained from initiatives of this type is uncertain, but Booz Allen and Hamilton in its study for the Council of Australian Governments concluded that:

The evidence indicates that the extended application and further integration of traffic management systems on a corridor basis could provide some real productivity and efficiency gains for the urban road network, and therefore these tools merit further consideration by Australian jurisdictions. (BAH 2006)

By and large, initiatives in this class require relatively modest levels of capital and are likely to generate few negative side effects. It seems sensible to give such

measures a high priority in addressing the challenges of increased traffic demand, and including them in our policy package is not likely to generate much debate.

The second level is likely to be more controversial. This involves building more and better roads to handle increased travel demand. It is now accepted wisdom that we cannot build our way out of a congestion problem. Dr Henry, for instance, asserts that ‘the avoidable costs of urban congestion may grow to around \$20 billion in 2020. This cannot be reduced simply by building more city infrastructure, as most new road space induces new traffic’ (Henry tax review 2010).

It seems reasonable to make two points here:

- We need to be a little cautious about the claim that ‘induced demand’ negates the benefit of expanding capacity. In most other areas of economic endeavour, if we lower the effective price of something by providing better infrastructure or other efficiency improvements, and as a result we sell more units of it, we would regard that as a good thing. The same holds true when we invest appropriately in additional road capacity. If demand is not responsive to improved road conditions, the whole of the benefits of the improvement will show up as reduced congestion costs. If demand is responsive, then some of the benefit will show up in the form of reduced congestion costs; some will be in the form of consumer surplus on trips that would otherwise not have been made. It is not obvious that the total benefit in the latter case will always be lower than in the first, even in the absence of congestion pricing.
- The level of congestion on the network cannot by itself answer the question of whether or not the (assumed future) level of road investment is optimal. It is possible that the cost of congestion is high but that the cost of the infrastructure needed to reduce it would be even higher. But it is also possible that there are capacity-increasing investments that would result in reductions in the cost of travel that would more than justify the expense.⁶ There are different views on which of these two conditions pertain, but this is an empirical issue, and it seems to me that the balance of evidence favours the view that investment in urban road systems at present is deficient rather than excessive.

Providing alternatives

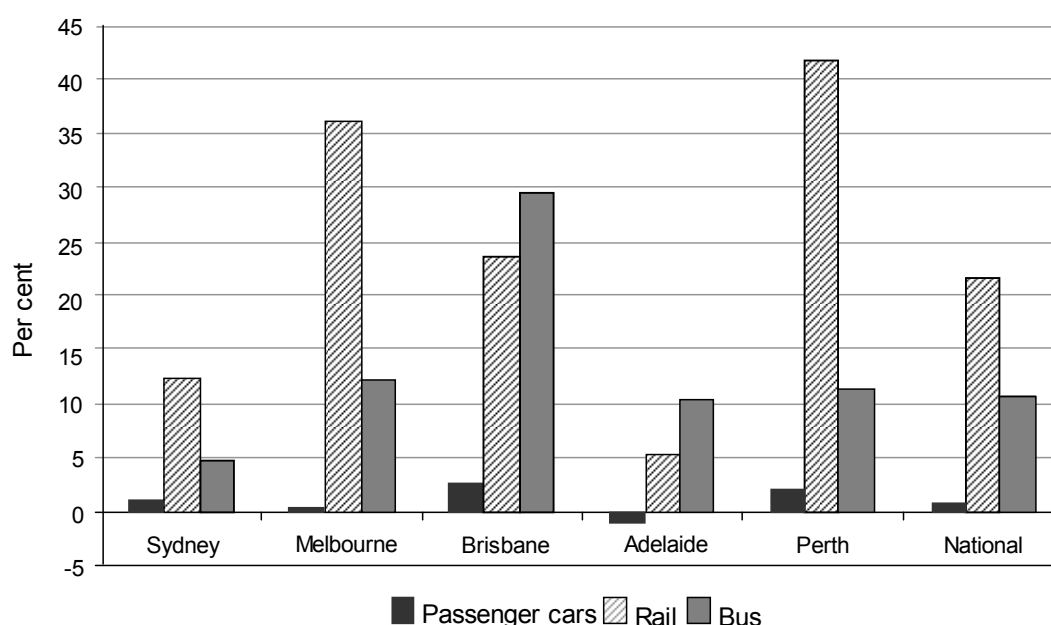
The third element of the portfolio of measures that would be required to tackle traffic congestion efficiently is the provision of attractive alternatives to the behaviours that lead to the congestion.

⁶ Of course, it is also possible that investments in additional road capacity would be justifiable in economic terms but rejected by the community on other grounds.

This will be harder than it may seem at first sight. One of the main reasons why it will be tough is the breakdown of future traffic growth shown in Figure 7.3. Much of the expected future growth is going to be in freight traffic. The alternatives for much of this traffic — the very large portion that is used in the distribution of goods within urban areas — are very limited, but there are elements of the urban freight task, such as port-related freight, inter-regional freight and interstate freight, for which rail alternatives are credible, even if not commercially attractive under present conditions. However, a switch to rail of even those components will depend on significant investment in freight rail infrastructure and intermodal terminals, and is very likely to require supplementary coercive or fiscal measures, at least during an initial period.

As far as personal mobility is concerned, for many years attracting people away from private motor vehicles was almost given up as a lost cause. However, a combination of push and pull factors has resulted in a partial reversal of this trend in more recent years. Figure 7.4 shows the increase in urban passenger travel between 2003–04 and 2007–08, by mode and major city. Nationally, there has been an 11 per cent increase in bus travel and a 22 per cent increase in rail travel (including light rail and trams) over that period, compared to a 1 per cent increase in passenger car travel.

Figure 7.4 Increase in passenger kilometres of travel, 2003–04 to 2007–08



Data source: BITRE (2009).

Despite the warnings issued in previous assessments of the potential for future improvements in public transport to make a meaningful contribution to the relief of congestion (BAH 2006), this reversal gives some reason for cautious optimism. Infrastructure Australia's selection of national infrastructure priorities is heavily weighted in favour of urban public transport projects, and it has forcibly expressed its view on the central importance of improved public transport to the future functioning of Australian cities:

Infrastructure Australia believes that, to maintain the economic success and environmental sustainability of Australia's cities, the time has come for an unprecedented commitment to the creation of world-class public transport in our cities. Infrastructure Australia is therefore recommending, for the first time in Australian history, significant Australian Government investment in public transport in our cities. (Infrastructure Australia 2010)

This vision implies more than a program of cautious incremental improvements: it means that we are going to need to take significant leaps of faith by backing some very large investments in game-changing initiatives.

Reshaping cities

The fourth package of measures that we will need to bring to bear on the problem of ameliorating congestion relates to urban form.

The complex interaction between urban form and transportation is widely acknowledged but only imperfectly understood. From the perspective of congestion management, the most salient aspect is that low-density cities imply heavy reliance on private motor vehicles. At the same time, the assumption of private motor vehicle ownership — and in particular the availability of that vehicle for the journey to work — conditions decisions on housing and workplace choice.

Many commentators have concluded that changes to the form of Australian cities will be essential to the long-run management of congestion. The policy actions required to bring about those changes fall into two broad categories, one of which is likely to be embraced by economists and one of which is likely to receive a less enthusiastic reception. The first involves the removal of restrictions that currently limit the ability of the market to respond to the demand for more intensive development in and around transport nodes and corridors.

The second involves the use of zoning controls, land release mechanisms and other regulatory and coercive measures to constrain actions of the market that would lead to the perpetuation of dependence on the private motor vehicle. Of course, there is nothing new in limiting the action of the market in this way, but to argue that it is an

efficient approach to congestion management requires an indication of where the market failure lies that justifies this intervention. In my view, there are two sources of this failure. The first is imperfect information on the full implications of private location choices. The second is that those who make the decisions are not necessarily those who will bear the full consequences of them: cities (or at least cities that are growing at relatively modest rates) change their shape only slowly, and the decisions made today will have implications for generations to come.

Behavioural and attitudinal changes

Finally, we can tackle congestion by changing the way people behave, even if the objective conditions under which their choices are made do not change.

Once again, there are two levels of activity here, one of which is likely to be very palatable to orthodox economists and one of which is less likely to be so. The first is essentially about improving information. There are many ways that can be done, and many excellent initiatives that are already in place. They range from providing real-time information on bus movements to ensuring that travellers are fully aware of the real cost of private vehicle use.

The second — and perhaps more problematic — range of initiatives is aimed at changing what people do by changing what they want to do: changing not the information that people use in making their decisions, but the criteria that they use in evaluating that information.

To put it bluntly, I am talking here about social engineering. Between 1986 and 1996, the number of journeys to work made by bicycle fell by 15 per cent; between 1996 and 2006, the number increased by 21 per cent. Between 1986 and 1996, the number of journey-to-work trips made on foot fell by 8 per cent; between 1996 and 2006, the number increased by 17 per cent. So what has changed? Well, a lot of things perhaps — more expensive petrol, more cycle paths, better information on the health benefits of exercise and so on — but I am willing to bet that the biggest single factor is quite simply a change of attitude. In 1996, it was ‘uncool’ to cycle or walk to work; in 2006, it was very cool. And, as Steve Jobs has amply demonstrated, what is cool is not decided autonomously or endogenously by individual economic agents: it is a social construct, and one that can be formed by clever and well-resourced marketing initiatives. There is no obvious reason that the same tools should not be used to reduce the costs of congestion — economic, health and environmental.

References

- ATC (Australian Transport Council) 2009, *Australian Capital City Congestion Management Case Studies*, report of the Urban Congestion Working Group, ATC.
- Australia's Future Tax System Review Panel 2010, *Australia's Future Tax System: Report to the Treasurer*, (Dr Ken Henry, Chair), The Treasury, Canberra.
- BAH (Booz Allen and Hamilton) 2006, *Review of Urban Congestion Trends, Impacts and Solutions*, report prepared for the Council of Australian Governments.
- BITRE (Bureau of Infrastructure, Transport and Regional Economics) 2009, *Urban Australian Transport Statistics Yearbook 2009*, BTRE, Canberra.
- BTE (Bureau of Transport Economics) 1999, *Urban Transport: Looking Ahead*, Information sheet 14, BTE, Canberra.
- 2000, *Urban Congestion: Implications for Greenhouse Gas Emissions*, Information sheet 16, BTE, Canberra.
- BTRE (Bureau of Transport and Regional Economics) 2007, *Estimating Urban Traffic and Congestion Cost Trends for Australian Cities*, Working Paper 71, BTRE, Canberra.
- EDF (Environment Defense Fund) 2008, *State Nixes NYC Congestion Pricing Plan*, www.edf.org/article.cfm?contentID=6618 (accessed 22 February 2011).
- Haynes, R. 2010, 'Motorists shrug off higher time-of-day tolls', *Daily Telegraph*, 18 January.
- Hau, T.D. 1998, 'Congestion pricing and road investment', in Button, K.J. and Verhoef, E.T. (eds), *Road Pricing, Traffic Congestion and the Environment*, Edward Elgar Publishing Limited, Cheltenham, pp. 39–78.
- Henry tax review. See Australia's Future Tax System Review Panel 2010.
- Hubbard, P. 2009, 'Urban congestion: why free roads are costly', *Economic Roundup*, issue 2, downloaded from Australian Treasury website, www.treasury.gov.au (1 March 2011).
- Infrastructure Australia 2010, *National Infrastructure Priorities: Infrastructure for an Economically, Socially, and Environmentally Sustainable Future*, Infrastructure Australia, Canberra.
- IPA (Infrastructure Partnerships Australia) 2009, '\$8.5 billion investment in urban rail to ease congestion, evolve cities — process rigorous, independent', Media release, 12 May.

-
- KT Analytics 2008, *Lessons Learned from International Experience in Congestion Pricing: Final Report*, report prepared for United States Department of Transportation, Federal Highway Administration.
- Lawphongpanich, Siriphong, Yin Yafeng and Hearn D.W. 2007, 'Congestion pricing: gaining public acceptance', paper presented at Sixth Triennial Symposium on Transportation Analysis (ITRISTAN VI), Phuket, 10–15 June.
- Mohring, H.D. 1976, *Transportation Economics*, Balinger Press, Cambridge MA.
- Newbery, D.M.G. 1989, 'Cost recovery from optimally designed roads', *Economica*, vol. 56, May, pp. 165–85.
- Taylor, B.D. 2002, 'Rethinking traffic congestion', *Access*, vol. 21, Fall.
- TfL (Transport for London) 2010, *Annual Report 2009-10*, TfL.
- 2011, *Congestion charging: when to pay*, TfL website, <http://www.gov.uk> (accessed 7 March 2011).
- VCEC (Victorian Competition and Efficiency Commission) 2006, *Making the right choices: options for managing transport congestion*, Final report, VCEC.
- Vickrey, W.S. 1963, 'Pricing in urban and suburban transport', *American Economic Review Papers and Proceedings*, May, pp. 452–65.

Discussant comments

Henry Ergas

There is much in Steve Meyrick's paper I agree with, but let me start with a few points by way of premise, in some cases emphasising and in others clarifying issues he raises.

My first point is that congestion is not a problem. Rather, it is a solution: a solution to the fact that when roads are unpriced, more people want to use them at peak times than can be accommodated at free flow or even at speeds anywhere near it.

The second point is that that solution is objectionable not because it results in traffic jams but because those jams are potentially inefficient. It is that inefficiency economists dislike, not traffic jams themselves.

What is objectionable, in other words, is not the fact of slow speeds; rather, it is that the 'allocation by ordeal' effected by congestion results in a lower level of social welfare than would obtain were traffic levels at the point where the marginal social cost of an additional vehicle, including its impact on the costs borne by other road users, just equalled the private benefit derived by that additional vehicle's user or users.

Whether road pricing is or is not desirable—and this is my third point—therefore does not depend on whether it reduces congestion, as the paper, though usually clear on this point, at times implies (for instance, in discussing the experience of Singapore).

After all, congestion could be abolished by a punitive tax on private car ownership by all but government officials, a solution likely to be favoured in Canberra but that would be less wholeheartedly welcomed by economists interested in maximising social welfare, much less by the great unwashed.

Rather, the desirability of road charging, or indeed of any other method of dealing with traffic demand, depends only on whether road pricing allows us to move towards the efficient point, and to do so with costs that are less than the benefits.

Given those points by way of background, I now want to comment on three specific questions.

How big a problem?

First, what is the magnitude of the congestion, and what role is played in it, today and in the immediate future, by changes in population?

The central element in the charge sheet against the situation as it stands is the estimates of the current and projected costs of traffic congestion published by the Bureau of Transport and Regional Economics and cited by the Henry Tax Review in its report on Australia's Future Tax System (AFTS) and in this paper.

I am sceptical of those estimates for a broad range of technical reasons, but let me mention four.

First, the estimates that AFTS and Meyrick cite are the midpoints of an extremely wide range, spanning from \$5 billion to \$15 billion.

Second, the researchers themselves issue warnings about the methodology adopted, explaining that it aims to provide broad estimates of the scale of a city's congestion situation using aggregate indicators of a city's average traffic conditions.

However, it is widely understood that accurate assessments of congestion can only be achieved using detailed network models. An earlier report by the Bureau of Transport and Communications Economics (precursor to the BITRE) warned that (aggregated) analysis 'provides little guidance to policy makers concerned with reducing different levels of congestion in various parts of a city.'

Third, the report's estimates for recent periods, suggesting a picture of a nation stuck in traffic, sit uncomfortably both with the results of traffic speed surveys, which show some uneven and limited slowing, and of surveys such as IBM's Global Traffic Pain Index, which places Melbourne, for example, among the cities with the lowest levels of 'traffic pain'. Equally, the results on travel times in the successive HILDA surveys point to relatively little increase, especially when the shift of some travel to public transport, with its relatively long commute times, is taken into account. These all suggest that travel times are rising, but far more slowly than the bureau's trend line would suggest.

Fourth, there are problems with the projections used in the analysis, and many complexities are involved in their interpretation. For example, Steve cites estimates of the contribution of population growth to congestion costs. Those estimates suggest that population growth plays a minor role in increasing congestion costs.

However, it is crucial to distinguish between volume and price changes. Some part of the projected growth in aggregate congestion costs will come from increases in the value of time as wages rise in line with the marginal product of labour. Those increases will raise the costs of congestion at any given level of traffic delays: indeed, they would be likely to increase aggregate congestion costs even if delays were shrinking. But that change in the price of a unit delay must be stripped out if one wants to understand the impact of population changes. Rather, one must focus on what is happening to volumes.

On this, the report itself says that ‘for most cities the increase in travel per person has just about saturated’ (p. 8). This means volume changes must come either from growth in freight traffic or from increases in population. Most estimates of freight growth in CBDs, including the bureau’s own subsequent work, point to modest increases, or even declines, in intensity (that is, of freight task per unit of GDP). As a result, one would expect a high share of the projected increase in volumes to come from population growth.

It is therefore misleading to infer from the estimates that projected population change has little impact. Rather, I suspect that, properly analysed, it accounts for the bulk of the underlying volume increase and for a large part of any change in traffic delays.

Combined, these issues and many others lead me to stress the need to be very cautious in the use of the bureau’s estimates. However, that is not to dispute the proposition that there are parts of our cities that are heavily congested. Moreover, my own assessment is that rapid population growth in those cities would, under current conditions, materially slow travel times and lead to rising social costs of congestion.

Can congestion charging solve the problem?

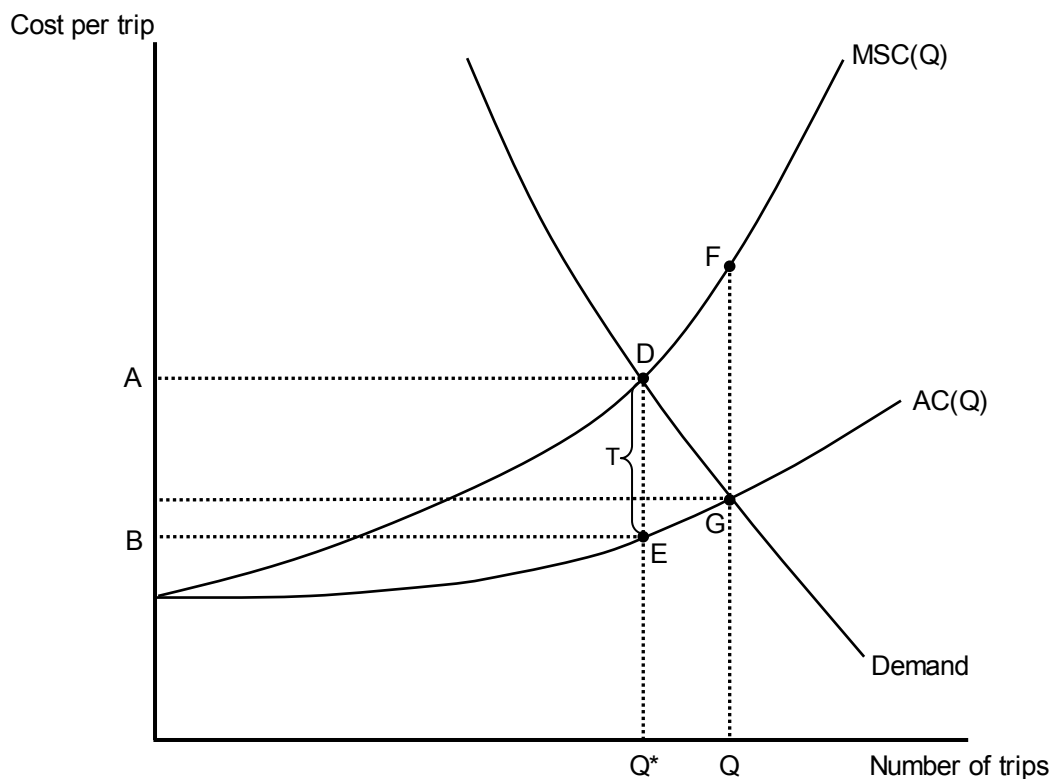
A great merit of congestion charging is that it is a method of increasing the efficiency of road use that is not undermined by demand response; that is, by the fact that a reduction in congestion due, say, to capacity expansion, will induce short- and long-run traffic adjustments (Downs’s ‘triple convergence’ in the short run and changes in location in the long run) that tend to return delays to their original level.

As Meyrick rightly emphasises, that does not mean those initial congestion-reducing initiatives, such as capacity expansion, are not worthwhile. Rather, that depends on whether their benefits, including during the period it takes traffic to adjust, exceed their costs. But an offsetting demand response does make it more

difficult for those initiatives to reduce travel times and vehicle operating costs sufficiently and sufficiently durably for a proper cost–benefit test to be passed. However, that does not mean congestion charging is a no-brainer.

To see why, consider the simplest conceptual framework for assessing congestion charges (Figure 7.5). In this framework, the average cost (AC) of drivers' trips is less than the marginal social cost (MSC) of the trips because drivers do not pay for their contribution to congestion and delays. The result is an inefficiently high number of trips. An optimal congestion toll, τ , reduces travel from its inefficient level Q , to the optimal level Q^* , given current road capacity. In response to the toll, some motorists no longer use the road during peak periods while others continue to use the road and pay the toll. The loss to both groups is given by the area ADGEB. The toll raises revenue equal to ADEB. The toll also reduces but does not eliminate the social cost of delay: the efficient level of congestion, in the sense of delay relative to free flow, is not zero. The gain from reducing the social cost of delay to the efficient level is given by the area DFGE. Comparing the areas yields a welfare gain of FDG.

Figure 7.5 **A framework for assessing congestion charges**



Now, two points can be derived from this simple analysis.

First, although the welfare impact of the toll on individual motorists will depend on their value of time, on average, motorists' welfare will be reduced by the toll because the initial full price of travel, including the cost of travel time, was below the marginal social cost of travel. On net, the toll results in a welfare gain, but this is only because the toll revenues to the government exceed the net loss to motorists. In other words, at least in this world, motorists are necessarily worse off from congestion charging, all else equal.

Second, while there is a welfare gain, it is small relative to the loss in consumer surplus and the gain in revenues (that is, in congestion taxes collected by the road owner). In other words, as with most corrective taxes, the transfers from consumers to government are very large compared to the welfare improvement.

Three implications follow.

First, it does not take much by way of the costs involved in developing and implementing a congestion charging system to swamp any welfare gains. This is the point Meyrick makes with respect to London, and that is equally applicable to Stockholm.

Second, the diagram assumes a dollar is a dollar, so the revenues transferred to government are a mere transfer. However, if some of those revenues are wasted, then the transferred revenues should be valued at less than a dollar (that is, there is some shrinkage along the way, with that shrinkage itself being a welfare loss). If there is such waste, then — as rectangles are larger than triangles — it takes proportionately very little of it to eliminate any efficiency gains from congestion charging.

This is crucially important, because it is common to suggest that the revenues from congestion charges be hypothecated to public transport projects that almost invariably have benefits that fall well short of their costs. Indeed, in the careful assessments of European congestion charging initiatives presented in de Palma, Lindsey and Proost (2007), the wasteful use of hypothecated funds from road tolls on misjudged public transport initiatives plays a central role in making many of those initiatives welfare-reducing in an overall sense.

Third, in itself, congestion charging will not solve the problems associated with rapid population growth. To see this, assume the policy question is whether the incumbent motorists (those who used the road originally) are better off. The answer is that they will not be, absent special income transfers back from government, because motorists as a group are worse off. Abstracting from the use of the

revenues, their welfare with the charge in place will be lower than it was without it, and presumably even lower than it was prior to the increase in migration.

All of this makes one relatively gloomy about congestion charging, so let me add two further elements of depressing news from what could be a very long list.

The first is that the very simple analysis set out in the conventional diagram abstracts from tax interaction effects; that is, it ignores the interaction between congestion charging and pre-existing distortions in the tax system. By and large, congestion charges tax commuting, which is a complement to labour. As our tax structure already creates a wedge between the private and social return on labour effort, the effect is to increase the distortion, imposing costs that typically rise rapidly with each increase in the effective tax rate. While the revenues collected from the toll could be used to partially offset those effects, whether a full offset is possible is an empirical question.

Second, there are complex distributional effects that are intimately bound up with the ultimate incidence of the congestion charge. One of them involves the interaction of congestion charging, choice of location and housing prices. In other words, in assessing congestion charging, account must be taken of the fact that in the long run residential and business location responds to changes in the full cost of transport, so that changes in that full cost alter land rents.

Now, in a sense, these effects are favourable to congestion charging because they mean that traffic responds more to the charge than it would were the choice of location fixed. The demand curve shifts, in other words, to be more elastic, reducing the optimal toll and the welfare loss to motorists, and increasing the first-round welfare gains from congestion charging.

However, the net impact of unpriced congestion is to increase house prices, because the average resident benefits more from driving than he or she is hurt by delays. When the congestion charge is introduced, part of its incidence is shifted back, and house prices and land rents must fall. And they must fall especially on home owners in the more outlying areas, with highly distorting taxes on the sale and purchase of houses (stamp duties) only increasing the loss those households bear.

Of course, the government could, in principle, compensate those households, as aggregate revenues from the toll exceed the fall in rents. Whether and how that compensation could occur in practice, and with what welfare costs of its own, are obviously other complex issues that we do not have time to canvass.

But the point I want to stress is that the typical Australian household has two major assets: the family home and a primary job. Both of those assets are largely

uninsurable as far as their capital value is concerned. Introducing a congestion charge threatens the value of the first, particularly in suburban areas, and reduces the net value of the second. For risk-averse households, it is not difficult to see why this would seem like a pretty bad thing.

At this point, proponents of congestion charging typically talk about wider economic benefits — such as enhanced agglomeration economies and better choice of transport investments — and about using the revenue for worthwhile ends, such as building more roads.

There is indeed merit to each of those arguments, but that does not mean they can simply be assumed to outweigh the costs associated with introducing congestion charging.

What role for other instruments?

Finally, I will say a few words about other instruments for dealing with congestion touched on in the paper. My point on each of these would be the same: that they may have merit, but need to be subjected to proper cost–benefit analysis.

There is one, however, that Meyrick seems to endorse and that rather irks me: proposals to deal with congestion by mandating increases in urban density. At least as a method of reducing congestion, those proposals are ill-advised.

First of all, they override long-established and still strong community preferences for lower density living. To the extent that those preferences are exercised in the face of cost-reflective prices, overriding them is inefficient. If the relevant prices are not cost-reflective, the solution is to try to make them so, rather than to impose a particular urban form.

But second and perhaps more important, they are doomed to be ineffective. Given the durability of the existing building stock, the impact of densification is far too small to alter transport patterns, other than by increasing congestion in the areas where denser development occurs. Moreover, carried out on a large scale, it is extremely costly relative to the social value of any feasible reductions it might allow in commuting times. And, last but not least, its advocates are usually blissfully ignorant of even the elementary economics that shape its consequences.

Assume, for example, as the proponents of higher density seem to, that capital and land are good (but plainly not quite perfect) substitutes. That means small decreases in the price of land cause large decreases in the density of development on that land. Now rezone an area to get rid of the park in an inner suburb. The first level of

response is that the boundary of the metropolitan area moves in. This reduces land prices everywhere, but reduces them most right next to the CBD. So of all still-inhabited areas, the reduction in density is greatest right next to the urban centre. This will force the boundary of the metropolitan area out further, closer to where it had been before the change in zoning. Indeed, lower land prices everywhere lead to lower densities everywhere, and so the boundary could go back very close to where it had been before, but the biggest effect will be right next to the CBD.

In essence, the increase in density in the inner suburbs will therefore come mainly at the expense of density in the CBD. It is difficult to see why this would be desirable.

In short, economics does not have magic bullets for improving traffic flows. But at least let us try to better understand the merits and demerits of the instruments we have.

References

de Palma, A., Lindsey, R. and Proost, S. (eds) 2007, Investment and the Use of Tax and Toll Revenues in the Transport Sector, *Research in Transportation Economics*, vol. 19, JAI Press, Oxford.

8 Is decentralisation the answer?

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University of Adelaide

8.1 Introduction

There are no simple ‘single bullet’ solutions to achieving a sustainable population in Australia. Balancing the need for some population growth with the fundamental need to significantly reduce environmental impacts represents a complex challenge but one that is achievable via an integrated economic, population and environmental strategy. Such a strategy must involve a range of considerations but one must relate to population distribution. The population discourse in Australia must not only be about how many people but also where they will live. An important part of a sustainable population strategy must involve working towards a better balance of population distribution and the distribution of resources.

Australia has a distinctive population distribution, the main structure of which has changed little in 140 years. This paper argues that we need to ask whether this pattern of human settlement is consistent with a future sustainable national population. Over the past century at state and federal levels, there have been many attempts, with little or no success, to decentralise the national population, which has been concentrated in state capital cities and coastal areas. However, it is argued here that, while it is important not to ignore the lessons of history, it is time to have a new look at the national settlement system.

8.2 A distinctive population distribution

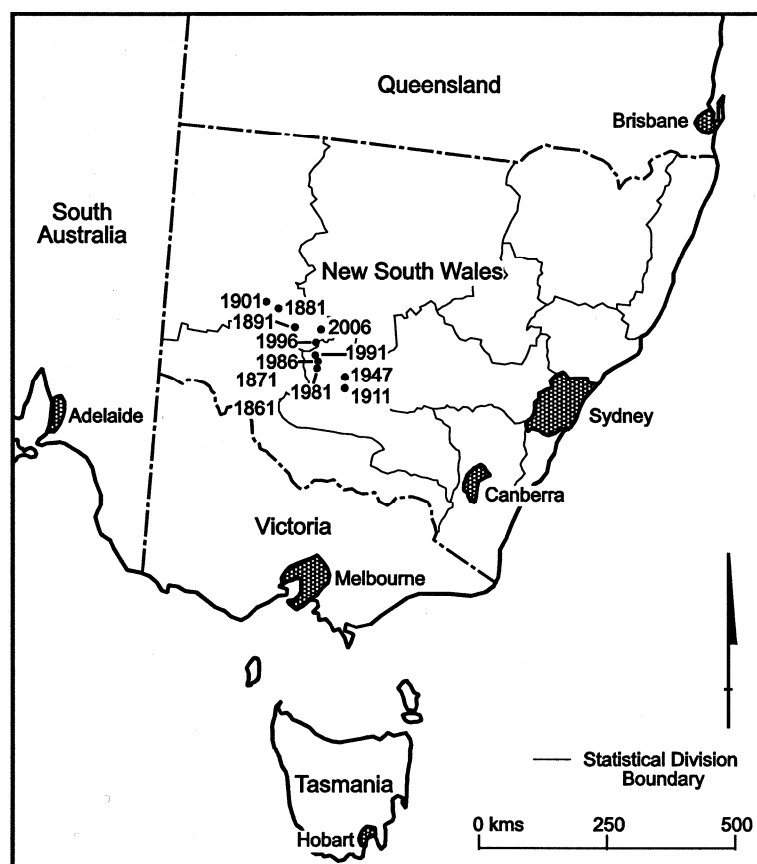
Australia also has one of the most spatially concentrated populations of any nation. This pattern of concentration has a number of dimensions (Hugo 2003):

- 87 per cent live in urban areas.
- 64 per cent live in capital cities.
- 81 per cent live within 50 kilometres of the coast.

- 0.8 per cent live in the 70.5 per cent of the land area of the continent with a population density of less than 0.1 people per square kilometre.
- 76 per cent live in the 0.33 per cent of the land area within 100 people or more per square kilometre.

This distinctive pattern has been remarkably stable over the past 150 years. Almost a century ago, geographer Griffith Taylor (1922) contended that the basic structure of Australia's population distribution had been established by 1860 and that future population growth would simply confirm that pattern, since it reflected the environmental constraints of the continent. In many ways, his contention has been proved correct. Figure 8.1 shows that the location of Australia's centre of gravity of population, or 'population centroid', has moved very little over the past century, with only a minor displacement north and west reflecting the faster growth of Queensland and Western Australia over recent decades. This pattern of overall stability in the structure of population distribution, however, is very much one of 'dynamic stability', since there is a great deal of mobility within the broad pattern of concentration of population.

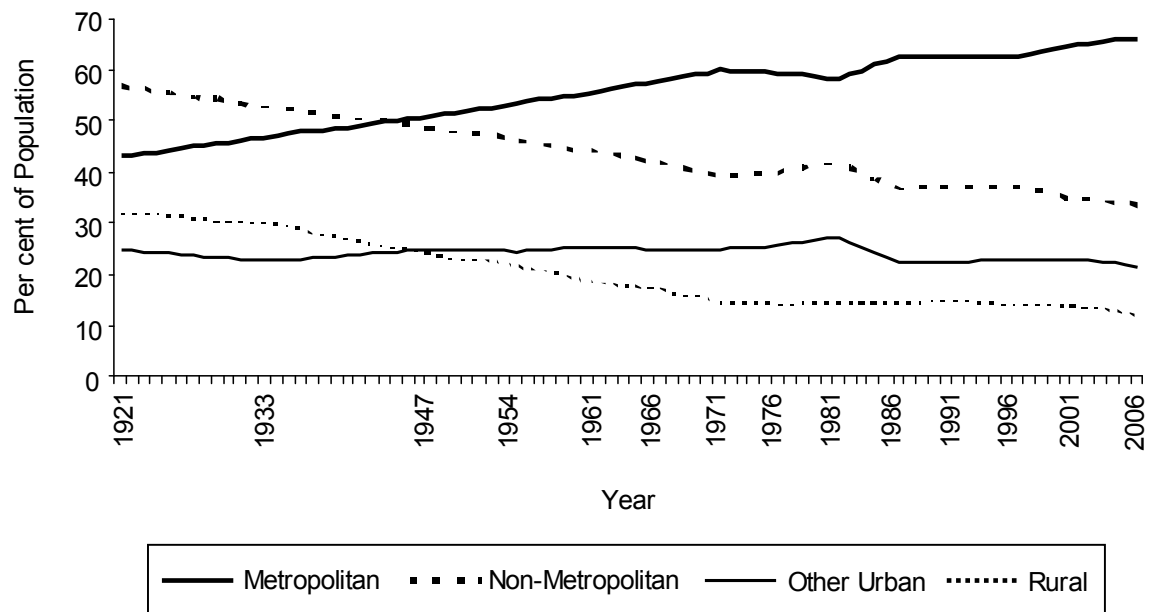
Figure 8.1 Australia: centre of gravity of population, 1861 to 2009



Data sources: Calculated from ABS historical statistics and ABS (2010a)

There is also a degree of stability in the proportions of the national population living in metropolitan, other urban and rural areas. Figure 8.2 indicates that there has been little change over the past few decades in the proportions of the national population living in the three main section of state categories identified by the ABS.

Figure 8.2 Australia: changing distribution of the population between urban and rural sectors, 1921 to 2006



Data sources: Australian censuses, 1921 to 2006.

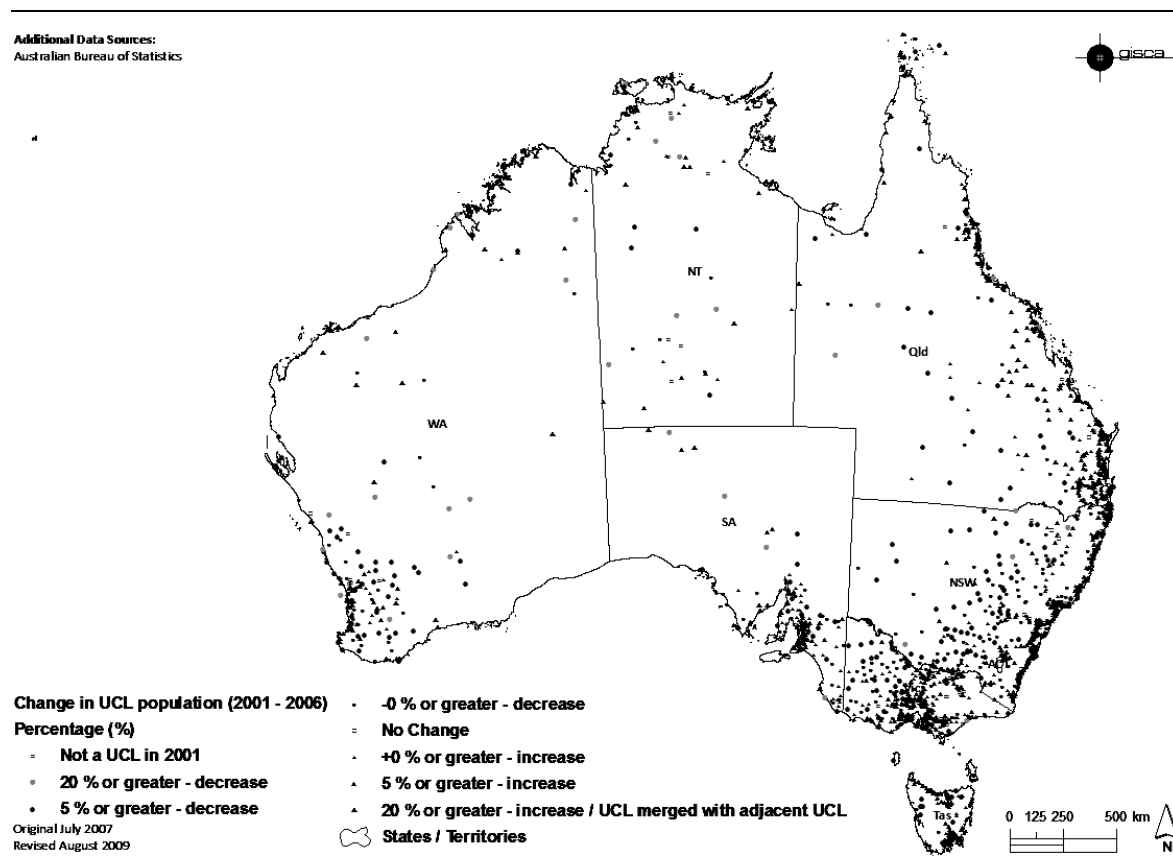
However, this pattern of stability within the Australian settlement system belies a great deal of dynamism and change. In fact, Australia's population has higher levels of international and internal migration than any other country:

- *International migration.* Half of the Australian population at any one time are permanent or temporary migrants or the Australia-born children of such migrants.
- *Internal migration.* A higher proportion of Australians change their permanent place of residence each year than any other national population (14.2 per cent of Australia's total population in 2006 lived elsewhere in Australia in 2005).
- *Temporary movement.* Australia has a high level of non-permanent movement involving long-distance commuting to work, seasonal migration (such as by 'grey nomads'), complex work-related and leisure-related movements and so on.

This high level of mobility is a function of, and a contributing factor to, Australia's economic development and growth.

Moreover, although there has been little change in the proportions of the national population living in metropolitan and non-metropolitan Australia, there have been substantial shifts within those sectors. Figure 8.3, for example, shows that the urban centres and country towns that experienced growth from 2001 to 2006 are concentrated in coastal areas and areas around major cities. On the other hand, those losing population tend to be inland. Table 8.1 demonstrates how population growth in non-metropolitan areas varies between areas according to their accessibility.

Figure 8.3 Australia: population change in country towns, 2001 to 2006



Data sources: Australian censuses of 2001 and 2006.

Table 8.1 Australia: population change by remoteness area, 1996-2009

	<i>Population change</i>	<i>Growth rate (%) p.a.</i>		
	<i>1996-2006</i> (‘000)	<i>1996-2001</i>	<i>2001-2006</i>	<i>2008-2009</i>
Major cities of Australia	2069.2	1.8	1.4	2.2
Inner regional Australia	330.2	0.3	1.4	2.1
Outer regional Australia	9.3	-0.7	0.8	1.7
Remote Australia	-12.2	-0.7	0.0	0.9
Very remote Australia	-5.7	-0.5	-0.2	1.2
Total	2390.80	1.2	1.3	2.1

Source: ABS.

8.3 Attempts to decentralise Australia’s population

Concerns about the distribution of the Australian population and the ‘balance’ between urban and rural areas go back to the early years of federation (Borrie 1994, p. 203). It lay behind the initiation of land settlement schemes and soldier settlement schemes (Rowland 1979). However, as Day (1972, p. 1) pointed out:

Since around the turn of the century decentralisation has been a commendable but unexciting part of the conventional wisdom. No one has ever been opposed to it. A great deal of lip service has been paid to it.

The 1964 Premiers’ Conference set up the Commonwealth/State Officials’ Committee on Decentralisation, which submitted its final report to the Prime Minister in 1972. At that time, the discussion on decentralisation gathered momentum due to rapid growth and emerging diseconomies in Australian cities and concerns about rural depopulation. However, for the first time the discussion about decentralisation began to focus on the relocation of manufacturing and service activities into non-metropolitan areas, rather than on the extension of agriculture. State governments produced reports on decentralisation (for example, Development Council of NSW 1969; Industries Development Committee 1964; Decentralisation Advisory Committee 1967), and there was active critiquing of such policies (Daly 1973; Hefford 1965; Simons and Lonergan 1973). There was debate not only as to whether decentralisation was desirable or not, but also as to whether decentralisation should be dispersed or selective and concentrated in particular areas.

By the early 1970s, the concentration of the Australian population in capital cities had reached unprecedented levels and was attracting increasing concern (Vipond

1989, p. 66). Neutze (1965) analysed the increasing diseconomies apparent in Australia's growing cities, there was concern that large cities added to income inequalities (Stretton 1970) and there was increasing pressure to develop a coherent national urban development strategy (Lloyd and Troy 1981). With the development of the Cities Commission and the Department of Urban and Regional Development in 1972, the newly elected Labor federal government saw Canberra become involved in settlement and population distribution for the first time in the postwar era (Logan et al. 1975; Logan and Wilmoth 1975). The National Growth Centre Policy was developed, and investment in regional centres such as Albury–Wodonga was initiated (Cities Commission 1974). Moreover, an effort to develop a comprehensive national settlement policy began (Nielson 1976). Such was the level of activity that in 1978 Pryor was able to compile an impressive list of state and federal authorities and specific policy measures related to decentralisation. However, as Whitelaw and Maher (1988, p. 133) subsequently pointed out, 'Attempts to create a national settlement strategy in the early 1970s lost momentum with a change in government.'

From time to time since then, interest in regional development has flared in the federal arena but there has been no attempt to develop a comprehensive national settlement policy.

8.4 Recent population dynamics in non-metropolitan Australia

For several of the most recent intercensal periods, growth in the population living outside capital city statistical divisions (SDs) has been greater than that within the metropolitan areas (see table 8.2). Net international migration gain has been the most significant driver of metropolitan population growth. Table 8.3 shows that the international migration contribution varied between 69 per cent of net growth in Sydney to 20 per cent of that in Brisbane. Net internal migration gains from within Australia were responsible for 31.6 per cent of Brisbane's growth and 3 per cent of Perth's but there were net outmigrations from the other capitals, especially Sydney (a net internal migration loss of 121 000).

Table 8.2 Australia: distribution of overseas-born between capital cities and rest of states, 2001 and 2006

	<i>Number</i>	<i>2001 %</i>	<i>Number</i>	<i>2006 %</i>	<i>Growth rate 2001 to 2006</i>
Major capital cities	3 307 577	81.1	3 557 486	80.6	1.47
Rest of states	771 574	18.9	857 873	19.4	2.14
Total	4 079 151	100.0	4 415 359	100.0	1.60

Source: ABS censuses.

Table 8.3 Estimated components of population change in mainland state capital city statistical divisions, 2001 to 2006 ('000s)

		<i>Natural increase</i>	<i>Net international migration</i>	<i>Net internal migration</i>	<i>Population change</i>
Sydney	'000s	159	84	-121	122
	per cent	130.3	68.9	-99.2	100
Melbourne	'000s	121	124	-19	266
	per cent	53.5	54.9	-8.4	100
Brisbane	'000s	66	27	43	136
	per cent	48.5	19.9	31.6	100
Perth	'000s	49	53	3	105
	per cent	46.7	50.5	2.9	100
Adelaide	'000s	21	22	-10	33
	per cent	63.6	66.7	-30.3	100

Source: Hugo and Harris (2011).

Table 8.4 estimates the components of population change in all SDs across Australia over the period from 2001 to 2006. In the table, net migration is the combined result of internal and international migration. It is interesting that over the period only eight of Australia's SDs experienced an absolute decline in population (remote, north-western and western New South Wales, south central and north-west Queensland, northern South Australia and the Kimberley in Western Australia). Only Wimmera in Victoria, located in the more closely settled wheat–sheep belt, is an exception to this pattern.

It is possible to identify a relatively small number of *sinks* of significant net migration gain in the non-metropolitan sectors of each state. They are marked with an asterisk in table 8.4. It is striking that Queensland has more than a third of them. In fact, of the 14 non-metropolitan SDs that recorded a net migration gain of 5000 or more from 2001 to 2006, half were in Queensland.

Table 8.4 Australia: statistical divisions, 2001 to 2006

<i>Statistical Division</i>	<i>2001 Census</i>	<i>2006 Census</i>	<i>Population Change 2001-2006</i>	<i>Net Migration</i>		<i>Natural Increase</i>	
				<i>Number</i>	<i>% of Population Change</i>	<i>Number</i>	<i>% of Population Change</i>
Sydney	3949989	4119191	169202	-9278	-5.5	178480	105.5
Hunter	562409	589240	26831	6262*	23.3	20569	76.7
Illawarra	380687	394211	13524	110	0.8	13414	99.2
Richmond-Tweed	205162	219329	14167	8338*	58.9	5829	41.1
Mid-North Coast	266825	284674	17849	11109*	62.2	6740	37.8
Northern	170659	172396	1737	-5267	-303.2	7004	403.2
North Western	112022	111231	-791	-6149	777.4	5358	-677.4
Central West	167666	170897	3231	-3661	-113.3	6892	213.3
South Eastern	183026	197942	14916	8110*	54.4	6806	45.6
Murrumbidgee	143410	147292	3882	-2982	-76.8	6864	176.8
Murray	105941	110523	4582	583	12.7	3999	87.3
Far West	22585	22030	-555	-1242	223.8	687	-123.8
Melbourne	3357888	3592593	234705	87696	37.4	147009	62.6
Barwon	243375	259012	15637	6403*	40.9	9234	59.1
Western District	95488	98855	3367	29	0.9	3338	99.1
Central Highlands	134555	142219	7664	2452*	32	5212	68
Wimmera	48656	48441	-215	-1337	621.9	1122	-521.9
Mallee	85770	88601	2831	-432	-15.3	3263	115.3
Loddon	158233	168843	10610	4395*	41.4	6215	58.6
Goulburn	184008	195239	11231	3770*	33.6	7461	66.4
Ovens-Murray	88104	92587	4483	940	21	3543	79
East Gippsland	76927	80117	3190	989	31	2201	69
Gippsland	152722	159483	6761	1427	21.1	5334	78.9
Brisbane	1581803	1763133	181330	98357	54.2	82973	45.8
Gold Coast	413729	482318	68589	50888*	74.2	17701	25.8
Sunshine Coast	235220	276263	41043	31947*	77.8	9096	22.2
West Moreton	62740	68630	5890	3137*	53.3	2753	46.7
Wide Bay-Burnett	225228	254658	29430	20716*	70.4	8714	29.6
Darling Downs	202405	213756	11351	4673*	41.2	6678	58.8
South West	24854	24780	-74	-1507	2036.5	1433	-1936.5
Fitzroy	171485	188406	16921	6863*	40.6	10058	59.4
Central West	11677	10851	-826	-1384	167.6	558	-67.6
Mackay	130140	150171	20031	12118*	60.5	7913	39.5
Northern	181569	196672	15103	5100*	33.8	10003	66.2
Far North	211823	231049	19226	6482*	33.7	12744	66.3
North West	32535	30938	-1597	-4060	254.2	2463	-154.2
Adelaide	1070837	1105839	35002	3644	10.4	31358	89.6
Outer Adelaide	108670	123700	15030	10737*	71.4	4293	28.6
Yorke and Lower North	42252	43878	1626	845*	52	781	48
Murray Lands	65195	66805	1610	-569	-35.3	2179	135.3

(Continued next page)

Table 8.4 (continued)

Statistical Division	2001 Census	2006 Census	Population Change 2001-2006	Net Migration		Natural Increase	
				Number	% of Population Change	Number	% of Population Change
South East	59456	62219	2763	169	6.1	2594	93.9
Eyre	32190	33343	1153	-206	-17.9	1359	117.9
Northern	76146	75927	-219	-3378	1542.5	3159	-1442.5
Perth	1332002	1445077	113075	52653	46.6	60422	53.4
South West	180269	207343	27074	18587*	68.7	8487	31.3
Lower Great Southern	49548	52592	3044	870*	28.6	2174	71.4
Upper Great Southern	17564	17714	150	-675	-450	825	550
Midlands	49903	50411	508	-1718	-338.2	2226	438.2
South Eastern	51307	51894	587	-2930	-499.1	3517	599.1
Central	56766	57428	662	-2320	-350.5	2982	450.5
Pilbara	37137	41004	3867	456	11.8	3411	88.2
Kimberley	30340	29297	-1043	-3388	324.8	2345	-224.8
Greater Hobart	191128	200523	9395	3073	32.7	6322	67.3
Southern	33036	34927	1891	593	31.4	1298	68.6
Northern	128397	133930	5533	1537*	27.8	3996	72.2
Mersey-Lyell	101786	106131	4345	1030*	23.7	3315	76.3
Darwin	99320	105992	6672	579	8.7	6093	91.3
Northern Territory - Bal	83791	84910	1119	-5279	-471.8	6398	571.8
Canberra	307834	323056	15222	29	0.2	15193	99.8

*Non-metropolitan net migration sinks.

Source: Calculated from 2001 and 2006 Census population data.

Examination of internal migration data from the 2006 Census allows us to identify the number of people who moved into and out of each SD between 2001 and 2006 (this information is shown in Appendix A). From this, it is possible to identify the SDs that act as *sources* and experience net migration loss, and those that act as sinks and experience net migration gain. Table 8.5 shows the top 10 sinks and sources based on net migration between 2001 and 2006. Of the top 10 sinks, four are in Queensland and four in New South Wales, and one is in South Australia and one in Western Australia. In Queensland, the Gold Coast, Sunshine Coast and Wide Bay–Burnett SDs shared a net gain of some 66 000 people between 2001 and 2006. Mackay experienced a net gain of 5000 movers during the period, and while attractive living opportunities may account for some of the influx, agriculture and mining activity in the hinterland is clearly an additional factor accounting for the net gains. In New South Wales, the four main sink SDs gained around 32 000 people in the five years to 2006. Three of these SDs — Richmond–Tweed, Mid-North Coast and Hunter — are to the north of the Sydney SD, while the South Eastern SD is to the south. Each of these SDs is in the coastal zone and has attracted substantial

numbers of Sydney people leaving the increasingly congested environment of Sydney for the north and south coast regions. The other areas of growth are in the peri-urban areas of Perth and Adelaide. On the other hand, the major sources suffering significant net outmigration losses were the capital cities of Sydney, Melbourne and Adelaide. Hence, the overall net flow of resident population from capital cities to non-metropolitan areas is one of the most striking trends in Australian internal migration.

Table 8.5 Australia statistical divisions: major sinks and sources of net internal migration, 2001 to 2006

<i>Net gains</i>		<i>Net losses</i>	
<i>Sinks</i>		<i>Sources</i>	
<i>Statistical Division</i>	<i>Net Migration</i>	<i>Statistical Division</i>	<i>Net Migration</i>
Brisbane (Q)	42,750	Sydney (NSW)	121,012
Gold Coast (Q)	29,312	Melbourne (V)	18,709
Sunshine Coast (Q)	20,561	Adelaide (SA)	9,611
Wide Bay-Burnett (Q)	15,798	North West (Q)	6,506
Southwest (WA)	10,805	Balance (NT)	4,443
Mid North Coast (NSW)	10,254	South Eastern (WA)	3,725
Hunter (NSW)	9,656	Northwest (NSW)	3,439
Outer Adelaide (SA)	7,454	Northern (SA)	3,089
South Eastern (NSW)	6,501	Northern (NSW)	3,033
Richmond Tweed (NSW)	6,143	Murrumbidgee (NSW)	2,849

Source: ABS 2006 Census.

Turning to international migration, one of the major features of postwar immigration not only to Australia but also to North America and Europe was the increasing tendency with each census for a greater proportion of immigrant arrivals to settle in a few large ‘gateway cities’ (Price and Benton-Short 2008). This pattern prevailed up to 2000, but table 8.1 shows that in 2001–2006 intercensal period the overseas population grew faster outside the major capital city SDs than within them. This was the first time this occurred in the postwar period. Moreover, this decentralisation of migrant settlement has also been observed in the United States (Massey 2008), Canada (Carter et al. 2008), Europe (Jentsch 2007) and New Zealand (Spoonley and Bedford 2008).

This is a small, but perhaps significant, change that is a function of:

- the introduction of the State Specific and Regional Migration scheme, which provides bonus points for settling outside the main gateways
- the Department of Immigration and Citizenship scheme for encouraging refugee-humanitarian settlers to move initially to regional areas (Hugo et al. 2010)

-
- a trend throughout OECD countries for migrants to settle outside major cities
 - job shortages in regional Australia.

8.5 Rethinking the national settlement system

There are a number of reasons why the time seems opportune for us to examine the whole issue of whether or not the contemporary Australian settlement system is the most appropriate one to achieve national goals. The economic and environmental imperatives of the next four decades will present a very different set of challenges and opportunities from those that prevailed in the three decades following World War II, when decentralisation and regional development policies were last seriously put forward in Australia. Is our settlement structure in part an artefact of earlier political economies? Certainly, the Australian settlement system will remain dominated by a few large metropolitan centres, but may it serve the nation better if a greater proportion of future growth can be located in non-metropolitan Australia rather than added on to large metropolitan areas? These are questions for which we do not, at present, have the empirical evidence to give definitive answers.

Where people live is important to their wellbeing. Under any realistic scenario of the next four decades, most Australians will continue to live in major urban areas, especially the capital cities. However, the question must be asked as to whether the current settlement system will deliver the most sustainable, efficient and liveable outcomes for Australians over the next two decades in the light of emerging environmental, economic and social trends. Two issues are of particular relevance:

- How can we reshape our large cities so that they are more liveable, equitable, efficient and environmentally sustainable?
- Can a shift in the regional balance of development between metropolitan and non-metropolitan Australia deliver more liveable, equitable, efficient and environmentally sustainable outcomes for Australians?

It is the second question with which this paper is concerned.

Why should we revisit the issue of regional development and decentralisation? Some would argue that policy initiatives for decentralisation in the 1950s and early 1970s were tried with limited, if any, success. There are at least five reasons why the issue needs to be revisited:

- First, earlier initiatives often attempted to attract people ‘artificially’ to areas by creating job opportunities where there was not an existing economic potential.

-
- Second, the 21st century economic context is totally different from that which prevailed a half-century ago, when manufacturing was the key driver of economic and employment growth in Australia.
 - Third, environment has been a major influence shaping Australia's settlement system since initial European settlement (Taylor 1922), and climate change will add a new dimension to this.
 - Fourth, the dynamics of internal migration and international migrant settlement in Australia have changed significantly in the past decade.
 - Fifth, in other OECD countries there are many examples of regions that are more economically dynamic than major cities.

The broad structure of Australia's settlement system has been in place for 150 years, and the question needs to be asked as to whether that system is an optimal one to facilitate Australia moving towards a more economically and environmentally sustainable future. It is increasingly being asked whether modifying Australia's long-established settlement system based on capital cities could deliver several medium and long-term dividends, such as:

- a release of the economic potential of regions, which has been held back by lack of infrastructure investment
- achievement of a better balance between the distribution of people and the distribution of water in Australia
- relieving the pressure of rapid growth in and near the capital cities and hence saving scarce quality agricultural land and providing the opportunity to catch up in infrastructure
- reducing pollution and environmental degradation in large cities
- increasing housing availability and affordability
- reducing journey-to-work costs overall.

Employment and regional growth

A basic premise of discussions about regional development must be that regions identified for policy attention must have the potential to develop a sustained demand for employment. Jobs are a *sine qua non* of regional development. Failed early efforts at decentralisation have clearly demonstrated that the jobs cannot be created artificially. Any effort at regional development must be focused on regional communities where there is demonstrated evidence that the local economy provides the basis for sustained demand for workers. There are indications that in the

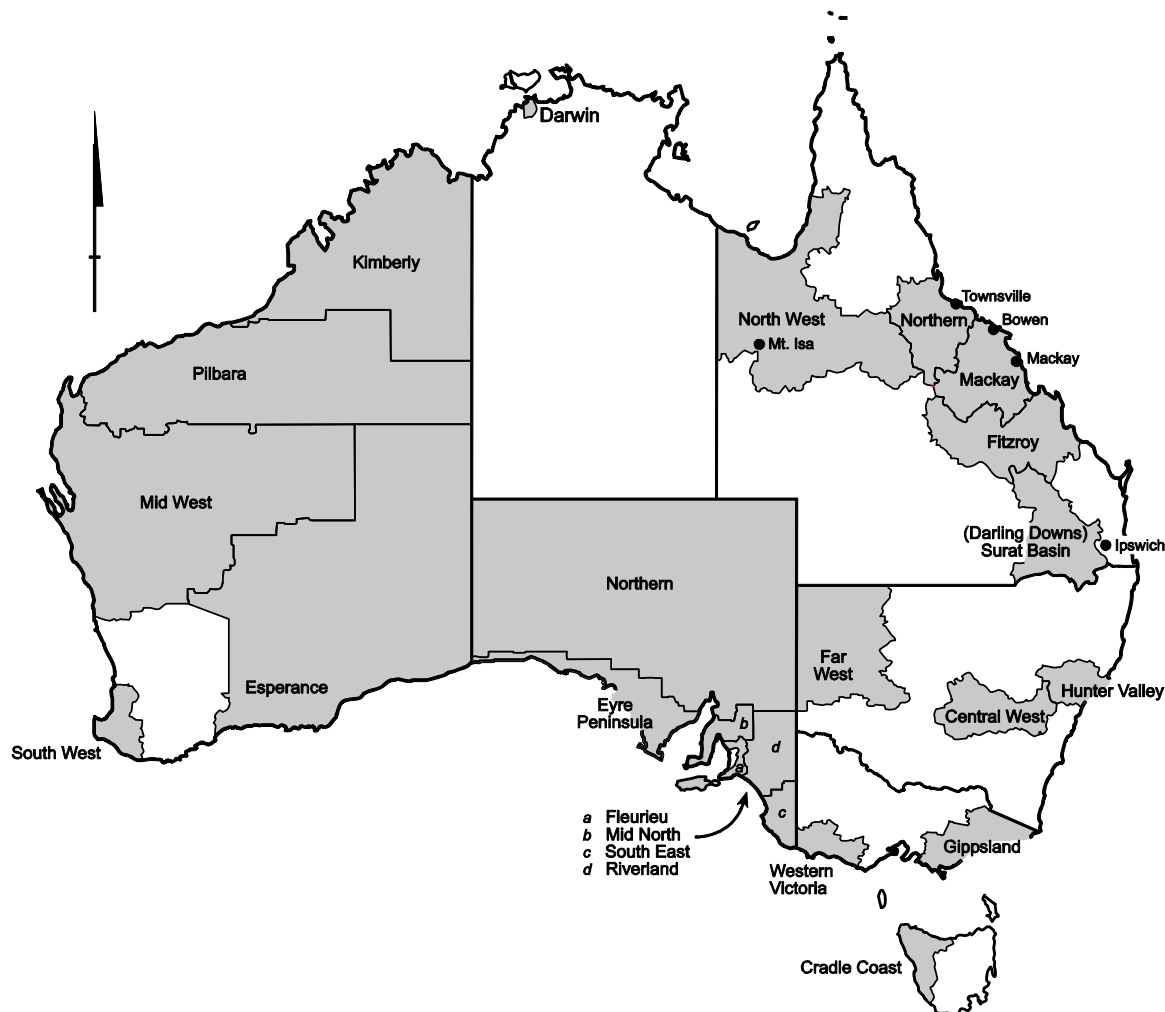
Australian economy of the 2010s a smaller proportion of economic activity is tied to a location in a major metropolitan centre.

One obvious candidate is mining. Mining is a quintessentially regionally based activity, as figure 8.4 demonstrates. At the 2006 Census, mining employed 90 833 Australians and that has probably subsequently increased by 50 per cent. However, as has been conclusively demonstrated by McMahon and Remy (2001) in a cross-national study, the mining industry has a profound impact on regional communities, especially in remote areas, with a local multiplier effect of more than 3. In Australia, however, the fly in, fly out and drive in, drive out phenomena have meant that the local multiplier impact is being muted. In the 2006 Census, 31.3 per cent of those employed in the mining industry were enumerated in cities with more than 100 000 people, and the two largest groups were in Perth and Brisbane.¹ Clearly, careful consideration needs to be given to the potential role of mining in facilitating regional development. In this consideration, however, it must also be borne in mind that while mining played an important role historically in developing non-metropolitan urban areas, many such centres went into rapid decline as deposits were exhausted or global mineral prices declined (Blainey 1963). In addition, there are documented cases in which the premature and sudden closure of a mining activity had a devastating impact on local communities, as in the case of the BHP Billiton's Ravensthorpe nickel operation in Western Australia (Browne, Buckley and Stehlik 2009).

However, mining is not the only growing element in the Australian economy that has a strong non-metropolitan orientation. Tourism, for example, currently accounts for 4.5 per cent of GDP and has a strong regional orientation because many remote areas are also significant tourist destinations. Building on tourism and mining in such areas to widen the economic base of those communities would seem to be one potential strategy for regional development that could deliver positive outcomes in liveability, economic growth and environmental sustainability. Moreover, the increasing Indigenous involvement in these activities can have an important social inclusion dividend. However, such outcomes will not just happen — careful and targeted infrastructure development are needed.

¹ Equally, however, it needs to be noted that the phenomenon has also facilitated development in many regional (especially coastal) communities because large numbers of mining workers have their usual place of residence in other non-metropolitan areas. Roxby Downs in South Australia has been called Kimba East because it has attracted a large number of workers whose usual place of residence remains in the northern Eyre Peninsula.

Figure 8.4 Location of mining regions identified by the Australian Minerals Council



The revolution in communication and information technologies has freed a whole range of economic activities in the tertiary and quaternary sectors of the economy from the need to be located in large metropolitan centres. In this context, the rollout of the National Broadband Network is especially relevant because it provides an important part of infrastructure to facilitate regional development. It needs to be stressed that there are other infrastructure elements that will also be crucial if internal and international migrants are to locate in regional areas.

Another economic issue of significance to non-metropolitan areas is retirement. Already, regional Australia has a higher representation of retired people than metropolitan Australia. A maintenance of this trend alone will see a large increase in the older population in these areas, with an attendant increase in demand for services and job creation effects because of the large numbers of baby boomers entering this stage of their lives over the next two decades. However, there are

strong indications that a larger *proportion* of baby boomers will move to regional areas than has been the case for earlier generations (Jackson and Felmington 2002).

With increasing demand for food, it is already apparent that some sectors of primary production and primary product processing are experiencing shortages of workers in non-metropolitan areas. This is exacerbated by outmigration of young adults from those areas and the fact that in almost two thirds of non-metropolitan local government areas the number of retirees leaving the workforce is larger than the number of school leavers entering the workforce.

Infrastructure

The key to shifting the balance of growth from the large cities to regional areas, however, is infrastructure. Mining and tourism, among other industries, provide the economic basis for sustainable economic development in several parts of Australia but they need infrastructure investment. Developing smart models in which industries such as mining and tourism can see a benefit in investing in that infrastructure in partnership with government provides a potential way forward.

A key question relates to where investments in infrastructure need to be targeted. While backlogs in the existing ‘sinks’ of rapid population growth need to be filled, there is also a need to think strategically about where infrastructure investment is targeted. In particular, the following question needs to be investigated carefully:

Given that Australia is likely to experience a significant continued increase in population (albeit not at the high levels of 2008-09), is there a case for providing infrastructure to facilitate growth in some regions outside the capital cities where there is both the economic potential to sustain a much larger community, the resources available to support a larger population and, with appropriate policy and safeguards, the ability to absorb population growth without compromising environmental sustainability?

The backlogs in contemporary hotspots of growth make it difficult to redirect infrastructure investments.

In most Australian States and Territories, there have been developed regional plans to provide a framework for their development. Such plans are a critically important prerequisite for accommodating growth (or decline) in a sustainable way. It needs to be stressed that there is a direct relationship between population growth and infrastructure need, and that provision of appropriate infrastructure in a timely way in the places where it is needed is crucial. It is apparent that governments (federal, state and local) have important and key roles to play in the provision of that infrastructure. However, the current growth of population and expected increases

raise the question of how increases in infrastructure can be funded when there are clearly backlogs of existing need for infrastructure. Governments will play a role, but increasingly models involving public–private partnerships and user-pays elements will need to be considered.

A study undertaken for Regional Cities Victoria by Essential Economics (2009) demonstrated that significant costs and efficiencies are associated with adding greater population to the outer suburbs of Melbourne. SGS Planning and Economics (2008) estimated the extra costs of congestion and greenhouse gas emissions associated with population growth in Melbourne at \$6270 per annum per additional person. The Regional Cities Victoria study estimated the costs of providing critical ‘hard infrastructure’ in regional cities to support higher populations compared with congestion inefficiencies associated with a similar level of growth in metropolitan Melbourne and found that by 2036:

- the additional cumulative cost of providing critical infrastructure to support a redistribution of approximately 50 000 people from metropolitan Melbourne to the regional cities is estimated to be \$1.0 billion (this compares with inefficiency costs of \$3.1 billion associated with the same number of people being accommodated in metropolitan Melbourne)
- the additional cumulative cost of redistributing approximately 115 000 people between metropolitan Melbourne and the regional cities is estimated to be \$2.1 billion, compared to inefficiency costs of \$7.0 billion associated with that population being accommodated in metropolitan Melbourne.

The Regional Cities Victoria report (Essential Economics 2009, p. 83) concluded that a number of net state benefits are associated with the redistribution of population growth from metropolitan Melbourne to the Regional Cities, including the following:

1. efficient use of taxpayer funds associated with the provision of infrastructure and resources to support population growth
2. redistribution of population growth reduces stress on metropolitan Melbourne infrastructure and reduces associated congestion and greenhouse gas emissions costs
3. better economic and social outcomes for regional communities that are likely to be achieved, such as:
 - enhanced investment opportunities for business
 - improved skills base
 - industry diversification

-
- improved service provision
 - enhanced lifestyle
 - support for small towns
 - improved social outcomes.

The third Intergenerational Report (Treasury 2010) shows that counterbalancing the impacts of ageing of the Australian population will necessitate increases in the three ‘Ps’ — population, participation and productivity, the last of which is most significant. Achieving increments in productivity is critical to Australia’s future. The implications for productivity of diverting a greater proportion of national population growth towards regional centres are unclear. Certainly, the modelling undertaken for Regional Cities Victoria cited above point to a productivity dividend, but this would require more detailed investigation.

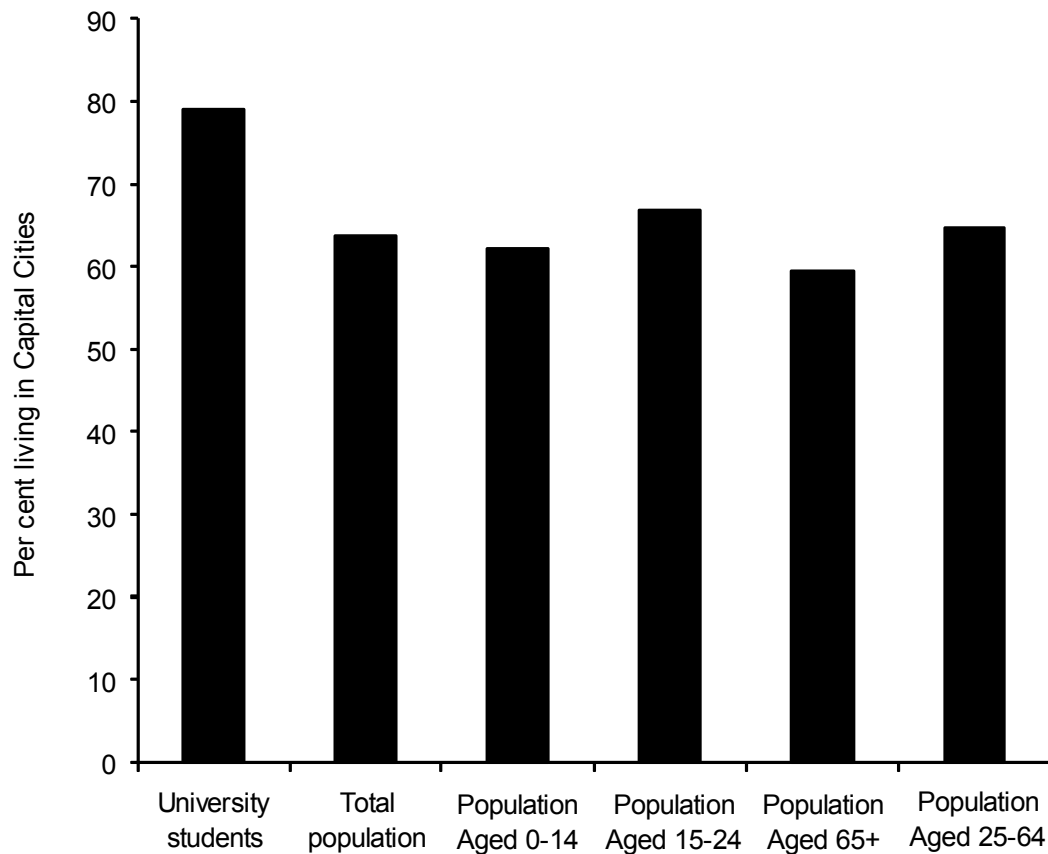
Internal migration

One of the major issues of concern in regional Australia is the large outflow of young adults. Many non-metropolitan young adults move to the capitals to pursue higher education or to seek work, as well as to experience the bright lights of a big city. This raises the question of the extent to which these young Australians would move into capitals if there were more extensive higher education opportunities available locally in non-metropolitan areas. Figure 8.5 shows that university students are more concentrated in capital cities than the total population, and a greater part of the total population in the 15–24 age group. The development of Australia’s regional universities has been considerable in the past two decades (figure 8.6 shows the locations and populations of all cities in Australia with significant university campuses). However, the question needs to be asked as to whether there is more scope for the location of university activity in regional centres. All of the great university countries in the world have a mix of high-quality large universities in their gateway cities and regional areas. The concept of the ‘university regional city’ is an important one in North America and Europe. The outlook for the Australian university sector over the next three decades must be one of growth in order to accommodate:

- the increased numbers of students resulting from the steady growth in numbers of 18–24-year-olds in most projections
- the Australian Government’s objective of increasing the proportion of 25–34-year-olds with a university education from 32 to 40 per cent
- the necessity for Australia to produce a new generation of skilled and better trained workers to enhance national productivity and competitiveness.

The extent to which some of the growth in universities can be integrated with and facilitate regional development needs to be considered.

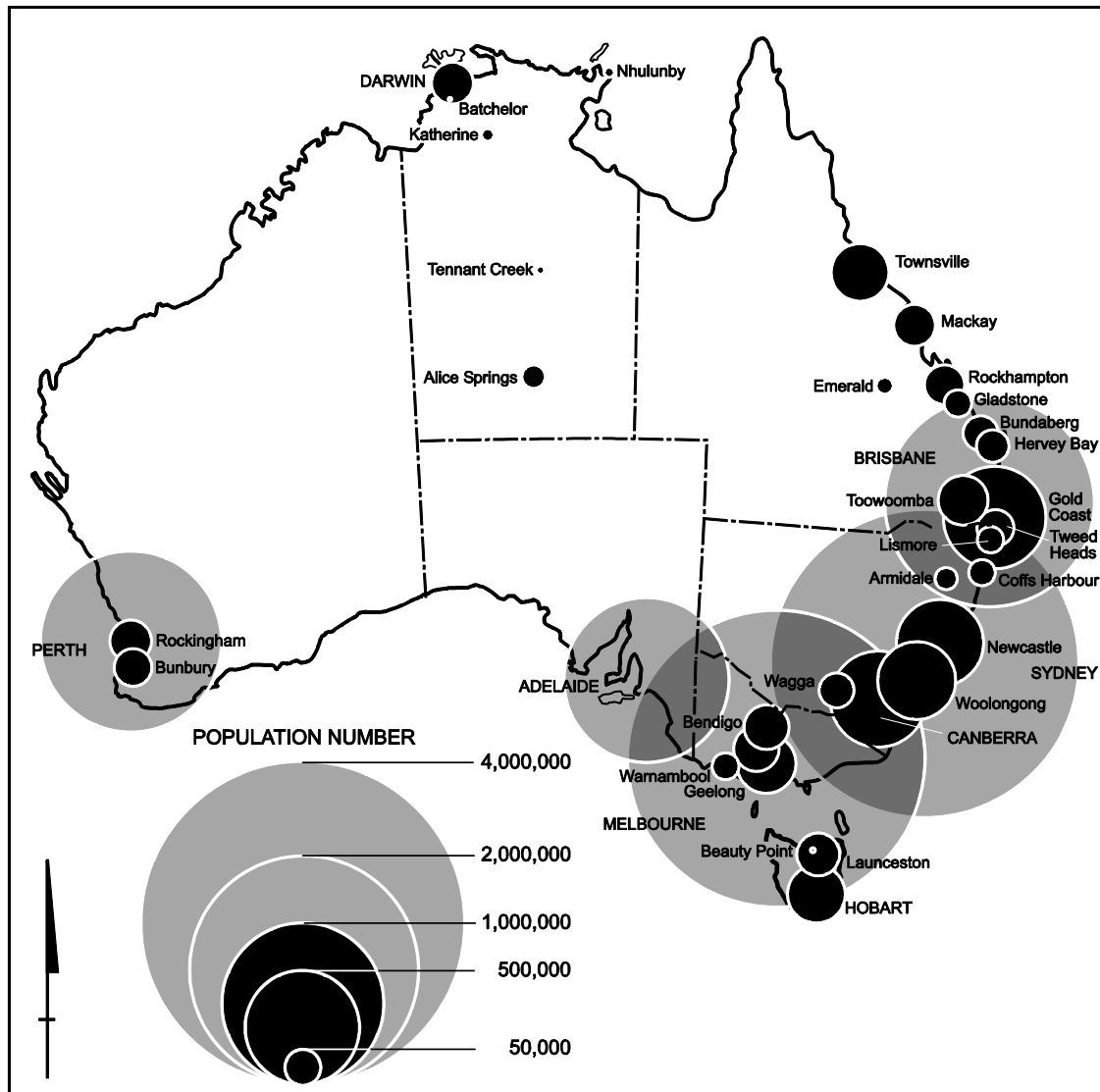
Figure 8.5 Australia: university students, total population and population by age group, 2006



Data source: ABS 2006 Census.

Another relevant factor in future internal migration relates to the impending retirement of baby boomers and their intentions about where they will live during their later working and retirement years. There are some indications that there will be a greater tendency for them to move from metropolitan to non-metropolitan locations at this stage of their lives than was the case for earlier cohorts. How can this phenomenon be incorporated into regional development? The potential for this group to create employment multipliers in regional communities has been established (Jackson and Felmington 2002).

Figure 8.6 **Locations and sizes of Australian urban places with university campuses, 2006**



Data source: ABS 2006 Census data

A number of findings about contemporary internal migration in Australia need to be considered in developing regional development policy:

- Some groups in the population are already demonstrating a preference for settling outside large cities by moving out of them. Understanding their motivations is important so that this trend can be enhanced and facilitated as part of a regional development strategy.
- The groups moving out of the capitals in larger numbers than they are moving in are not only those in the pre-retirement and early retirement years, but also

young families, so the potential for them to be active in the regional workforce is considerable.

- Having a satisfying and appropriately remunerated job to go to is of basic importance if Australians are to move to regional communities. However, while it is a necessary condition of internal migration it is often not sufficient. For young families, a crucial consideration is the availability of high-quality education and health services. This is an often overlooked factor in regional development but it is crucial. Governments cannot withdraw or downgrade services in regional areas and expect that people will move to those areas. Lifestyle and environment-related considerations are also important to young family movers, so integrating regional development explicitly with sustainable environment policy is also relevant.
- Contemporary internal migration from capitals to non-metropolitan centres has a strong geographical focus. The movement is *not* to all regional areas. A policy that seeks to distribute growth across the entire non-metropolitan sector will not be effective. There will need to be a focus on regional development in a limited number of communities that have the demonstrated potential for sustainable economic development.
- An important element in contemporary migration from capitals to non-metropolitan areas is the return movement of young families with members who left regional areas as young adults. Facilitating and encouraging that movement should be an important part of any regional development strategy.

International migration

One of the most pervasive trends in global international migration in OECD countries in the postwar era has been the concentration of immigrant settlers in a few gateway cities and their virtual absence in regional areas. However, the past decade has produced a change across Europe, North America and Australia. While large metropolitan centres are still the dominant destinations, there has been an important change: for the first time since World War II, the growth of immigrant populations has been greater outside gateway cities than in them. Table 8.2 shows that this was the case in Australia between the 2001 and 2006 censuses. A number of factors in the increased settlement of immigrants outside large cities involve both the changing dynamics of settlement processes and policy interventions. Among the former are:

- labour shortages in non-metropolitan areas because low fertility and ageing have been exacerbated by youth outmigration, so that more non-metropolitan than

metropolitan local government areas are experiencing more retirements than entries of young people to the labour force

- significant growth in job opportunities in some regional areas due to mining, tourism, retirement migration and increased demand for primary produce, both processed and unprocessed
- increasing awareness among local and regional government authorities and communities and private sector employers of international migrants as a source of workers (this has been evidenced by state, and to a lesser extent local, governments setting up institutional structures to facilitate immigrant recruitment and settlement)
- an increasing network effect once immigrant communities become established in regional areas.

In addition, a number of policy initiatives have encouraged immigrant settlement in non-metropolitan areas:

- The State Specific and Regional Migration (SSRM) scheme was expressly developed in the mid-1990s to attract immigrants to regional areas (communities with fewer than 200 000 people and/or experiencing a population growth of less than half the national average in the last intercensal period). This program has accounted for an increasing share of the immigration program intake over the past decade: 26 per cent of the 2009-10 intake was in the SSRM scheme (see table 8.6). While some of the SSRM migrants have been able to settle in capitals such as Adelaide (Hugo 2008), there has been an increased inflow to regional areas of skilled immigrants taking advantage of the discounts on the points requirement for qualification for settlement.

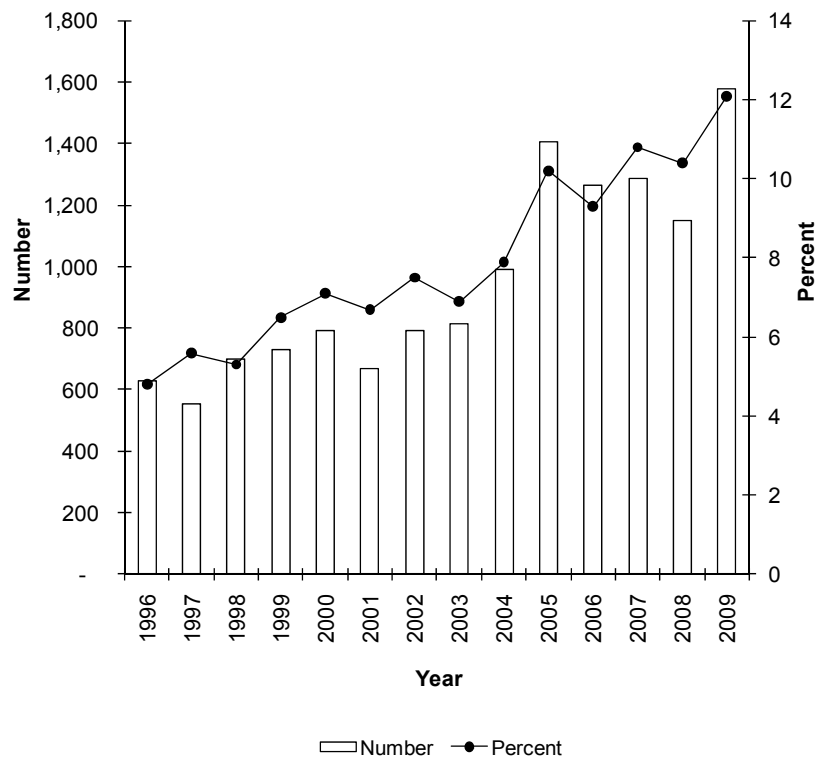
Table 8.6 Number of immigrants with visas granted under the state regional specific migration mechanisms and their proportion of the total non-humanitarian intake, 1997-98 to 2009-10

<i>Year</i>	<i>Number</i>	<i>Percentage of total non-humanitarian intake</i>
1997-1998	1 753	2.3
1998-1999	2 804	3.3
1999-2000	3 309	3.6
2000-2001	3 846	3.6
2001-2002	4 136	4.6
2002-2003	7 941	8.5
2003-2004	12 725	11.4
2004-2005	18 697	15.6
2005-2006	27 488	19.2
2006-2007	25 845	17.4
2007-2008	26 162	17.5
2008-2009	33 474	21.2
2009-2010	36 570	26.0

Sources: DIAC (n.d), DIAC (2010).

- The Department of Immigration and Citizenship established a special program in regional areas to facilitate the settlement of humanitarian settlers in regional areas. Figure 8.7 shows clearly how humanitarian settlers have in recent years shown a greater propensity to settle outside capital cities. This has partly been facilitated by the fact that humanitarian settlers include a greater proportion of settlers who derive from rural community backgrounds than other visa groups. Case studies indicate that, while such settlement has some problems, by and large the experience of refugee settlement in non-metropolitan areas has been positive. While local social capital is to some extent playing the role of ethnic networks and formal immigrant post-arrival services in the capitals, there is a need for relevant specific service provision and the sensitising of mainstream services to the needs of new settlers.
- The development of the skilled temporary (457 visa) migration program has been embraced by many regional employers to fill regional skilled labour shortages. Figure 8.8 shows that while 457 temporary skilled migrants are concentrated in capitals significant numbers have been recruited in regional Australia. A study of 457s by Hugo, Khoo and McDonald (2006) found that a significant proportion of 457s were prepared to go to regional areas provided that the work was appropriate to their skills and remuneration expectations and that there were appropriate housing, education and health services to meet the needs of them and their families.

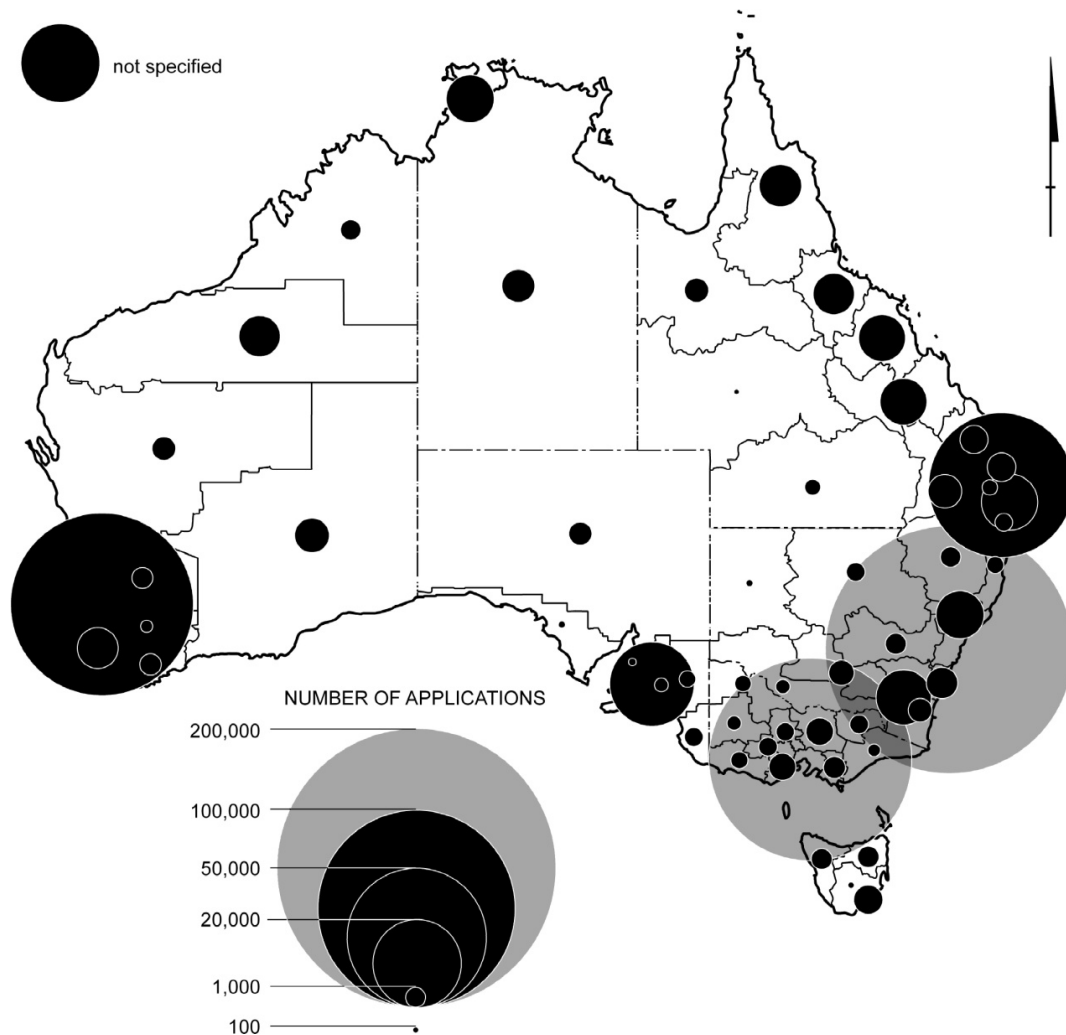
Figure 8.7 Australia: settlement of refugee-humanitarian settlers outside capital cities, 1996 to 2009



Data source: Department of Immigration and Citizenship, unpublished data.

- State and local governments have become unprecedentedly active in developing institutions and structures to attract and settle immigrants in their jurisdictions as they and their communities increasingly recognise the difficulties of attracting workers and families from other parts of Australia.
- Research on immigrant settlement in regional areas has drawn attention to the importance of immigrant settlers having access to appropriate services in their early years of settlement. This element is critical to their longer term settlement. A range of policies such as those under the SSRM scheme can ensure that immigrants are directed to initially settle and work in particular areas, but the key issue is what proportion remain in those areas. A recent study by Collins (2009) of immigrants in regional areas found that access to services and amenities was critical to the level of satisfaction of immigrants.

Figure 8.8 Australia: location of temporary skilled migrants, by statistical division, 2004-05 to 2010-11



Data source: Department of Immigration and Citizenship, unpublished data.

Despite the lack of empirical information on the settlement of new immigrant groups, a few policy dimensions are clear:

- Regional settlement will involve less clustering of immigrant groups and make the provision of post-arrival services more difficult than it is for immigrants who mainly settle in capital cities. It will be necessary to consider new ways of providing services to accommodate those needs.
- There will be less informal support available from existing ethnic communities, than is often available in large cities.
- There is a need to involve local government heavily in supplying needed post-arrival services.

These developments are not confined to Australia: there is increased settlement of immigrants outside gateway cities in Europe (Fonseca 2008; Halfacree 2008; Kasimis 2008; Moren-Alegret 2008; Rogaly 2008), the United States (Massey 2008), Canada (Asal 2008; Couton and Gaudet 2008) and New Zealand (Spoonley and Bedford, 2008). Policy has an important role in facilitating this process, as has the adaptation of local communities who have not previously experienced the settlement of diverse groups within them.

Housing issues

Having access to affordable, secure, healthy housing is fundamental to the wellbeing of Australians. Housing has significance for wellbeing and liveability beyond its shelter functions. It is clear that the Australian housing market is currently under stress and is a barrier to the wellbeing of a significant number of Australians and this is especially the case in growing regional areas.

Indications of disequilibrium in the Australian housing market include the following:

- The National Housing Supply Council (2010) estimates that there were 178 000 more potential house buyers than available houses, and that this ‘housing gap’ is widening.
- There is an estimated shortage of almost half a million dwellings that are both affordable and available to people in the bottom 40 per cent of the income distribution.
- The Henry Tax Review found that in mid-2009, 418 000 individuals and families paid more than 30 per cent of their income on housing in mid-2009 (Roux and Stanley 2010).

It is apparent that housing is a major constraint on regional development, and that housing shortages and affordability problems are significant in non-metropolitan as well as metropolitan areas. Demand for housing is closely linked to population growth, but for much of the recent era growth in demand has outpaced population growth. Continued high levels of population growth undoubtedly put pressure on housing markets, inflating prices and influencing housing affordability. Initiatives to accommodate a greater proportion of immigrant intake in regional areas should include consideration of the pressure that this will place on local housing markets. There is general recognition that Australia is experiencing a housing crisis, but this is often seen as being a crisis in Australia’s major cities. Strategic initiatives to overcome the crisis must include full consideration of regional areas.

Environmental sustainability

Striving for economic growth and the improved wellbeing of the Australian population need not be, and indeed must not be, at the cost of the environment. Too often in discussions of population, economic growth and environmental sustainability are seen as alternatives, but that need not be the case. The key challenge for Australian governments and the Australian people is to achieve a balance that takes environmental sustainability into account not only in policy and programs but in the behaviour of individuals, families and businesses. This is not an easy process and involves hard decisions not only by governments but by businesses and individual Australians. As the Victorian State of the Environment Report points out, to achieve growth with sustainability:

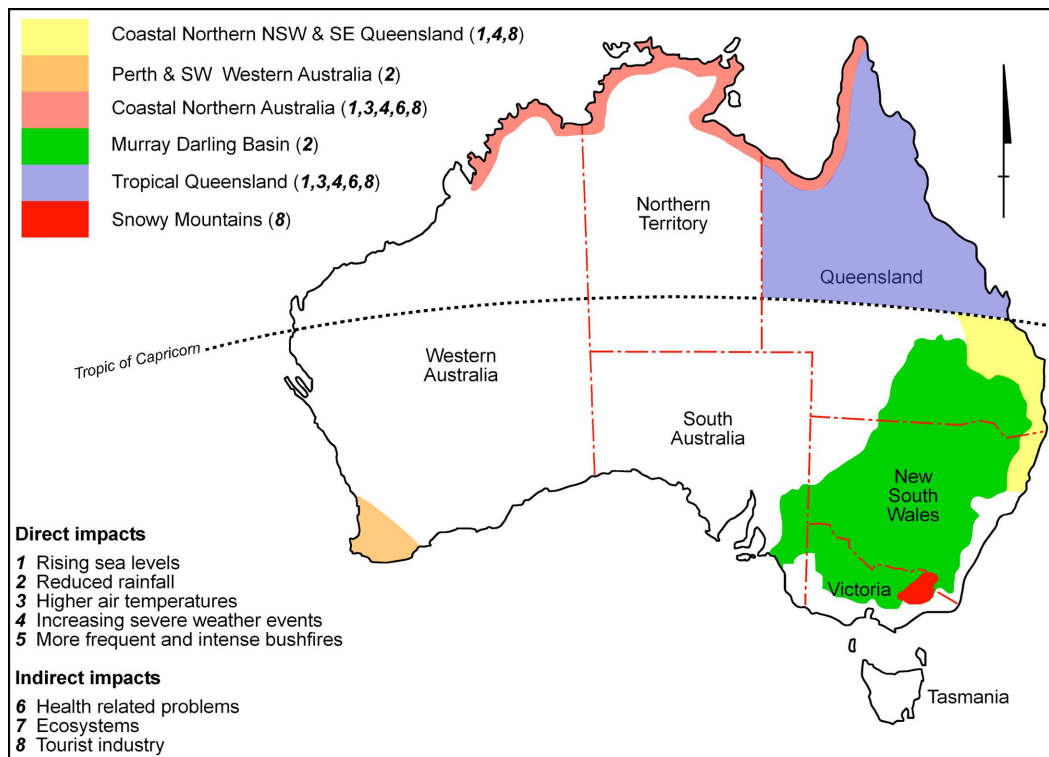
... the value of environmental services will need to be brought more comprehensively, transparently and explicitly into decision making. This will mean changes, but the sooner we act to improve the health of our environment the less dramatic the changes will need to be. (Commission of Environmental Sustainability Victoria 2010, p. 2)

The implications of regional development for moving towards sustainability are also unclear. Certainly, to the extent that pressures on metropolitan environments are reduced by diverting population growth elsewhere, there are environmental dividends. On the other hand, many regional environments are also fragile and subject to deterioration if population densities increase. Moreover, it is apparent from figure 8.9 that many of the hotspots of future climate change impact in Australia are in regional areas.

One of the elements to consider in the discussion on regional development is the extent to which better *matching* in the distribution of people and the distribution of natural resources will be achieved. Water is a key environmental issue that has an all-important population dimension, and the development of water and population policy needs to be an integrated process. Water must be an important consideration in decision making about the location of future investments and, while the mismatch between water and population in Australia does *not* call for a wholesale redistribution of population, there are a number of important population dimensions as we face a drier future for south-eastern and south-western Australia:

- Agriculture uses 50 per cent of water in Australia (ABS 2010b).
- The implications for agriculture need to be fully worked through. Do we need to consider some intensive agriculture being phased out in south-eastern Australia and developed in northern Australia and Tasmania, where there are assured sustainable water supplies? If the science means such a redistribution is necessary, a number of population elements need to be considered:

Figure 8.9 Climate change impact hotspots



Data source: Climate Action Network (<http://cana.net.au/>).

- The agricultural workforce in Australia is the oldest of any sector. To what extent can intensive agriculturalists be bought out so they can retire into local communities and hence maintain local economies where they have established social networks?
- To what extent can the skills built up in irrigated agriculture in areas such as the Murray–Darling Basin be utilised to develop new specialised agriculture elsewhere? That was how the agricultural frontier progressed in Australia in the 19th and 20th centuries. How can that process be carried out in the 21st century to fully compensate those displaced, facilitate their migration and settlement elsewhere, and encourage the growth of new agricultural industries in new parts of Australia?

These processes will not be easy. They need to be given time, they must be based on not only the best physical science but the best social science, and the rights and welfare of the Australians involved must be protected.

- Changing Australians' behaviour in the use of water, especially in cities, is clearly an area of enormous possibility. The response to recent water shortages in Australian cities has demonstrated conclusively that, given appropriate information, Australians can and will considerably modify their water consumption. Building on this experience to make better and less use of water is

crucial. Indeed, that experience can be built upon to change other environmentally relevant behaviours. Again, a combination of the best physical and social science, together with the full engagement of the community, will be necessary in this area.

- An additional part of the national strategy will also involve the traditional Australian response to expanding populations — seeking other water sources (Troy 2008). However, while in the past this has involved building new resources and pipelines, there is a great deal of scope to develop new technologies for water storage (especially in aquifers), capturing run-off and water reuse.

More than two decades ago, Nix (1988, p. 72) pointed to the mismatch in Australia between the distribution of water and that of population. Table 8.7, extracted from his work, demonstrates that southern Australia had 82 per cent of the population but only 27 per cent of the annual mean surface run-off. Of course, water is only one of the elements required for human settlement, and the table shows that there was a better matching of the distribution of arable land and population.

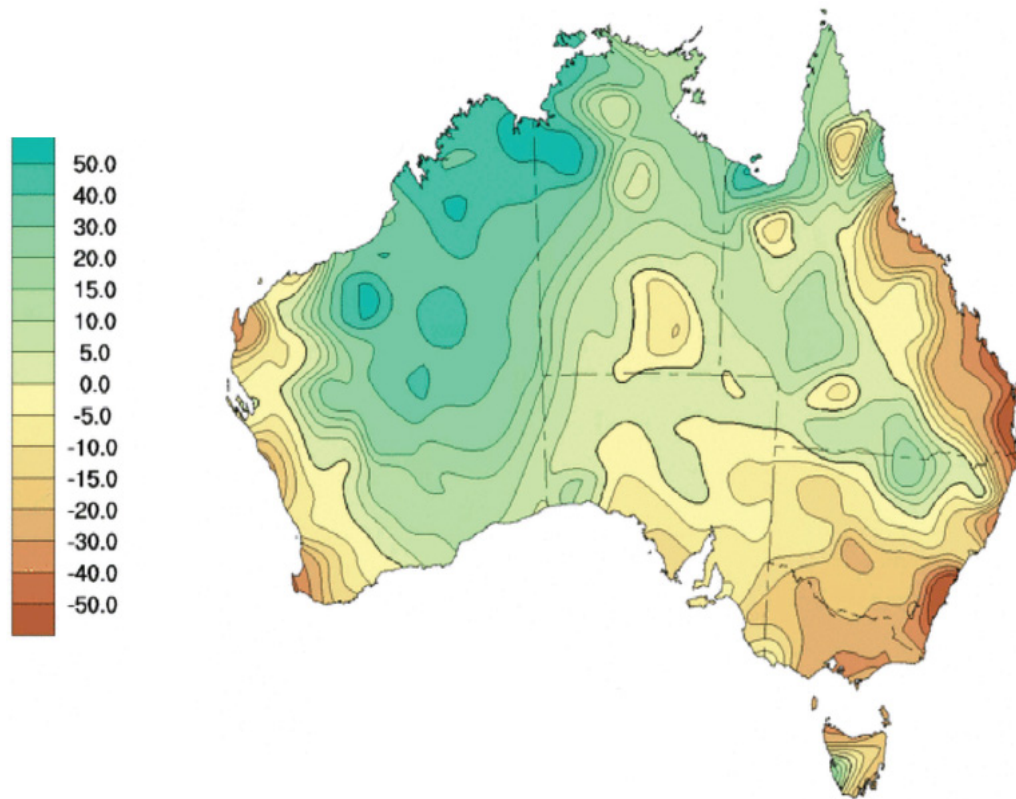
Nevertheless, water must be an important consideration in assessing where future population growth should be located, and the potential effects of climate change must be factored into those considerations. Figure 8.10 is a map of Australia produced by the CSIRO and the Bureau of Meteorology showing trends in annual total rainfall between 1960 and 2009. It shows a clear pattern of sustained rainfall decline in the south-east of the country and of increase in the north-west. Table 8.8 indicates that almost 90 per cent of Australia's population lives in the areas where climate change models suggest that rainfall and run-off are experiencing a long-term decline. Such a pattern does *not* call for a wholesale redistribution of population. However, it must be an influence on where future investment and growth is located. It is noticeable that only Darwin is outside the rainfall decline zone among capital cities. There is much that can be done in the capital cities to become more efficient in our use of water, but water will become an even more influential location factor in human settlement in Australia than it was in the past and it is one of the elements to consider in regional development strategies.

Table 8.7 The mismatch between water and population

	<i>Far north Australia (%)</i>	<i>Southern Australia (%)</i>
Population	2	82
Potentially arable land	4	65
Annual mean surface run-off	52	27

Source: Nix (1988, p. 72).

Figure 8.10 Trends in annual total rainfall, 1960 to 2009 (mm/10 years)



Data source: CSIRO and Bureau of Meteorology (2010).

Table 8.8 **Australia: rainfall trends and population in 2006**

<i>Rainfall trend 1996-2009</i>	<i>% of population 2006</i>	<i>2006 population</i>	<i>Growth rate</i>	<i>% of land area</i>
Declining	89.6	17 749 462	0.98	38
Stable	7.23	1 432 090	0.70	18
Increasing	3.17	628 865	-1.57	44

One issue that needs to be considered in the regional development discussion is the extent to which growth in regional areas can be more environmentally friendly than growth in large capital cities. Can the concept of ‘green cities’ be more effectively initiated in greenfield regional locations than it can in adding extra growth to capital cities and retrofitting them?

8.6 Conclusion

The argument presented here is *not* that Australia should immediately adopt a major strategy for realigning the national settlement system. It does, however, suggest that

there needs to be a careful investigation that brings together the best multidisciplinary knowledge to answer the following questions:

- To what extent do the new economic and environmental realities of the 21st century render the settlement system that we have inherited from previous generations less than optimal for achieving economic, social and environmental sustainability?
- To what extent can goals of greater environmental sustainability, enhanced economic productivity, greater liveability and social inclusion be enhanced by regional development?
- What are the best strategies to facilitate development outside the capital cities?

This paper is not a plea for decentralisation. Its chief argument is that there needs to be a new consideration of our settlement system in a context in which population is likely to continue growing. Much of the growth will be in the capital cities, but can a significant amount be directed to regional areas? Perhaps decentralisation policies in the past have largely failed because they flew in the face of market forces. Any future regional development policy must not repeat that mistake. If research indicates that there would be gains from decentralisation, we need to identify the elements in the Australian economy and society that are currently encouraging movement into regional areas and develop policies and programs to facilitate and encourage those tendencies.

Any regional development policy would be likely to be concentrated on a few localities with good potential for substantial, environmentally sustainable, job creation. Decentralisation will be largely through urban development, although perhaps there are more opportunities for developing environmentally sustainable ‘green cities’ in regional areas than in the large capital cities.

Is decentralisation the answer? The answer is that we don’t know. However, a policy of regional development based on a sound understanding of the economic and environmental potential of regional areas may be one of the ways Australia can move towards a more sustainable future.

Table 8.9 Appendix: Australian statistical divisions: intrastate and interstate internal migration, 2001 to 2006

Statistical Division	Total				Total population 2001-2006				Net			
	Departures (outs)	Arrivals (ins)	Net migration	Intrastate Departures (outs)	Intrastate Arrivals (ins)	Intrastate migration	Interstate Departures (outs)	Interstate Arrivals (ins)	Interstate migration	Interstate Departures (outs)	Interstate Arrivals (ins)	Net migration
Sydney	243191	122179	-121012	112912	58408	-54504	130279	63771	-66508	130279	63771	-66508
Melbourne	159353	140644	-18709	70755	54759	-15996	88598	85885	-2713	88598	85885	-2713
Brisbane	134353	177103	42750	83048	81415	-1633	51305	95688	44383	51305	95688	44383
Adelaide	71197	61586	-9611	30626	27267	-3359	40571	34319	-6252	40571	34319	-6252
Perth	86423	89685	3262	45753	47446	1693	40670	42239	1569	40670	42239	1569
Greater Hobart	17033	19398	2365	5375	7902	2527	11658	11496	-162	11658	11496	-162
Canberra	42227	41766	-461	34	48	14	42193	41718	-475	42193	41718	-475
Darwin	23067	21068	-1999	1714	3216	1502	21353	17852	-3501	21353	17852	-3501
Gold Coast	51613	80925	29312	30534	29866	-668	21079	51059	29980	21079	51059	29980
Sunshine Coast	33488	54049	20561	24634	29563	4929	8854	24486	15632	8854	24486	15632
Wide Bay-Burnett	33937	49735	15798	26568	32207	5639	7369	17528	10159	7369	17528	10159
South West – WA	23430	34235	10805	18805	28741	9936	4625	5494	869	4625	5494	869
Mid-North Coast	34402	44656	10254	19274	34868	15594	15128	9788	-5340	15128	9788	-5340
Hunter	46571	56227	9656	28266	43422	15156	18305	12805	-5500	18305	12805	-5500
Outer Adelaide	17109	24584	7475	13050	19989	6939	4059	4595	536	4059	4595	536
South Eastern – NSW	27637	34138	6501	12469	17825	5356	15168	16313	1145	15168	16313	1145
Richmond-Tweed	27320	33463	6143	8593	17984	9391	18727	15479	-3248	18727	15479	-3248
Mackay	20638	25784	5146	15908	16443	535	4730	9341	4611	4730	9341	4611
Northern - Qld	27372	32276	4904	17565	19477	1912	9807	12799	2992	9807	12799	2992
Barwon	20929	25594	4665	14348	19769	5421	6581	5825	-756	6581	5825	-756
Loddon	19457	23066	3609	14277	18416	4139	5180	4650	-530	5180	4650	-530
Darling Downs	29960	33136	3176	23098	23056	-42	6862	10080	3218	6862	10080	3218

Table 8.9

(Continued)

(Continued next page)

<i>Statistical Division</i>	<i>Total Departures (outs)</i>	<i>Total Arrivals (ins)</i>	<i>Net migration</i>	<i>Intrastate Departures (outs)</i>	<i>Intrastate Arrivals (ins)</i>	<i>Net Intrastate migration</i>	<i>Interstate Departures (outs)</i>	<i>Interstate Arrivals (ins)</i>	<i>Net Interstate migration</i>
<i>Total population 2001-2006</i>									
Far North	26932	29403	2471	18048	14548	-3500	8884	14855	5971
Central Highlands	16384	18792	2408	12236	15511	3275	4148	3281	-867
West Moreton	13811	15916	2105	11863	12882	1019	1948	3034	1086
Fitzroy	26347	28229	1882	21079	19928	-1151	5268	8301	3033
Gippsland	16992	18564	1572	12462	15165	2703	4530	3399	-1131
Northern – Tas	11789	13325	1536	4160	4095	-65	7629	9230	1601
Goulburn	25207	26683	1476	16591	19276	2685	8616	7407	-1209
Illawarra	38018	38907	889	24127	32156	8029	13891	6751	-7140
East Gippsland	9923	10724	801	6785	7590	805	3138	3134	-4
Yorke and Lower North	6858	7435	577	5593	6233	640	1265	1202	-63
Southern	6290	6821	531	4762	3517	-1245	1528	3304	1776
Ovens-Murray	12913	13378	465	5910	6169	259	7003	7209	206
Mersey-Lyell	10026	10267	241	4041	2824	-1217	5985	7443	1458
Murray	17211	17419	208	4515	5574	1059	12696	11845	-851
Australian Capital Territory – Bal	135	70	-65	48	34	-14	87	36	-51
Western District	10263	9739	-524	6977	6659	-318	3286	3080	-206
Eyre	4490	3842	-648	3364	2803	-561	1126	1039	-87
Lower Great Southern	8624	7888	-736	7543	6800	-743	1081	1088	7
Upper Great Southern	4151	3110	-1041	3918	2894	-1024	233	216	-17
Far West	3401	2314	-1087	1149	1019	-130	2252	1295	-957
Murray Lands	9243	8136	-1107	6704	6112	-592	2539	2024	-515
South East	7579	6253	-1326	4135	3362	-773	3444	2891	-553
Central West - Qld	3547	2153	-1394	3081	1754	-1327	466	399	-67

Table 8.9

(Continued)

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<i>Statistical Division</i>	<i>Total Departures (outs)</i>	<i>Total Arrivals (ins)</i>	<i>Net migration</i>	<i>Intrastate Departures (outs)</i>	<i>Intrastate Arrivals (ins)</i>	<i>Net migration</i>	<i>Interstate Departures (outs)</i>	<i>Interstate Arrivals (ins)</i>	<i>Net Interstate migration</i>
<i>Total population 2001-2006</i>									
Wimmera	6848	5257	-1591	4927	3630	-1297	1921	1627	-294
Kimberley	7305	5495	-1810	4368	3369	-999	2937	2126	-811
Mallee	12076	10186	-1890	6695	5019	-1676	5381	5167	-214
Central	11160	9139	-2021	9296	7485	-1811	1864	1654	-210
Pilbara	13524	11499	-2025	9985	8412	-1573	3539	3087	-452
South West – Qld	6524	4210	-2314	5605	3373	-2232	919	837	-82
Midlands	12727	10388	-2339	11678	9486	-2192	1049	902	-147
Central West - NSW	23574	20824	-2750	16441	17524	1083	7133	3300	-3833
Murrumbidgee	19651	16802	-2849	10401	11190	789	9250	5612	-3638
Northern - NSW	24341	21308	-3033	13796	15540	1744	10545	5768	-4777
Northern – SA	12003	8914	-3089	8276	5982	-2294	3727	2932	-795
North West	9669	6230	-3439	8057	4576	-3481	1612	1654	42
South Eastern - WA	13253	9528	-3725	9772	6485	-3287	3481	2043	-438
Northern Territory - Bal	15658	11215	-4443	3216	1714	-1502	12442	9501	-2941
Northern Western	19405	12899	-6506	13941	10374	-3567	5464	2525	-2939
Total	1688559	1688559			943151		745408	745408	

Sources: ABS 2006 Census, unpublished data.

References

- ABS (Australian Bureau of Statistics) 2010a, *Regional Population Growth, Australia, 2008-09*, cat. no. 3218.0, ABS, Canberra.
- 2010b, *Water Account, Australia 2008-09*, cat. no. 4610.0, ABS, Canberra.
- Asal, H. 2008, 'Les premières mobilisations d'immigrants Arabes au Canada, à travers l'exemple du journal, *The Canadian Arab*, 1945–1948', *Journal of International Migration and Integration*, vol. 9, no. 1, pp. 1–19.
- Blainey, G. 1963, *The Rush that Never Ended: A History of Australian Mining*, Melbourne University Press, Melbourne.
- Borrie, W.D. 1994, *The European Peopling of Australasia: A Demographic History, 1788–1988*, ANU Printing Service, Canberra.
- Browne, A.L., Buckley, A. and Stehlik, D. 2009, *A rapid rural appraisal of the closure of the Ravensthorpe nickel operation: a focus on the social, environmental and economic impacts for Ravensthorpe, Hopetoun and Jerdacuttup, Western Australia*, Research Centre for Stronger Communities, Curtin University of Technology, Western Australia.
- Carter, T., Morrish, M. and Amoyaw, B. 2008, 'Attracting immigrants to smaller urban and rural communities: lessons learned from the Manitoba Provincial Nominee Program', *Journal of International Migration and Integration*, vol. 9, no. 2, pp. 161–83.
- Cities Commission 1974, *Urban and Regional Development: Overseas Experts' Report, 1973*, Occasional paper no. 1, Canberra.
- Collins, J. 2009, *Attraction and retention of new immigrants in regional and rural Australia*, report on PEP leave, Spring semester.
- Commissioner of Environmental Sustainability Victoria, 2008, *State of the Environment Report*.
- Couton, P. and Gaudet, S. 2008, 'Rethinking social participation: the case of immigrants in Canada', *Journal of International Migration and Integration*, vol. 9, no. 1, pp. 21–44.
- CSIRO and Bureau of Meteorology, 2010, *State of the Climate*, Australian Government.
- Daly, M.T. 1973, 'Decentralisation: the New South Wales case', *Geography Bulletin*, vol. 5, no. 1, p. 6.
- Day, P.D. 1972, 'The economic and sociological case for decentralisation', presentation to the Australian and New Zealand Association for the Advancement of Science, 44th Congress, Sydney, August.

-
- Decentralization Advisory Committee. *See* Victoria. Decentralization Advisory Committee.
- Development Council of NSW 1969, *Report of Selective Decentralization*, Sydney, March.
- DIAC (Department of Immigration and Citizenship), no date, *Immigration Update*, various issues, AGPS, Canberra.
- no date, *Population Flows: Immigration Aspects*, various issues, AGPS, Canberra.
- 2010, *Annual report 2009-10*, AGPS, Canberra.
- Essential Economics Pty Ltd 2009, *Implications of Population Growth on Infrastructure and Resources in Regional Cities: Final Report*, prepared for Regional Cities Victoria.
- Fonseca, M.L. 2008, 'New waves of immigration to small towns and rural areas in Portugal', *Population, Space and Place*, vol. 14, no. 6, November-December, pp. 525–36.
- Halfacree, K. 2008, 'To revitalise counterurbanisation research? Recognising an international and fuller picture', *Population, Space and Place*, vol. 14, no. 6, pp. 479–95.
- Hefford, R.K. 1965, 'Decentralization in South Australia: a review', *Australian Geographical Studies*, vol. 3, no. 2, pp. 79–96.
- Hugo, G.J. 2003, 'Changing patterns of population distribution', in Khoo, S-E and McDonald, P. (eds), *The Transformation of Australia's Population: 1970–2030*, University of New South Wales Press, pp. 185–218.
- 2008, Australia's state specific and regional migration scheme: an assessment of its impacts in South Australia, *Journal of International Migration and Integration*, vol. 9, no. 1, pp. 125–45.
- Hugo, G.J. and Harris, K. 2011, *Population Distribution Effects of Migration in Australia*, report for the Department of Immigration and Citizenship.
- Hugo, G.J., Khoo, S. and McDonald, P. 2006, 'Attracting skilled migrants to regional areas: what does it take?', *People and Place*, vol. 14, no. 3, pp. 26–47.
- Hugo, G.J., Vas Dev, S., Wall, J., Young, M., Sharma, V. and Parker, K. 2010, *Economic, Social and Civic Contributions of First and Second Generation Humanitarian Entrants*, revised final report to the Department of Immigration and Citizenship.
- Industries Development Committee. *See* South Australia. Industries Development Committee.

-
- Jackson, N. and Felmingham, B. 2002, 'As the population clock winds down: indicative effects on Australia's States and Territories', *Journal of Population Research*, vol. 19, no. 2, pp. 97–117.
- Jentsch, B. 2007, 'Migrant integration in rural and urban areas of new settlement countries: thematic introduction', *International Journal on Multicultural Societies*, vol. 9, pp. 1–12.
- Kasimis, C. 2008, 'Survival and expansion: migrants in Greek rural regions', *Population, Space and Place*, vol. 14, no. 6, pp. 511–24.
- Lloyd, C.J. and Troy, P.N. 1981, *Innovation and Reaction: The Life and Death of the Federal Department of Urban and Regional Development*, Allen and Unwin, Sydney and Boston.
- Logan, M.I. and Wilmoth, D. 1975, *Australian Initiatives in Urban and Regional Development*, IIASA, Laxenburg.
- Logan, M.I., Maher, C., McKay, J. and Humphreys, J.S. 1975, *Urban and Regional Australia: Analysis and Policy Issues*, Sorrett, Melbourne.
- McMahon, G. and Remy, F. (eds) 2001. *Large Mines and the Community: Socioeconomic and Environmental Effects in Latin America, Canada, and Spain*, International Development Research Centre, Ottawa, and World Bank, Washington DC, www.ldrc.ca/en/ev-9432-201-1-DO_TOPIC.html (accessed January 2007).
- Massey, D.S. (ed.) 2008, *New Faces in New Places: The Changing Geography of American Immigration*, Russell Sage Foundation, New York.
- Morén-Alegret, R. 2008, 'Ruralphilia and urbophobia versus urbophilia and ruralphobia? Lessons from immigrant integration processes in small towns and rural areas in Spain', *Population, Space and Place*, vol. 14, no. 6, pp. 537–52.
- National Housing Supply Council 2010, *2010 State of Supply Report*.
- Neilson, L. 1976, 'Australian policy concerning population distribution and redistribution', in Pryor, R.J. (ed.), *Population Redistribution: Policy Research*, Studies in Migration and Urbanisation, no. 2, Department of Demography, Australian National University.
- Neutze, G.J. 1965, *Economic Policy and the Size of Cities*, Australian National University Press, Canberra.
- Nix, N. 1988, 'Australia's renewable resources', in Day L.H. and Rowland D.T., *How Many More Australians? The Resource and Environmental Conflicts*, Longman, Cheshire, pp. 65–76.
- Price, M. and Benton-Short, L. (eds) 2008, *Migrants to the Metropolis: The Rise of Immigrant Gateway Cities*, Syracuse University Press, New York.

-
- Rogaly, B. 2008, 'Intensification of workplace regimes in British horticulture: the role of migrant workers', *Population, Space and Place*, vol. 14, no. 6, pp. 497–510.
- Roux, A. and Stanley, J. (eds) 2010, *ADC Cities Report: Enhancing Liveability*, ADC Forum.
- Rowland, D.T. 1979, *Internal Migration in Australia*, ABS Canberra.
- SGS Planning and Economics, 2008, submission into Enhancing Victoria's Liveability.
- Simons, P.L. and Lonergan, N.G. 1973, 'The mythical arguments for decentralisation', *Royal Australian Planning Institute Journal*, July, pp. 85–90.
- South Australia. Industries Development Committee 1964, *Decentralization of Industry: Final Report*, South Australia.
- Spoonley, P. and Bedford, R. 2008, 'Responding to regional labour demand: international migration and labour markets in New Zealand's regions', *Journal of International Migration and Integration*, vol. 9, no. 2, pp. 203–24.
- Stretton, H. 1970, *Ideas for Australian Cities*, Hugh Stretton, Adelaide.
- Taylor, T.G. 1922, 'The distribution of future white settlement', *Geographical Review*, vol. 10, no. 12, pp. 375–402.
- Treasury 2010, *Australia to 2050: Future Challenges*, Intergenerational Report 2010, circulated by The Hon Wayne Swan MP, Treasurer of the Commonwealth of Australia.
- Troy, P. (ed.) 2008, *Troubled Waters: Confronting the Water Crisis in Australia's Cities*, ANU E Press.
- Victoria. Decentralization Advisory Committee 1967, *Report on the Selection of Places Outside the Metropolis of Melbourne for Accelerated Development*, Victoria.
- Vipond, J. 1989, 'Australian experiments with regional policies', in Higgins, B. and Zagorski, K. (eds), *Australian Regional Developments*, AGPS, Canberra.
- Whitelaw, J.S. and Maher, C.A. 1988, A tale of few cities: urbanisation in a constrained environment, in: Heathcote, R.L. and Mabbutt, J.A. (eds) *Land Water and People: Geographical Essays in Australian Resource Management*, pp. 125–61, Sydney, Allen and Unwin.

Discussant comments

Larry Cook

Productivity Commission

Graeme Hugo's paper raises a number of interesting issues that are emerging in Australia about new patterns of migration to non-metropolitan areas. He also poses some important questions about regional policy and future directions for regional development and decentralisation.

My comments come under three headings. The first relates to the insights from spatial economics and the new economic geography that are useful in understanding Graeme's findings. The second concerns some general issues in regional policy. The third is, as Graeme asks, whether a new consideration is warranted. Many of my comments touch on some of the same issues that Richard Arnott discussed in his paper on urban economics.

Spatial economics

There is a long history of economic thought from Adam Smith to Johann von Thünen and Alfred Marshall in the nineteenth century to the new economic geography in the past 20 years from Paul Krugman and others that focuses on understanding where economic activities and people are located and why. The observed concentration in some regions and not in others is the result of the interplay of some important forces.

Concentrations result from agglomeration economies, or what are called in the new economic geography, 'centripetal forces'. These include economies of scale, which lower unit costs at larger outputs, as well as reduced transport costs of moving goods and people. So, too, larger and 'thicker' markets that reduce search costs and allow more specialisation are advantageous. Most of these agglomeration benefits are captured by individuals, but others, such as informational spillovers, are externalities in that the benefits accrue to third parties without cost.

At the same time, there are centrifugal forces for deglomeration. Expansion in an area increases the rents to immobile factors of production, most notably land, and thus provides an incentive for the activities that most intensively use those factors to

move to where they are more abundant. Expansion also increases the usage of unpriced public infrastructure and other common resources. The resulting congestion degrades their use and creates a negative externality and an incentive to locate elsewhere.

So Graeme's finding of increasing migration to regional areas is that *net* centripetal forces have been decreasing in Australia. Certainly, lower transportation and communication costs and the Internet have contributed, as have increased land prices and congestion externalities in metropolitan areas.

Regional policy

Regions are not only faced with constantly evolving centripetal and centrifugal forces. They are also faced with other continuously changing market forces, such as changes in consumer tastes, technology and international trading relationships. Dealing with these changes does not require any central planning. Individuals, in deciding what is in their best interest, will respond and the resulting reallocation of resources across regions and industries is generally the most efficient outcome. What is important in facilitating these constant changes is reducing impediments that keep markets from working efficiently.

The effects of constant change on incomes are generally uneven across different regions and industries. Some parts become worse off and others better off. It is here that regional policy's role is often seen in terms of reducing regional income disparities. But not all beneficiaries of regional policy are going to be low income; nor are all those adversely affected going to be high income. If the concern and policy objective is equity and income distribution, then the best and most direct policy to deal with it is through the national income tax and transfer system, not regional policy.

There is also the question of whether there may be efficiency gains from decentralisation and whether regional policy can achieve this. That is, does an expansion in non-metropolitan regions reduce the negative congestion externalities in metropolitan areas by more than it reduces the positive agglomeration externalities? The answer is that we do not know: it may increase welfare but it may decrease it. These externalities — especially the agglomeration externalities — are difficult if not impossible to measure. If the concern and policy objective is to correct urban externalities, then it is best to try deal with them directly, not indirectly through regional policy.

Is a new consideration warranted?

Graeme raises the question of whether it would serve the nation better if a greater proportion of future growth were located in non-metropolitan Australia. It may be that this will occur naturally without policy change, but if policy is going to actively encourage this development beyond where it would naturally occur then that will involve giving assistance in some form to the selected regions.

Should policy try to direct future growth and give special treatment to particular regions? This question is very much the same as the question as to whether policy should assist particular industries. Whether a regional city such as Ballarat should be given assistance to enable it to be larger than it otherwise would be involves the same issues as whether the car industry should be given assistance. A very real problem is in the choice of which regions or industries are to be given special assistance. Beneficiaries — especially region- or industry-specific factors that have most to gain — are a relatively small group who are well aware of the potential gains and will find it in their interest to expend resources to obtain favourable policy outcomes. This rent seeking is most successful when the costs are widely spread (and less recognised) across a larger number of voters and the policy is extolled as being in the public interest. But the important point is that rent seeking is fostered by policymakers not treating all regions equally or all industries equally. Given that rent seeking and the subsequent misallocation of resources is welfare reducing and given that assistance is always difficult to remove, a future policy direction of giving special treatment to any region should be avoided.

One way to assist regional development is with infrastructure. Graeme sees this as ‘the key to shifting the balance of growth from the large cities to regional areas’ and suggests that there is ‘a need to think strategically about where infrastructure investment is targeted’. But the important thing with investment decisions is that they should be subject to a rigorous cost–benefit analysis. Investments with the highest net present value should be chosen, not those located in particular regions. What is a truism for an individual investor — that choosing investments with the highest expected net present value leads to a more prosperous future — is also very relevant for government investment. There are always opportunity costs. Making an investment choice solely on the basis of location means that other, more profitable, investments are forgone.

A further investment principle that is increasingly being recognised is the value of ‘real options’. When the future is uncertain and large irreversible sunk investments are being considered, there can be considerable value in delaying the investment until further information is revealed. By delaying, potentially costly mistakes can be avoided. This is especially important for infrastructure decisions. As Graeme has

highlighted, there are forces that are changing the geographical distribution of the population. But we don't know precisely where people are going to be. We cannot, with any degree of accuracy, look that far in the future. We certainly do not want to be building infrastructure in the speculative hope that people will come and use it. A much better approach with infrastructure decisions would be to be prepared, but not necessarily commit until things become much clearer as to exactly how things will play out.

9 Environmental and resource constraints: myth or reality?

Don Henry

Australian Conservation Foundation

The Australian Bureau of Statistics does a fine job with the *Measures of Australia's Progress* dashboard (ABS 2010), which looks at key economic, social and environmental indicators that it views as important to our nation's wellbeing. The latest iteration reveals that biodiversity has continued to decline in Australia over the past 10 years.

The headline indicators of land condition are poorly developed for Australia. However, supplementary indicators such as land clearance show that we continue to lose, in gross area, our areas of forest and woodlands, and we continue to see an increase in soil degradation factors, such as salinity.

Australians have reduced their per-person water consumption. One could argue that the drought had a sobering effect on our thinking about the use of water and perhaps bedded into the Australian ethos that this is a limited resource, more so than before. However, in southern Australia we are still seeing continued degradation over time in the quality, quantity and health of river ecosystems.

If we look at our oceans and estuaries, our proportion of fish stocks that are overfished has increased in the past 10 years from 10 per cent to 18 per cent. There was a peak of 29 per cent overfishing in 2005. On the other hand, our areas of marine parks — our protected areas in Australia's waters — increased by 58 per cent over that period.

Greenhouse emissions have increased by 16 per cent in the decade to 2008. Waste, in Australia, has doubled in volume over the past 10 years and has also doubled per person during that time.

These are some big snapshots. The measures are not as clear and well bedded as they should be, but many of the trends are down, and that coincides with what we have consistently seen from 'state of the environment' reports in Australia at the federal and state levels over the past 20 years.

There are some indicators or measures that are showing improvement. Usually these are policy instruments that are aimed at affecting the overall measure, but haven't yet reached the scale or effectiveness required to turn around deterioration. For instance, there has been an increase in marine-protected areas, but a decrease in the overall indicator (in this case, fish stocks).

The term 'ecological footprint' has come into use over the past 10 years. It is a summary measure of impacts on the environment measured against the carrying capacity of the planet. This is an attempt to assess how we are travelling with the capacity of Australia and the globe to deliver what we gain from healthy ecosystems — food, clean air, clean water — and their constraints.

The Victorian Environment Protection Authority (EPA) estimated in 2008 that Australia's ecological footprint was the equivalent of 7.8 global hectares per person, whereas the planet can regenerate 2.1 global hectares per person on an annual basis. On this measure, our footprint per person in Australia is much heavier than a global estimate of what the constraint is from our ecological systems. It is 2.8 times the average global footprint, and well beyond the level the planet can regenerate in a year. The EPA noted that, in the formulas it used, half of that impact was from carbon dioxide emissions in Australia. We have a very heavy carbon dioxide emissions footprint per person.

These are not just environmental issues — they have real and abiding, and increasing, social impact. For instance, the impact of more extreme weather events, where they fit probabilities from climate change or where they may increase over time, is very real. The economic impacts are very real. For instance, the degradation of the Murray–Darling Basin has very real economic impacts for the nation, and for regional communities and regional towns.

In 2008, Graham Turner of the CSIRO looked at 'Limits to Growth'. That was the 1972 Club of Rome publication that many saw as 'doomsday', as ringing a bell that there were very severe limits to growth. It was criticised at the time as being unrealistic. Turner went back and matched 30 years of historical data against the business-as-usual scenario in the 1972 study.

His analysis showed that 30 years of historical data matched with key features of a business-as-usual scenario called the 'standard run' scenario, which results in collapse of the global system midway through the 21st century (Turner 2008)

This is a controversial but thoughtful analysis that speaks bluntly of the limits to growth. There are real biophysical and physical constraints on our species.

A well-informed conversation needs to recognise that this is not just a debate about population numbers. It is a debate about population numbers, consumption rates and technologies used in consumption — the three factors that, at the end of the day, are our impact on the environment.

One other point: what people value changes constraints or perceived constraints over time. A former oil minister from Saudi Arabia, over a decade ago, observed that the Stone Age didn't end because of a shortage of stones! There are real debates about peak oil. I think they partly miss the point. I would argue that we are either at or past peak pollution of our atmosphere right now. At the recent UNFCCC Cancun climate negotiations, in December 2010, governments of the world agreed that we need to keep global warming below an average warming of two degrees. This included China and the United States, as well as Australia. That equates to something in the order of keeping CO₂ equivalents in the atmosphere below 450 parts per million. We are knocking on that door now, reaching about 380 straight CO₂ ppm, and very close to 450 ppm CO₂ equivalent.

At the Cancun meeting, governments also acknowledged there needs to be a review of that target in four years' time, and the review would need to look at the proposition that we should keep warming below 1.5 degrees Celsius because there are many severe impacts that kick in even just below 2 degrees. (For example, the future of a healthy Great Barrier Reef is highly problematic under the 2 degree warming scenario.) We are past that point right now, past that constraint that would permit holding warming to 1.5 degrees.

To summarise, our values change over time, and we make decisions, involving constraints, on values that are important. There may be no better example of that at the moment than climate decision-making at national and international levels.

What can we do about this in the context of a policy discussion on sustainable population? Population is important, but consumption and technology are, too. Should we be looking at national sustainability indicators or, further, should we be ensuring that our national accounts fully incorporate environment and social measures? Should we be looking for improved tools of analysis and decision-making to enable us to understand these constraints and make decisions informed by them?

A number of countries use sustainability impact assessments, which bring together economic, social and environmental analysis. Common tools used now include better internalisation of environmental and social costs. These tools or methods are coming into use by mainstream treasury agencies. The United Kingdom is a good leader in this area, with quite progressive cost–benefit analysis tools that bring to

bear social and environmental factors very clearly. We are examining these issues here in Australia, and some progress has been made in Treasury and other agencies.

How do we invest in sustainability infrastructure? We do not repair a degraded Murray–Darling river system by leaving it to itself. Most discussion of infrastructure focuses on concrete and bitumen. However, there is also the infrastructure of healthy ecosystems. We have to start thinking about the ‘wet and green stuff’. Having enough water in the Murray–Darling river system, it could be argued, is investing in sustainability infrastructure that has benefits for the environment, for communities and for the economy.

We can significantly reduce the environmental impact that we have on this continent. There are some encouraging trends. The dramatic reductions in per-person water use in Australia are one example. But, in the view of the Australian Conservation Foundation, that is not enough. We also have to speak about numbers, and the Foundation’s view is that we should be stabilising Australia’s population by 2050. This does imply growth over the next 20 years; it does maintain modest immigration rates, but not excessive ones. The issue of numbers is there: it needs to be on the table, but it needs to sit on the table beside consumption and beside technology.

References

- ABS (Australian Bureau of Statistics) 2010, *Measures of Australia’s Progress, 2010*, cat. no. 1370.0, Canberra, September.
- Turner, G. 2008, ‘A comparison of the limits to growth with thirty years of reality’, *Socio-Economics and Environment in Discussion*, CSIRO Working paper series, Canberra, June, www.csiro.au/files/files/plje.pdf (accessed 5 May 2011).

Discussant comments

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Most of Australia's current population growth derives from its net positive migration intake. This intake has proven controversial from the viewpoint of a number of environmental concerns — a major one being the adequacy of water supplies, but there are also concerns with worsening traffic congestion in cities and with increasing costs of providing infrastructure on city boundaries. At the same time, business groups, and particularly the housing industry, clamour for higher migration to boost demand and to grow the economy (Clarke et al. 1990).

These alternative views comprise two alternative extreme ways of looking at the relation between population size and the environment that have considerable antiquity. In essence, each takes an alternative view on the role of fixed natural resource and environmental assets. The first dates at least to the Reverend Thomas Malthus's *An Essay on the Principle of Population* and sees environmental resources — Malthus took specifically agricultural land — as a fixed asset that is exploited under conditions of common property (Malthus 1798). With population increase, existing cultivated land must be more finely divided among the progeny who come to cultivate it. In the absence of technical progress, this division reduces the productivity of labour on existing land and forces some cultivation onto land with lower agricultural productivity. Both at the intensive and the extensive margin, the result is lower labour productivity and lower incomes. While Malthus focused on land, his views apply to any common property resource subject to congestion externalities — fish populations, forests, water and biodiversity resources, congested roads, or the right to pollute the atmosphere with, for example, CO₂.

Environmental resources can, alternatively, be viewed as assets that are private property subject to clear property rights. With this extreme view, an increased demand for the use of resources by new people increases their value to the pre-existing people who own them. This 'market-broadening' viewpoint sees the arrival of new people as increasing the value of assets held by the original people, making them better off. Provided the new people creating these enhanced values judge their

¹ Without implication, I thank David Prentice and Judith Sloan as well as Roundtable participants for their comments.

lives as worth living in the expanded society, the arrival of the extra people provides an improvement in social welfare in terms of the standard Kaldor–Hicks criterion used in cost–benefit analysis. This is related to Adam Smith’s views, in the early chapters of *The Wealth of Nations*, on the ‘gains-from-trade’ that can be achieved by increasing the extent of markets (Smith 1904). Although Smith did not expressly address the population issue, he saw market broadening as a source of economic gains. Indeed, from this perspective, having access to extra people is precisely analogous to removing a barrier to international trade, such as a tariff. Smith was mainly thinking, too, about trade in goods, but his analysis applies today to the owners of land and mineral assets, of rights to drive on private roads or, with privately owned emissions quotas, the right to pollute the atmosphere with CO₂.

The Malthusian or common property view of the population–environment link clearly suggests restricting population size, whereas the private property view suggests that such restrictions will reduce the welfare of both pre-existing and new people.

These alternative views of the connection between the environment and population clearly depend on the primary way new people gain their economic role in a society. Both of the extreme views cited are strikingly unrealistic. The common property perspective implicitly describes an idealised communist state in which new arrivals gain a share of all environmental assets as a birth or arrival right. It might make most sense, if it makes sense at all, where land is the important environmental asset that must be shared among progeny in populations experiencing net growth. The private property view, on the other hand, sees unambiguous property rights as potentially at least being imposed on *all* environmental assets — land, minerals, water, roads, the atmosphere and the right to pollute — in a type of libertarian nirvana. New people must then buy — or be granted on the basis of a voluntary bequest — claims on environmental assets at prices that make acquisitions mutually advantageous to extra people in the population acting as buyers and the pre-existing asset owners.

For a host of reasons, neither of these extreme views is realistic. The Malthusian view ignored the possibility of technical progress that has increased the productivity of agricultural land dramatically in the face of enormous population increases since the Industrial Revolution. It also downplays the economic drivers of fertility that will mitigate its pessimistic implications. In the face of declining incomes, parents will plausibly choose to have fewer children. Gains-from-trade arguments, on the other hand, suppose that all environmental externalities can be internalised by pricing or other policies when, clearly, they are not able to be. Indeed, such failures provide the rationale for modern environmental economics. The gains-from-trade view does, however, admit foresight as a determinant of migration-driven

population increase as well as natural fertility. Parents facing reduced returns from raising children — or migrants facing higher costs of getting established in a new society — face reduced incentives to add to or join a society. Rising environmental costs provide endogenous disincentives to add to population.

The key institutional feature of modern economies relevant here, however, is that they are mixed — a mix of both privately owned assets, including environmental assets, and common property or public goods. For the most part we have to buy land from landowners to grow crops or to build houses on, but for many assets that we utilise usage rights are unpurchased — travel on roads is for the most part unpriced, as is (for the most part) the release of greenhouse gas emissions and many other pollutants. Resources such as water have property rights enforced on them but they are often underpriced, and there are restrictions on the extent to which water can be traded among alternative types of users — for example, between urban and rural users. Native biodiversity resources are often not marketed at all — indeed, it is typically illegal in Australia to do so — for what are often seen to be ethical reasons.

I mention unpriced or underpriced resource assets and services, but the same argument applies to the provision of a wide variety of publicly provided goods. The social security system generally, and specifically education and health services, are typically publicly provided. Those services can, in principle, be provided either publicly or privately — they are not inevitably ‘public goods’ in the strict economic sense — and the implications for desired population size depend on this choice. The more unpriced environmental assets and the more public goods there are, the greater is the potential for increased population to damage the welfare of the pre-existing population and to be immiserising because new arrivals then do not pay for these costly entitlements. In addition, if education and health services are unpriced, the more susceptible the migration intake becomes to adverse selection and moral hazard problems and the greater the need for screening and other restrictions.

Recognising this mix suggests a way of making judgments about the desired size of population relative to the environment. Having extra people — whether they are migrants or the progeny of existing people — provides gains-from-trade between them and pre-existing people, provided there are clear property rights on environmental and other resources that are in short supply. To the extent that environmental resources or publicly provided goods are inadequately priced, those gains are replaced by the deadweight losses that are inflicted by newcomers via environmental and other externalities.

This suggests that restrictions on population become *increasingly less important* the more comprehensively use of the environment (and indeed the provision of social,

health and other services) can be priced. This means new people, whether they are children of current people or new migrants, must buy their way into a society on terms acceptable to current people.

The extent to which common property external costs offset the gains from trade is an empirical issue, although models that exclude most explicit external costs (compare Productivity Commission 2006) *should* show positive gains to pre-existing residents from an increase in, for example, skilled migration, as pointed out by Clarke (2007). The models of ‘optimal population’ determination that were developed in a total utilitarian context by Dasgupta (1969) and in an average utilitarian context by Pitchford (1974) assign as a birthright an equal share of a society’s capital to new arrivals. These computations for determining optimal population are misconceived because a common property externality they that impose by assumption infects their analyses even before the computations commence (Clarke and Ng 1993).

For the most part, if environmental pricing is to be pursued it should be direct. Roads, for example, need to be privately owned by current people and their services then sold to newcomers. Even though it is clear that current people are worse off as consumers when using roads for which congestion tolls are increased as the result of population growth, it is straightforward to establish that the gains they enjoy as vendors outweigh such costs (Clarke and Ng 1995). Gains-from-trade arguments triumph! Of course, this pricing requirement is stringent and, under current circumstances, impractical. For immigrants an alternative is to extract from them, at the point of entry, a fee that covers the present value of the extra costs that the new arrivals inflict (Clarke 1994). The resources should still be priced but, if they are publicly owned, then extra costs incurred by pre-existing people are compensated for by transfers of entry fees to them.

These pricing arguments are not driven by population increase. Environmental economics shows that an established society benefits from pricing such resources with or without population increase, so that pursuing such policies is a type of ‘no regrets’ option. Moreover, in the presence of the option to increase population, the opportunity cost of not pricing increases because increased externalities will eventuate unless pricing is employed. If the choice is instead to leave the environment unpriced but to restrict population, then society must forgo the gains from trade that would have been associated with the population increase unless it can access those gains alternatively through trade in goods or factors of production. These latter possibilities are discussed below. We are better off pricing the environment properly because gains arise from doing that directly, but also because we can then better enjoy the gains from a possibly larger population via enhanced gains from trade.

The case for privatising the assets in the hands of current people is, however, driven by the fact of population increase. Efficiently pricing the environment at social marginal cost but leaving resources in public hands works well if population is fixed, but falls short of guaranteeing net gains to pre-existing populations when population itself is increasing. In that case, prices will rise when environmental demands grow but — in the absence of discriminatory and unrealistic sharing rules — the income gains to the public sector from such increased demands will be shared by the new and original residents of a society. There is no guarantee, then, that the costs to original people will be more than offset by income gains from the public purse.

This need for pricing and microeconomic reforms suggests a refocusing of the debate on the size of Australia's population away from speculation about long-run population targeting — which are often irrelevant anyway, given large year-to-year variations in the immigration intake — to thinking about the sorts of environmental (and other) policies that should be put into place to help ensure that current citizens get benefits from the environment and to ensure that future population increases will not immiserise us (Clarke 2003).

It is important to emphasise that environmental pricing reforms do not mean that population will increase without limit or increase to what are very large levels. It means only that the case for restricting population growth becomes less reasonable. Efficiency in commodity and asset markets helps to maintain efficiency in procreative investments and the migration intake. Families might choose to have fewer children, and the sorts of migrants Australia seeks to encourage will choose not to come here if extra costs, reflecting the extra environmental damages new people impose and extra infrastructure costs incurred in getting established, are large enough.

It is also important to understand that there are also alternative ways of securing at least some of the gains from trade from having the possibility of trading with extra people without having more immigrants. The famous Heckscher–Ohlin theorem of trade shows that trade can act as a substitute for factor movements, such as labour migrations, and that capital exports can, to some extent, act as a substitute for both trade and labour imports. Specifically, in Australia's case, importing labour-intensive goods can substitute for importing labour, and exporting capital to labour-wealthy destinations can substitute for trade and/or migration. These are not merely theoretical possibilities but important features of the modern globalised trading world. In some cases, relying on trade or capital exports can avoid the difficult issue of pricing such things as congestion and pollution by shifting these problems to other parts of the world.

Finally, it is important to stress that these notes address the connection between environmental issues and population size alone. Skill externalities in labour markets can, for example, justify a positive migration intake provided the external costs associated with unpriced environmental externalities are large enough.

Many straightforward environmental pricing policies have already been implemented in Australia and, compared to many other countries, the quality of the Australian environment is very good. I do not agree with Don Henry that Australia's track record has been that bad. The important pricing issues that do remain either involve complex distributional or transaction cost issues (congestion pricing road travel in major cities, pricing infrastructure on city boundaries), or involve complex social-political issues of assigning values to non-marketed goods, such as biodiversity and the environmental uses of water. Unfortunately, these are all population-sensitive environmental concerns.

Comprehensive pricing of the environment is difficult. Environmental valuation issues raise fundamental questions about the usefulness of efficiency-based welfare economics in resolving issues of optimal population on standard utilitarian terms. Assigning values to biodiversity, to wilderness or to the desire for space and partially developed landscapes involves assessing intensely subjective issues that reflect underlying ethical uncertainties, such as the valuations that should be placed on non-human life and the value of solitude. Economic analysis only brings into focus a range of insights into how large our population should be from an environmental perspective.

Don Henry's remarks deal with 'planning' approaches to dealing with environmental concerns, rather than market mechanisms. There is a parallel set of arguments that correspond to those I have developed above for using planning rather than market-based reforms when addressing the issue of population growth. They might make practical sense in situations where social valuations are unclear, where there are coordination problems or myriad second-best issues, and where achieving clarity about objectives is a problem, but many key environmental concerns that arise when population increases can be best dealt with using market mechanisms. Infrastructure levies, for example, effectively limit the growth of unwarranted urban sprawl. Correctly pricing traffic congestion reduces both low-value vehicle journeys in cities and the propensity of cities to sprawl unnecessarily because transport is underpriced. Don Henry mentions the reduction in water use that has been driven in our cities by water supply restrictions during the recent drought, but as a long-term measure the correct pricing of urban water supplies will achieve the same sorts of objectives at much lower cost.

Economics does not provide all the answers but it provides some. The key lesson of economics is that what matters most is not population size in relation to the environment per se, but what people who live in Australia can do to the environment. History shows, for example, that much of the worst environmental damages inflicted on Australia's agricultural land occurred when Australia had a much smaller population than it now has. It is difficult to provide a logical calculus that suggests how many people should live in Australia and, indeed, that might be the wrong way of looking at things. It is much easier to set in place environmental policies that ensure extra people provide advantage rather than disadvantage to current residents. This is closed-loop rather than open-loop planning that offers greater simplicity. If Australian environments do become poor, that is not a consequence of excessive immigration or natural population growth but partly, at least, because of market failures in the provision of environmental and public services.

Of course, there are a host of social arguments on the immigration issue that have been ignored here, mainly because they are beyond my competence. Even if the environment is comprehensively priced, there are plausible non-economic reasons for restricting population growth.

References

- Clarke, H. 1994, 'Entry charges on immigrants', *International Migration Review*, vol. 28, no. 4, pp. 338–54.
- 2003, 'Should Australia target its population size?', *Economic Papers*, vol. 22, no. 1, pp. 24–35.
- 2007, 'Comment on James Giesecke: The Economic Impact of a General Increase in Skilled Migration', *People and Place*, vol. 15, no. 2, pp. 12–14.
- , Chisholm, A.H., Edwards, G.W. and Kennedy, J.O.S 1990, *Immigration, Population Growth and the Environment*, Bureau of Immigration Research, Melbourne.
- and Ng, Y.-K. 1993, 'Immigration and economic welfare: resource and environmental aspects', *The Economic Record*, vol. 69, pp. 259–73.
- , ——— 1995, 'Population growth and the benefits from optimally-priced externalities', *Australian Economic Papers*, June, pp. 113–19.
- Dasgupta, P. 1969, 'On the concept of optimal population', *Review of Economic Studies*, vol. 36, pp. 295–318.
- Malthus, T. 1798, *An Essay on the Principle of Population*, 1st ed., J. Johnson, in St. Paul's Church-yard, London.

-
- Pitchford, J. 1974, *Population in Economic Growth*, North-Holland, Amsterdam.
- Productivity Commission 2006, *Economic Impacts of Immigration and Population Growth*, Productivity Commission, Canberra.
- Smith, A. 1904, *An inquiry into the Nature and Causes of the Wealth of Nations*, 5th ed., Cannan, E. (ed.), Methuen and Co., Ltd., London.

General discussion

Discussion began with one participant suggesting to Professor Arnott that the urban planning system might be improved by giving planners incentives to attract population to their local areas. In countries like Germany and Switzerland, this participant remarked, urban planners share responsibility for local government budgets and, therefore, face incentives to increase revenues by attracting additional residents. Planners then tend to support development and population growth, in contrast to planners in countries with a ‘British-style’ approach to planning.

Professor Arnott was then asked about the implications of positive agglomeration economies for the design of a congestion pricing system. He responded that in a very simple model, the presence of unpriced positive externalities from increased urban density means that the optimal congestion price is approximately zero, because agglomeration economies encourage individuals to begin work at the same time, whereas a price on congestion would encourage dispersed start times— and therefore, the effects counteract each other. However, Professor Arnott noted, he was more cautious about interpreting the implications of unpriced agglomeration externalities for optimal urban spatial structure where there are complicating factors such as multiple sub-centres of different sizes and agglomeration economies existing at different levels.

Another participant expressed the view that policymakers at the national level have neglected to consult with state governments to ensure increases in the immigration intake are supported by appropriate policies for higher-density residential development in Australian cities. The participant argued that the availability of affordable, higher-density housing in inner-city suburbs, along transport corridors and in sub-centres is crucial to ensure the supply of workers providing essential services (such as health and education) to these areas. Professor Arnott agreed that consultation between national governments (which determine immigration policy) and state or city-level governments would be ‘nice’ and suggested that such consultation might be more feasible in a small country than in a large one such as the United States.

The three panellists were asked for their views on:

- the implications of increased female labour force participation for the distribution of jobs and household commuting patterns and

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- the potential benefits of ‘mixed-income suburbs’ for increasing job opportunities for people with low skills, and whether policymakers could ‘encourage’ reduced spatial segregation by income.

In response to the first issue, Professor O’Connor mentioned that his previous research had found that women, on average, work closer to home and so are more highly represented in suburban jobs. Professor Daley commented that it is also interesting to consider single-person households, which he said are the fastest-growing household type but not the fastest-growing in terms of housing development.

On the second issue, Professor Daley argued that governments could best encourage a greater spatial distribution of low-income individuals across a city by funding low-income housing development, particularly in higher-income areas. He also suggested that governments might impose targets for low-income housing within residential areas and allocating responsibility to local residents or their representatives to achieve these targets. Professor Arnott observed that this might be easier to achieve in Australia (where, he assumed, state governments could overrule local government laws) than in the United States, where in many states the state government cannot overrule local zoning boards.

In response to Professor Hugo’s discussion of the need for infrastructure in non-metropolitan areas, one participant commented that far from a deficiency of infrastructure in these regions, there tends to be substantial oversupply and over-investment. Referring to examples including road networks, electricity transmission and distribution and telecommunications, it was argued that there has been both over-investment and ‘extensive cross-subsidies’ for non-metropolitan areas in recent decades. Professor Hugo responded that he did not say there was too little investment in infrastructure in regional areas generally. Rather, he argued that any attempt by government to facilitate development in non-metropolitan areas would involve some infrastructure investment, and cited social services such as health and education as areas where perceived inadequacy represented a ‘major constraint’ on individuals’ willingness to move to, or stay in, non-metropolitan areas.

Another participant commented that the proportion of overseas migrants settling in non-metropolitan areas has approximately doubled in the last decade, as a result of government policy — specifically, concessional visas that make it easier for migrants to enter Australia if they settle in regional areas. The participant argued that these visas ‘necessarily’ reduce immigrant quality and so there is a cost associated with trying to influence migrants’ settlement patterns through immigration policy. Professor Hugo added that the immigration data reveal a small

increase in the proportion of migrants settling in non-metropolitan areas, which is probably not solely a result of regional concessional visas.

One participant expressed the view that decentralising economic activity within major capital cities such as Sydney and Melbourne would be a more effective approach than moving the same activities or jobs to regional areas. The participant also noted that the mining industry was a means of achieving decentralisation ‘without any cost to government’, but that opposition to some mining development has been arising from competing land users such as farmers.

Another participant suggested that the key demographic groups moving to non-metropolitan areas are retirees and young families, both seeking affordable housing. As a consequence, it was argued, removing restrictions on development in capital cities, if it reduced the cost of housing, might also reduce the extent of migration to regional areas.

One participant observed that growth in regional areas was occurring mainly in regional cities within 100 kilometres of a capital city, or ‘capital city fringes’, with such cities growing at 2.6 per cent compared with 1.5 per cent for ‘inland cities’. This participant suggested that attempts to encourage regional development far from capital cities would probably be unsuccessful, and that infrastructure provision is likely to lag in capital city fringes in contrast to the over-provision observed in inland regional areas.

Professor Clarke commented on the Commission’s 2006 research report on the *Economic impacts of migration and population growth*. He argued that the conclusion from the modelling that the incumbents would be made worse off with an increase in skilled migration was inconsistent with the ‘gains from trade’ that might be expected from migration. In response, it was argued that while the report did show small effects of migration on per capita income — which tended to accrue to the migrants themselves — these results excluded other factors that would also affect the economic wellbeing of incumbents.

Mr Henry was asked whether the rates of deterioration or depreciation of environmental and natural resources was affected by factors largely unrelated to population growth, such as agricultural production for export markets. He agreed with this suggestion, saying that environmental impacts were the result of population numbers, volume of consumption, and technology, and that in some cases (such as water use in rural areas), a lot of resource use is as an input in export production.

Another participant expressed concern about how environmental externalities could be priced correctly and how long it might take to get the prices right. Mr Henry

responded that the technologies and strategies (such as putting a price on carbon) are already there, and that what is required is the political and public will to implement the necessary solutions.

The discussion concluded with one participant raising the question of the moral rights of migrants, and whether new entrants to a country should have to ‘buy the right’ to join the community, or whether it should be assumed that they receive a share in some or all of the common assets when they arrive. Should population and migration policy consider only the welfare of incumbent residents, or everyone who could potentially exist? Professor Clarke commented that in large part, migrants do buy their way in, by working to earn income and purchasing consumption and investment goods for themselves. They do share in some common resources, such as environmental assets, he noted, and these tend to cause difficulty as they are the goods that are not priced. Professor Clarke highlighted what he saw as a problem with studies of optimal population more generally, in that they inevitably arrive at the conclusion that there are limits to population growth because the models assume that new arrivals are all given a share in common resources; this assumption ‘infect[s] the whole analysis with a common property externality from the word go’.

SOCIAL IMPACTS OF MIGRATION

10 Immigration and public opinion

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The issue of a sustainable population for Australia is in part one that relates to the social impact of immigration. What level of population increase can be accommodated with minimal impact on social cohesion? Are there indicators that point to a level at which immigration would cause significant threat to social cohesion?

10.1 Lack of systematic research in Australia

These questions are not amenable to simple and unambiguous answers — but they are made particularly difficult to explore in the Australian context as a result of the limited availability of quality survey data. There is much polling for the media, but relatively little serious social science surveying on population issues. We are not even close to a comprehensive understanding of the outlook and experiences of recent immigrant cohorts, or of the dynamics of population interaction in areas of high immigrant concentration.

Researchers at the Australian National University (ANU) conduct the Australian Survey of Social Attitudes (AuSSA), which is presented as ‘Australia’s major academic social survey’. AuSSA has been conducted every two years since 2003 and contributes to the International Social Survey Program and the World Values Survey. It is a mailed, self-administered survey that achieves some 4000 completions. In recent years it has been partly funded by the selling of space — that is, outside interests are given the opportunity to pay for the inclusion of questions. In the 2009 survey, the only questions bearing on population issues were paid for by researchers external to the ANU, and the chosen wording was contentious (a point discussed below). The commercialisation of this leading survey threatens its integrity and points to research funding issues in Australia. This observation is not, however, to question the significance of AuSSA and of important analyses of

population issues that have been produced using its data, notably the analysis of the 2003 survey by Murray Goot and Ian Watson (2005).

A significant recent development is the initiative of the Scanlon Foundation to establish an ongoing social cohesion research and action program, which has so far yielded three national polls (2007, 2009 and 2010) and two surveys (2007 and 2009) within Melbourne and Sydney local government areas. These substantial surveys, employing 62 questions in 2009 and 74 questions in 2010, with a combined total of more than 9000 respondents, provide scope for detailed analysis of trends in opinion on population issues (Markus and Dharmalingam 2008; Markus and Arnup 2010; Markus 2010a).

Australia, however, lacks surveys to match the reach and longevity of leading overseas research. The British Social Attitudes survey is the primary social research survey in Britain. It has been administered annually since 1983 to monitor and interpret the British public's changing attitudes towards social, economic, political and moral issues. It uses a comprehensive questionnaire, reaches a sample of 3000 respondents, and is administered by trained interviewers. New questions are added each year to reflect current issues. Its coverage has included a broad range of questions on race relations and immigration, and specialist reports have been prepared using British Social Attitudes survey data, including 'Trends in racial prejudice' (Rothon and Heath 2003) and 'Understanding the rising tide of anti-immigration sentiment' (McLaren and Johnson 2004).

In addition, wide-ranging citizenship surveys in Britain have been conducted biennially since 2001 and on an ongoing basis since 2007. The first three citizenship surveys were each administered to some 15 000 respondents in face-to-face interviews taking approximately 60 minutes to complete. The surveys reached a representative core sample of almost 10 000 respondents aged 16 and above, with a minority ethnic boost of 5000 and scope for additional surveying in key areas (ESDS 2011).

The Canadian Department of Citizenship and Immigration has for more than 20 years undertaken annual surveys to track attitudes to immigration. The Ethnic Diversity Survey, conducted in 2002 by Statistics Canada in conjunction with other departments, set a benchmark with the interviewing of 42 500 respondents, utilising a rigorous sample based on the 2001 Census (Statistics Canada 2011). Within the European Union, major surveys include the annual Eurobarometer, established in 1973, with a minimum of 1000 respondents in each member state, and the biennial European Social Survey, which reaches more than 30 000 respondents. Data relevant to population issues is analysed by various European agencies, including

the European Monitoring Centre on Racism and Xenophobia, established in 1997 (European Commission Public Opinion 2011; European Social Survey 2011).

10.2 Media coverage of polls

Australia lacks a culture in which social science research is valued as an important public resource. In public discussion, Australians are much more likely to ridicule government funding of research than to welcome authoritative national polling. Public opinion research is a field (and there are many others) in which there is no critical mass of researchers; nor is there a research culture in which work is constantly held up to scrutiny. Opinion polls become the plaything of the media; reporters are simply required to generate provocative headlines; there is no requirement that they have capacity to interpret survey findings.

Three recent examples illustrate the Australian context. Associate Professor Katharine Betts (Swinburne) and Dr Bob Birrell (Monash), both of the Monash Centre for Population and Urban Research, provided funding for the inclusion of one key and three subsidiary questions in the 2009 AuSSA survey. They presented respondents with the statement ‘In 2008-09 immigration to Australia was higher than in any other year’ and then asked in blunt terms, ‘Do you think Australia needs more people?’ Only two response options were provided, yes or no, with no middle ground.

This was a strange way to conduct academic research: surveys usually serve the function of measuring attitudes held by respondents, not the response that can be elicited by a contentious statement.¹ In response to this statement and question, Betts reported that 69 per cent (subsequently revised to 72 per cent) of respondents indicated that they did not believe that Australia needed more people. Those findings were then released by the Swinburne University Media Centre under the headline ‘Voters against population growth’ and won two rounds of uncritical media attention (Curtin 2010; Lazzaro 2010; SUMC 2010; see also Betts 2010a and 2010b). Interestingly, when exactly the same question was asked in June 2010 in an ANU Poll, but without the contentious preamble, a markedly lower 52 per cent were of view that Australia did not need more people (McAllister 2010).

¹ The level of immigration needs to be considered in the context of population size; two million immigrants arriving in China would have markedly less impact than the same number arriving in Australia; when immigration is considered on a per capita basis, the level of immigration in 2008-2009 was far lower than, for example, many years in the 1950s and 1960s – as its peak in those years the migration program size as a percentage of Australia’s population was closed to 1.4 per cent, in 2009 it was close to 0.8 per cent.

In June 2010, in the context of much negative reporting of ‘boat people’, the Australian Red Cross apparently decided that it would affect public debate with its own survey. It included just seven questions, several of a hypothetical nature and of a character designed to maximise positive responses: ‘If you and your family lived in a conflict zone and were under threat, would you seek to flee to a safe country?’, ‘Would you use all the money and assets you have to get to a safe country?’, ‘How much do you agree or disagree that people fleeing persecution should be able to seek protection in another country?’, ‘How willing would you be to assist a refugee in your community to settle in Australia?’. It also asked ‘Do you believe asylum seekers who have arrived by boat are acting illegally?’

The Red Cross release of findings was headlined ‘Australians show sympathy with refugees’. It was reported that a large majority of Australians (86 per cent) would flee to a safe country if they lived in a conflict zone; would use all of their money to get to a safe country; agreed that people fleeing persecution should be able to seek protection in another country; and were willing to assist a refugee. But its media release omitted the question of most immediate political bearing — public views on the legality of asylum seekers arriving by boat. Rather than precise results, as presented for all other questions, there was a brief reference in the organisation’s press release to a ‘lack of public understanding about the law concerning refugees’. The omission passed without media notice (Australian Red Cross 2010; SBS World News 2010).

A last example concerns the Challenging Racism project. This project, led by Professor Kevin Dunn of the University of Western Sydney, conducted surveys in 2001 and 2006 to 2008 with funding from the Australian Research Council, a number of human rights and equal opportunity commissions and VicHealth. Some 12 500 respondents completed surveys, and the results were presented as the largest project of its kind undertaken in Australia. The project received extensive coverage in February 2011, most of it focused on negative findings (ABC News 2011; Barry 2011; Challenging Racism; Griffin 2011; compare Johnston 2011).

Although little noted in the media, at least some findings were open to serious question. The project simply added data from surveys conducted at different points in time. It presented data for regions (in some cases with fewer than 100 respondents and, in the case of the Eyre statistical division, comprising 11 local government areas, with 19 respondents) in tables headed ‘Racist attitude indicators’. The tables included findings on the level of negative sentiment towards specific groups: nearly half of Australians (49 per cent) were indicated to be ‘anti-Muslim’, nearly a quarter ‘anti-Indigenous’ (28 per cent), ‘anti-Asian’ (24 per cent) and ‘anti-Semitic’ (23 per cent).

What was missed in the media coverage was that these results were obtained from a single question: ‘In your opinion how concerned would you feel if one of your close relatives were to marry a person of Muslim faith’, Jewish faith, Asian background, Aboriginal background, and so on. The potential meanings of such a question were not explored; rather, a straight line was drawn to ‘Racist attitude indicators’. Furthermore, the question was asked with an uneven response frame, providing respondents with one positive and four negative response options (all four indicating ‘concern’). The four negative responses were then simply tallied without the application of weights for strength of opinion to provide the indicator of ‘racist attitudes’. Using this procedure, an indication of ‘slight’ concern was given the same weight as ‘extreme’ concern.

Public opinion polling is a ‘science’ fraught with difficulty. Poll results are affected by the specific wording of questions, the placement of questions within a survey, sample size and methodology, mode of administration and timing. The pattern of response is in part dictated by the type of question asked. Majority opinion on many issues is vague, half-formed and inconsistent, and only to be placed in dichotomous categories with caution. On population issues a survey respondent may typically support both assimilation and multiculturalism, and both favour cultural diversity and indicate concern over the division that it produces (see, for example, Goot 1999, p. 31; Goot and Watson 2005, p. 185).

Best practice in surveying requires substantial attention to questionnaire design, with reference to wording, response frame, reliability checks, question order and rankings of relative importance. A survey may find negative views at the level of 70 per cent or 80 per cent, but unless there is evidence to establish strength of opinion the finding is incomplete. Where possible, there should be pretesting of the survey instrument and enough questions to enable the development of attitudinal scales (see, for example, Rea and Parker 2005; DeVellis 2003). Finally, results should be considered in the context of other relevant survey research.

10.3 Key indicators of Australian opinion

The following discussion presents my interpretation of some key indicators of Australian opinion.

Australians are among the most open to immigration

There is evidence to indicate that Australia and Canada rank as the most receptive to immigration among western countries, although the level of support over time is

not consistent. A key source for cross-national comparison is the International Social Survey Program survey conducted in 2003. It ranks Canada and Australia at the top level: over 60 per cent of respondents support the existing intake or its increase, and the next level of support is below 50 per cent (see table 10.1).

Table 10.1 Attitude to immigration intake, selected countries 2003

	<i>Number of immigrants coming to country</i>			
	<i>Increase</i>	<i>Remain the same</i>	<i>Increase & remain the same</i>	<i>Decrease</i>
Canada	29	39	68	32
Australia	23	38	61	39
Spain	10	39	49	52
Denmark	10	39	49	51
United States	11	32	44	56
Portugal	3	41	44	56
New Zealand	16	28	43	57
Sweden	12	30	42	58
Ireland	9	32	41	59
Austria	7	32	39	61
France	8	26	34	66
Hungary	2	29	31	69
Germany – West	5	24	30	70
Netherlands	4	26	30	70
Norway	7	22	29	71
Great Britain	6	16	22	78
Russia	4	13	18	83

Source: ISSP 2003. The Australian survey was completed by 2183 respondents and was in the field from 27 August to 24 December 2003. The question employed a five-point response frame: Do you think the number of immigrants to [COUNTRY] nowadays should be increased a lot; increased a little; remain the same; reduced a little; reduced a lot. Subtotals may vary +/- 1 per cent due to rounding. (ZA 2005)

Between 1998 and 2009, there was a high level of support for the immigration intake; support fell between 2009 and 2010.

Questions relating to the immigration intake have been a staple of polling for over 50 years and provide the most reliable basis for a precise understanding of trends in opinion. These questions produce volatile results. Whereas in the years from 1990 to 1995 a large majority (over 70 per cent at the peak) considered that the intake was too high, surveys after 1998 indicated a significant and consistent shift in opinion, such that opposition to the intake became the minority viewpoint and for eight years the level of those considering the intake to be about right or too low was in the 53–57 per cent range, in large measure consistent with the 2003 International Social Survey Program finding. Over the 12 months to June 2010, however, there

was a shift, with the result that the most recent polls indicate an even division of opinion (see table 10.2).

Table 10.2 Attitude to level of immigration, Australia, selected years

<i>Year</i>	<i>Too high %</i>	<i>About right / too few %</i>
1996	62	32
1997	64	28
2001	41	54
2002	41	54
2003	37	57
2005	39	56
2007	36	53
2009	37	55
2010	47	46

Sources: Various polls, 1996-2005 (Markus, Jupp and McDonald 2009, p. 126), Scanlon Foundation polls 2007-2010 (Markus and Dharmalingam 2008; Markus and Arnup 2010; Markus 2010a).

Thus, the Scanlon Foundation survey in June 2010 found that 47 per cent of respondents considered that the intake was ‘too high’. In seven polls administered by telephone in the period from July 2009 to July 2010, the highest proportion who considered the intake to be too high was 54 per cent, with an average of 46 per cent for five polls other than the Scanlon Foundation poll conducted between March and July 2010² (see table 10.3).

Majority opinion supports the view that the Australian Government does not provide sufficient infrastructure for future population growth

The Scanlon Foundation survey asked respondents to rate the record of the Australian Government in providing the infrastructure for future population growth. Only 24 per cent rated it as good (2 per cent ‘very good’), 52 per cent as poor (20 per cent ‘very poor’), and 21 per cent as ‘neither good nor poor’. The highest proportion of those giving a poor rating were residents of NSW (59 per cent),

² See Markus (2009); *The Age*, 10 November 2009 and 19 April 2010; Roy Morgan Research, Finding number 4536 (reporting polls in March and July 2010); Essential Report, 5 July 2010; Nielsen Poll in Crikey (Pollytics), 1 August 2010. This excludes an online poll conducted in July 2010 for Stanford University and the United States Studies Centre at the University of Sydney, which found that, in response to a strongly worded negative proposition ‘Right now, Australia is taking too many immigrants’, 33 per cent ‘agreed strongly’ and 36 per cent ‘agreed’, a total of 69 per cent in agreement. In contrast, in response to a positive proposition (‘Immigrants have a very favourable effect on Australia’), 9 per cent ‘agreed strongly’ and 49 per cent ‘agreed’, a total of 58 per cent in agreement (Iyengar and Jackman 2010).

Table 10.3 Attitude to the level of immigration and population growth, July 2009 to July 2010

Question	<i>Increase/ reduce immigration</i>	<i>Current intake</i>	<i>Increase/ reduce immigration</i>	<i>Current intake</i>	<i>Increase/ reduce immigration</i>	<i>Increase/ reduce immigration</i>	<i>Current intake</i>
Date	July 2009	November 2009	March 2010	April 2010	June 2010	July 2010	July 2010
Survey	Scanlon Foundation	Age / Nielsen	Morgan	Age / Nielsen	Scanlon Foundation	Morgan	Nielsen
Reduce	37%	43%	41%	54%	47%	40%	47%
Maintain or increase	55%	52%	54%	44%	46%	58%	50%
Uncertain/ don't know	7%	4%	5%	2%	7%	2%	4%

Source: Specified polls, 2009-2010 (see footnote 2).

Table 10.4 'How would you rate the record of the current federal government in providing the roads, railways, and housing needed for future population growth? Is it ...' (2010)

Response	Per cent
Very good	2
Good	22
Neither good nor poor	21
Poor	32
Very poor	20
(Refused)	0.2
(Don't know)	3
Total	100
N (unweighted)	2021

Source: Scanlon Foundation poll, 2010 (Markus 2010a).

followed by Victoria (51 per cent) and Queensland (51 per cent) (Markus 2010a, pp. 28–29)

Immigration issues are ranked low to medium as issues of concern

On the available evidence, in Australia immigration issues are not ranked at the top level of issues of concern. At a time of heightened public discussion, as occurred in the first half of 2010, immigration issues occupy a medium ranking; at other times the ranking is low. This is in contrast with findings for a number of European countries — for example, late in the period of the Blair government, immigration and race relations became the top-ranked issue in England (IMSRI 2008, p. 19). The

Eurobarometer survey in 2006, a peak year for negative sentiment, indicated that immigration was ranked in Spain (64 per cent) and England (40 per cent) as one of the two most important issues facing the country. Across the European Union, immigration ranked fourth (21 per cent), after unemployment (40 per cent), the economic situation (23 per cent), and crime (23 per cent) (European Commission 2007).

Newspoll for *The Australian* provides best long-run data on the ranking of issues. That survey indicates that from 2000 to 2006, when immigration was included as one of some 15 specified issues, it ranked near the bottom in most surveys. In the context of the 2010 federal election, Newspoll included the asylum issue: it ranked sixth of 10 specified issues. While it was well below the top-ranked issue, it was above interest rates, inflation, climate change and industrial relations (table 10.5).

Table 10.5 Would you say each of the following issues is very important, fairly important or not important on how you personally would vote in a federal election?’

<i>Issues</i>	<i>2000 Sept %</i>	<i>2001 Sept %</i>	<i>2002 Feb %</i>	<i>2002 June %</i>	<i>2004 June %</i>	<i>2006 June %</i>	<i>2008 July %</i>	<i>2010 Feb %</i>	<i>2010 July %</i>
Health & Medicare	74	77	74	77	82	83	79	82	79
Education	78	79	79	77	80	79	78	77	72
Economy						67	72	74	70
Water planning							74	66	
Welfare and social issues	60	61	58	60	59	59	61	59	
Family issues	63	61	63	59	61	59			
National security					66	60	49	57	54
Environment	64	61	63	60	60	60	63	57	
Leadership	61	62	59	57	65	55	57	56	62
Climate change							55	40	43
Defence		44	50	46	54	51			
Industrial relations	38	37	35	32	31	53	38	35	42
Unemployment	65	63	61	60	55				
Taxation	57	58	56	51	57	54			
Interest rates	53	43	46	44	50	51			45
Inflation	52	40	41	41	40	45			43
Women’s issues	38	41	37	43	46	41			
Immigration	36	50	49	43	35	43			
Asylum									50
Aboriginal issues	34	28	25	27	26	27			

Source: Newspoll for *The Australian*.

Other survey findings indicate that immigration emerged as a mid-ranked issue during 2010. The 2010 Scanlon Foundation survey asked respondents in an open-ended question, ‘What do you think are the most important problems facing Australia today?’ The economy (22 per cent) ranked first, followed by the environment (15 per cent). Immigration and population issues ranked close to fourth (7 per cent). A similar proportion of respondents selected asylum issues (Markus 2010a, p. 18).

The ANU Poll conducted in March and June 2010 obtained a similar ranking. In both polls the economy ranked first, followed in March with a close to equal ranking of health care, immigration and the environment (12–13 per cent). In June, immigration ranked third, after the economy and the environment. Immigration was selected by 14 per cent of respondents, a relatively low proportion in the context of the 53 per cent who nominated the economy in March 2009 (ANU Poll 2009, 2010).

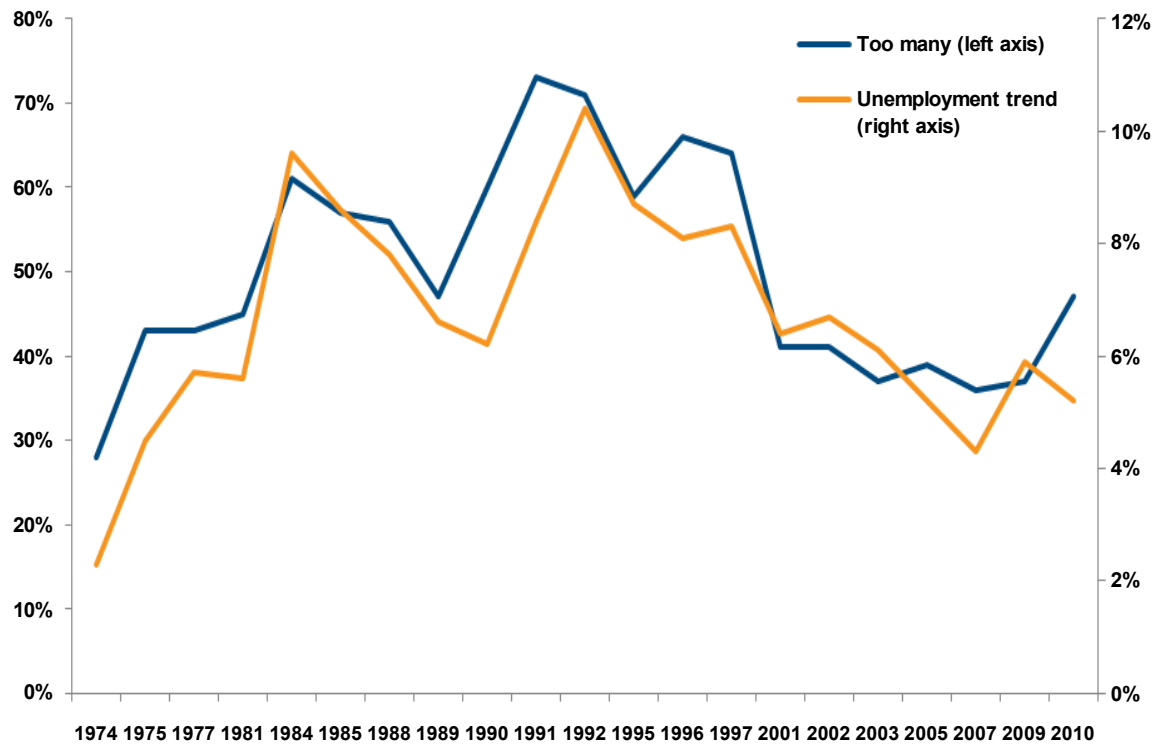
10.4 Explaining public opinion

Long-run survey findings indicate that attitudes to immigration closely correlate with the level of unemployment; a secondary correlation is with increasing political attention to immigration issues.

In the first half of the 1990s, the level of unemployment in Australia rose from 5.8 per cent to 10.7 per cent. In that context, over 70 per cent of respondents indicated that the immigration intake was too high. With the recovery of the labour market, negative sentiment towards immigration fell (as indicated in figure 10.1) and remained low until 2010. The impact of the global financial crisis on the Australian labour market was relatively minor, with unemployment increasing from 4.2 per cent in July 2008 to 5.8 per cent in December 2009. Despite uncertainties about the future, at that time there was no marked increase in the level of negativity towards the immigration intake.

The second factor that affects attitudes is the extent to which the issue receives political attention. Figure 10.1 indicates the impact of the ‘Asianisation’ debate in the mid-1980s, the rise to national prominence of Pauline Hanson in the period 1996 to 1998, and the Coalition critique of asylum and then immigration policy led by Tony Abbott from late in 2009. During the 2010 election campaign, Abbott undertook to put an end to the arrival of asylum seekers by boat and to substantially reduce immigration.

Figure 10.1 Correlation between level of unemployment and those of the view that the immigration intake is 'too high', 1974 to 2010



Data sources: Various polls, 1996-2005 (Markus, Jupp and McDonald 2009, p. 126), Scanlon Foundation polls 2007-2010.

There are two additional factors of relevance. First, a fall in confidence in the capacity of the government to resolve issues and to represent the interests of the majority is associated with heightened concern over a range of policies, including immigration. Second, there is evidence that even without increased political attention there is a decline in support following years of high immigration. That occurred in the late 1960s and may have also been a contributing factor in 2010.

10.5 Politics of immigration and race

What proportion of the Australian population is attracted by appeals to cut the immigration intake, to oppose the entry of diverse cultural groups, and to favour a harsh policy to curtail the arrival of asylum seekers by boat?

To quantify the distribution of opinion within populations, a typology employing four categories was developed by researchers at the European Monitoring Centre on

Racism and Xenophobia: the intolerant, ambivalent, passively tolerant and actively tolerant. The intolerant are characterised by strong negative views towards minorities, rejection of the value of cultural diversity and support for policies of assimilation. Analysis of the racism and xenophobia module included in the 2000 Eurobarometer survey (with more than 16 000 respondents) indicated that the proportion of the intolerant within the then 15 European Union countries ranged from a low of 4 per cent to a high of 27 per cent. Intolerant attitudes were most widely held in Greece and Belgium, and were at the lowest levels in Sweden, Finland, Portugal and Spain (Thalhammer et al. 2001).

Findings of surveying in Australia over the past 30 years indicate that the intolerant are close to 10 per cent of the adult population and the ambivalent are a further 30–35 per cent, providing a catchment for the politics of race of around 40–45 per cent.

Statistical analysis of a range of demographic variables available in the 2009 Scanlon Foundation survey indicates that negative views towards immigration are most likely to be held by those:

- over the age of 65
- without post-school educational qualifications or with trade or diploma-level qualifications
- who describe their financial circumstances as ‘struggling to pay bills’ or ‘poor’
- whose profession is machinery operator, driver or labourer
- who indicate a religious affiliation, but attend a religious service infrequently
- whose material status is divorced or widowed (Markus and Arnup 2010, p. 72 ff.).

There is regional variation in attitudes, in part reflecting demographic differences in populations. The first two Scanlon Foundation surveys were designed to sample attitudes in areas of high immigrant population to explore the potential for hostile interaction of Australia-born and immigrant at a time of historically high levels of immigration.

In Melbourne and Sydney, the surveys explored four local government areas. Analysis was focused on three birthplace groups: the Australia-born with both parents Australia-born, termed ‘long-time Australian’; Australia-born, without reference to birthplace of parents; and those born overseas and of non-English speaking background.

Responses to three questions were correlated to identify those who considered the current immigration level to be too high, disagreed with the proposition that

‘accepting immigrants from many different countries makes Australia stronger’, and disagreed with the proposition that ‘ethnic minorities in Australia should be given government assistance to maintain their customs and traditions.’

The pattern of response indicates marked differentiation among the long-time Australians. At the national level, 21 per cent of long-time Australians responded negatively to all three questions, compared with 35 per cent in the regions of high immigrant concentration. In contrast, there was little variation between national and local findings among the Australia-born and non-English speaking background respondents in the four local government areas. The low level of negative sentiment among the non-English speaking background respondents sharply differentiates them from the long-time Australians (see table 10.6).

Table 10.6 Ancestry and birthplace — three correlated questions, cross-tabulated by birthplace, national and four local government areas, 2009

<i>Long-time Australians (national)</i>	<i>Long-time Australians (4 LGAs)</i>	<i>Australians (national)</i>	<i>Australians (4 LGAs)</i>	<i>Non-English speaking background (national)</i>	<i>Non-English speaking background (4 LGAs)</i>
22%	35%	21%	24%	8%	8%

LGA= Local government area.

Source: Scanlon Foundation poll 2009 (Markus and Arnup 2010, p. 71).

Supporters of the Liberal and National parties are the most attracted to calls to limit immigration and to adopt a harsher policy towards asylum seekers. Thus, in June 2010, 54 per cent of those who identified as supporters of the Coalition considered that immigration was too high, 38 per cent disagreed that accepting immigrants from many countries makes Australia stronger, and 36 per cent supported action to prevent boats carrying asylum seekers from landing. The largest differentiation with other parties was on the question of preventing boats from landing, which was supported by 21 per cent of those who would vote for Labor and 17 per cent of those who would vote for the Greens (see table 10.7).

Further indication of political division is provided by polls that asked respondents which party they thought would best handle asylum seekers arriving by boat, in the context of the increasing attention to the asylum issue since the second half of 2009. In April 2010, 44 per cent of Newspoll respondents indicated the Coalition, 26 per cent Labor (Newspoll for *The Australian*, 16–18 April 2010; Markus 2010b).

Table 10.7 Selected questions, cross-tabulated by intended vote, 2010

Question and response	<i>If there was a federal election held today, for which party would you probably vote?</i>		
	<i>Labor</i>	<i>Liberal/National</i>	<i>Greens</i>
'What do you think of the number of immigrants accepted into Australia at present?' — 'Too high'	43%	54%	36%
'Accepting immigrants from many different countries makes Australia stronger' — 'Strongly disagree' and 'Disagree'	26%	38%	18%
Which of the following statements comes closest to your view about the best policy for dealing with asylum seekers trying to reach Australia by boat? — 'Their boats should be turned back'	21%	36%	17%

Source: Scanlon Foundation poll 2010 (SPSS data file).

10.6 Conclusion

This analysis yields four key findings:

- Australians over the past 15 years have indicated a positive attitude to immigration, although change is evident in the 12 months to June 2010.
- Attitudes to immigration are volatile. There is scope for a marked shift in attitudes, but, in Australia as opposed to some European countries, immigration and population issues are unlikely to assume importance of the first rank.
- Analysis of the print media indicates a consistent pattern of sensationalist reporting of survey findings. This form of reporting impedes rational discussion of immigration issues.
- There has been increasing attention to asylum and immigration issues by the Coalition since late 2009. The calls for a change in policy, involving a cut to immigration and a harsher policy towards asylum seekers, are supported more strongly by those indicating that they would vote for the Coalition.

References

- ABC News 2011, 'Nearly half of Australians are anti-Muslim: study', 23 February.
- ANU Poll 2009, 2010, The Australian National University, 29 April 2009, 26 October 2010, 7 December 2010, <http://www.anu.edu.au/anupoll/>
- AuSSA (Australian Survey of Social Attitudes) website, <http://aussa.anu.edu.au/>
- Australian Red Cross 2010, 'Australians show sympathy with refugees — Red Cross survey', 21 June, <http://www.redcross.org.au/NRWsurvey.htm>
- Barry, E. 2011, 'Australia a land of racists: survey finds many anti-Muslim and anti-Semitic', *Herald Sun*, 23 February.
- Betts, K. 2010a, 'Population growth: what do Australian voters want', *People and Place*, vol. 18, no. 1, pp. 49–64.
- 2010b, 'A bigger Australia: opinions for and against', *People and Place*, vol. 17, no. 3, pp. 25–38.
- Challenging Racism: The Anti-Racism Research Project, http://www.uws.edu.au/social_sciences/soss/research/challenging_racism
- Curtin, J. 2010, 'Big Australia vision goes down like a lead balloon', *Sydney Morning Herald*, 4 August.
- DeVellis, R. 2003, *Scale Development: Theory and Applications*, Sage, London.
- ESDS (Economic and Social Data Service) 2011, *Guide to the Citizenship Survey*, <http://www.esds.ac.uk/support/E33347.asp>
- European Commission 2007, *Eurobarometer 66: Public Opinion in the European Union*, http://ec.europa.eu/public_opinion/archives/eb_arch_en.htm
- European Commission Public Opinion, Eurobarometer Surveys, http://ec.europa.eu/public_opinion/cf/index.cfm?lang=en
- European Social Survey 2011, <http://www.europeansocialsurvey.org/>
- Goot, M. 1999, 'Migrant numbers, Asian immigration and multiculturalism: trends in the polls, 1943–1998', *Australian Multiculturalism for a New Century*, Statistical Appendix part 2, National Multicultural Advisory Council, <http://www.immi.gov.au/media/publications/multicultural/nmac/statistics.pdf>
- and Watson I. 2005, 'Immigration, multiculturalism and national identity', in Wilson S. et al. (eds), *Australian Social Attitudes: The First Report*, UNSW Press, Sydney, pp. 182–203.
- Griffin, M. 2011, 'Survey finds NSW has most racial tension', *The Age*, 23 February 2011.

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- IMSRI (Ipsos Mori Social Research Institute) 2008, *Blair's Britain: The Social and Cultural Legacy*, <http://www.ipsos-mori.com/>
- ISSP Research Group 2003, International Social Survey Programme, National Identity II, SPSS data file, Distributor: GESIS, Cologne, Germany, identification number ZA3910.
- Iyengar, S. and Jackman, S. 2010, 'Australian and American attitudes to illegal immigration', United States Studies Centre at the University of Sydney, <http://ussc.edu.au/s/media/docs/publications/1008IllegalImmigrantsSurvey.pdf>
- Johnston, M. 2011, 'Australia tolerant of cultural differences: study', *Sydney Morning Herald*, 23 February.
- Lazzaro, K. 2010, 'Labor elite out of touch on population', ABC News, 14 April.
- Markus, A. 2009, *Mapping Social Cohesion: The Scanlon Foundation Surveys, 2009 Summary Report*, Monash Institute for the Study of Global Movements, <http://www.arts.monash.edu.au/social-cohesion/>
- 2010a, *Mapping Social Cohesion: The Scanlon Foundation Surveys, 2010 Summary Report*, Monash Institute for the Study of Global Movements, <http://www.arts.monash.edu.au/social-cohesion/>
- 2010b. 'Public opinion divided on population, immigration and asylum', *Policy*, vol. 26, no. 3, pp. 7–13.
- and Arnup, J. 2010, *Mapping Social Cohesion: The 2009 Scanlon Foundation Surveys*, Monash Institute for the Study of Global Movements, <http://www.arts.monash.edu.au/social-cohesion/>
- and Dharmalingam A. 2008, *Mapping Social Cohesion: The 2007 Scanlon Foundation Surveys*, Monash Institute for the Study of Global Movements, <http://www.arts.monash.edu.au/social-cohesion/>
- , Jupp, J. and McDonald, P. 2009a, *Australia's Immigration Revolution*, Allen & Unwin, Sydney.
- McAllister, I. et al. 2010, 'Public opinion towards population growth in Australia,' ANU Poll, October.
- McLaren, L. and Johnson, M 2005, 'Understanding the rising tide of anti-immigrant sentiment,' in Park, A., Curtice, J., Thomson, K. and Bromley, C. (eds), *British Social Attitudes: The 21st Report*, Sage, London, pp. 169–200.
- Rea, L. and Parker, R. 2005, *Designing and Conducting Survey Research: A Comprehensive Guide*, 3rd edition, Jossey-Bass, San Francisco.

-
- Rothon, C. and Heath, A. 2004, 'Trends in racial prejudice', in Park, A. Curtice, J., Thomson, K., Jarvis, L. and Bromley C., (eds), *British Social Attitudes: The 20th Report. Continuity and Change over Two Decades*, Sage, London, pp. 189–214.
- SBS World News 2010, 'Aussies sympathetic to refugees: Red Cross', 21 June.
- Statistics Canada 2011, Ethnic Diversity Survey (EDS), <http://www.statcan.gc.ca/>
- SUMC (Swinburne University Media Centre) 2010, 'Voters against population growth', posted 14 April.
- Thalhammer, E. et al. 2001, *Attitudes toward Minority Groups in the European Union*, European Monitoring Centre on Racism and Xenophobia, Vienna, http://ec.europa.eu/public_opinion/archives/ebs/ebs_138_analysis.pdf
- ZA (Zentralarchiv für Empirische Sozialforschung an der Universität zu Köln) 2005, Codebook, ZA Study 3910, ISSP 2003, National Identity II, info1.gesis.org/dbksearch/file.asp?file=ZA3910_cdb.pdf

11 Selection, migration and integration: why multiculturalism works in Australia (and fails in Europe)

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11.1 Introduction

Australia's population is growing. And it will keep growing, according to the key demographic factors. At a median age of just over 37 years, Australia's population is young compared to those of other developed nations. Australians born today can also expect to live much longer than previous generations, and longevity is forecast to improve further still. In addition, fertility is just below the level that would keep the native population stable. Finally, inward migration strongly exceeds outward migration, leaving a positive net migration gain to Australia year after year.

The demographic factors of life expectancy, fertility and migration shall ensure that under existing conditions, Australia's population will increase from its current level of about 22.5 million people.² By precisely how much is an unknown. The 2010 *Intergenerational Report* projected a most likely population scenario of 35.9 million by 2050 (Treasury 2010). My own calculations confirm the Treasury's findings (Brown and Hartwich 2010).

It is important to accept the inevitability of population growth because only then will we be able to work on the multiple challenges to public policies. Demographic change has many different facets. Related issues range from infrastructure provision and health care for an ageing population to planning for housing and water policy.

¹ The views expressed in this paper are those of the author and not of the Centre for Independent Studies, its Board of Directors, the members of its Council of Academic Advisors, or staff.

² Australian Bureau of Statistics, *Population Clock* (constantly updated online population projection based on most recent available data), <http://www.abs.gov.au/ausstats/abs%40.nsf/94713ad445ff1425ca25682000192af2/1647509ef7e25faaca2568a900154b63?OpenDocument>

Of all the probable results of Australia's inevitable population growth, though, the social impacts of migration are probably the most controversial. This is unsurprising. Migration can change the face of a country and alter the social and ethnic composition of entire cities or individual neighbourhoods. In the most positive case, migration can enrich a culture. In the most negative scenario, migration can create tensions within society and lead to socioethnic fragmentation and segregation.

Over the past half-century, Australia has become one of the most ethnically diverse countries on the planet. Internationally, it is seen as a model 'multicultural' society (although the term in itself may be misleading, as it mainly refers to a multiethnic society). Domestically, there is pride in this achievement, particularly since it was achieved in such a short time. As former Prime Minister John Howard put it some time ago:

No country has absorbed as many people from as many nations and as many cultures as Australia and done it so well. The strength of a culturally diverse community, united by an overriding and unifying commitment to Australia, is one of our greatest achievements and one of our greatest national assets. (Howard 2006)

Because part of Australia's predicted economic and demographic growth is from overseas migration, the challenge is to build on Australia's unparalleled record of integrating newcomers into its social fabric. However, to make that happen it is useful to study not only the success story of Australian migration policies. It is equally useful to draw on the negative examples set by other countries that failed to deal with their own migration programs. Both kinds of experiences, domestic success and European failure, can help us design the necessary migration policies for a socially cohesive Australia.

This essay first looks at the reasons why Australia's immigration policy has been so spectacularly successful in integrating its ethnically diverse migrants, and then compares the negative experiences of the United Kingdom and Germany. It concludes with policy recommendations to assist the social integration of new arrivals into the country.

11.2 Taking stock

How diverse is Australia? How well integrated are its migrants?

From the end of the White Australia policy, Australia has developed into one of the most diverse nations. At the time of the last census of 2006, nearly a quarter of Australian residents (23.9 per cent) were born abroad, and almost every second

resident (45 per cent) had at least one parent who was born overseas (DIAC 2010b). The largest share of Australia's overseas-born population came from Europe (47 per cent), followed by Asia (28 per cent) and Oceania (11 per cent).

Recent years show shifting immigration patterns. European migration, particularly from the United Kingdom, has declined, while arrivals from Asian countries have increased markedly. According to the Department of Immigration and Citizenship, since the 2006 Census, the number of migrants from India 'has increased rapidly and moved ahead of Italy and Vietnam to become the fourth largest contributor to Australia's overseas-born population' after the United Kingdom, New Zealand and China (DIAC 2010b, p. 10).

Although there is no single index figure to measure how well migrants integrate in a new society, indicators such as education results can be used to compare the performance of migrant children against the native population. The more similar the results, the more integrated are the children of migrants and vice versa.

In this respect, Australia seems to be doing particularly well. In comparative studies, the children of Australian migrants regularly do at least as well as the children of the native population, if not better (see, for example, Verwiebe and Riederer 2010). But are such indicators a reliable measure of good integration? A recent study published in the *American Sociological Review* came to a less flattering conclusion:

To analyze the effects of policies regulating immigration, we focused on traditional immigrant-receiving countries (i.e. Australia and New Zealand). In these countries, immigrant children perform better at school. We found that composition effects from restrictive immigration policies explain this better performance. Such policies ensure that better qualified adult immigrants are more eligible for admission into these countries. The relatively high educational and occupational status of immigrant parents in these countries fully explains the better educational performance of immigrant children in these countries. We did not find evidence supporting alternative explanations. Our analyses do not support the hypothesis that the better performance of immigrant children in traditional immigration countries can be explained by a more receptive attitude toward immigrants in these countries, nor by education policies specifically designed to meet the needs of immigrant children. Apparently, traditional immigrant-receiving countries do not differ from other Western countries in these respects. (Levels, Dronkers and Kraaykamp 2008)

Australia may deservedly claim to have the best integrated migrant children in the world. But that's not because specific efforts have been made to integrate them. It actually follows from the fact that Australia's immigration system works as a self-selecting mechanism. It allows only migrants who are well qualified and eager to succeed in their new country. Such people are then in turn also more likely to

ensure that their children will enjoy a good education. In this way, Australian migrant children succeed because they come from ambitious family backgrounds.

Another indicator of successful integration is crime statistics comparing the likelihood of different populations getting into conflict with the law. Unfortunately, we do not have country-of-birth crime statistics. Neither the Australian Institute of Criminology nor the Australian Bureau of Statistics (ABS) keep such records. However, statistics on Australia's prison population give us a clue about the ethnic background of the perpetrators of more serious crimes, such as homicide, assault and robbery.

According to the most recent ABS data, for every 100 000 Australia-born residents there are 202.4 prisoners. The total rate for the entire resident population, however, stands at 170 prisoners per 100 000 residents. This means that foreign-born residents actually have a lower chance of being imprisoned for serious offences than the native-born population (ABS 2010).

A few caveats remain, though. First, the prisoner statistics relate only to the most serious crimes. Second, there is a wide gap between different migrant groups, ranging from an extremely low rate of 28.2 for Indian-born to 555.3 for Samoan-born residents. Third, the figures are not controlled for age or socioeconomic status. Fourth, it may be that foreign-born offenders without Australian citizenship are deported early on in their criminal careers.

As with education results, that there are fewer criminals among migrants than among native-born Australians may not have much to do with a particularly good integration policy but with the fact that some newcomers are less likely to offend in any case. If you are qualified enough to go through the rigorous migration system, you are more likely to come from a respectable social background with a reduced tendency towards criminal activity.

Another way of looking at the integration of migrants is to analyse their status in the labour market. Unsurprisingly, skilled migrants do particularly well in this respect. In an update on the employment results of recent skilled migrants, the Department of Immigration and Citizenship concluded that skilled migrants have higher labour market participation than the overall population. Their unemployment rate is lower and their median full-time earnings are higher (DIAC 2010a). Unemployment rates of all migrants converge with the Australian average, the longer they have lived in Australia.³

³ <http://www.immi.gov.au/media/fact-sheets/14labour.htm>

Once again, the pattern is familiar. The better skilled the migrants, and the better their English language proficiency, the better are their labour market outcomes. That Australia does not have a general problem with unemployment and welfare dependency in its migrant communities has much to do with its selective, skilled migration policies. It is not, or at least not primarily, the result of specific efforts to integrate migrants into the Australian labour market.

Australia has become not only a very diverse country but also a country with a very well integrated migrant population. The reason behind this positive outcome, however, might not lie in programs to foster integration, diversity or multiculturalism. Through its public policy, Australia has deliberately attracted skilled and hard-working migrants (both in European migration after World War II and in Asian migration from the 1970s) whose ethics, skills and desire to make a new life in Australia managed to attract migrants willing to work and prosper in Australia, while effectively barring entry to those whose profiles did not match these strict requirements.

In terms of global migrant movements, Australia has been cherry picking. With its points-based migration system, it has actively tried to attract only the best-qualified migrants most likely to positively contribute to Australia's society and economy.

Other countries have been far less selective in their immigration policies. The United Kingdom and Germany are good examples of such less targeted migration programs. Both countries admitted migrants for reasons other than the migrants' skills profiles. Both are now case studies of how unplanned migration policies can create social segregation and welfare dependency — the very things Australia has avoided so far. But we can easily fall into the same trap if we do not take precautions.

11.3 United Kingdom: living apart together

The United Kingdom has always attracted migrants. Ever since the Norman conquest of 1066, large waves of migration regularly reached Britain (Panayi 1994). In the 17th century, more than 50 000 Huguenots arrived; between the 16th and the 20th centuries, more than 150 000 Jews settled in Britain. However, ethnically the United Kingdom remained a predominantly white European country. Its ethnic composition after World War II looked little different from that in late medieval times. The 1951 Census recorded a foreign-born population of about 2.1 million (4.2 per cent of the total population), and they were almost exclusively from other European countries (ONS 2005).

Compared to the preceding centuries of ‘ethnic tranquillity,’ Britain experienced demographic changes at a remarkable speed and intensity after World War II. They were triggered almost by accident. The Nationality Act of 1948 gave a right of residence to the citizens of all places around the world that were still British colonies on 1 January 1949. In theory, more than 800 million people could have moved to Britain under this law. However, Britain did not expect a surge of migrants (Hansen 2000). After all, it was still suffering from the destruction of the war (food rationing only ended in 1954!) and did not consider itself as a desirable destination.

Reality was different. Migrants from the colonies arrived in droves. Despite later attempts to close the door that had been opened wide in 1948, the number of foreign-born UK residents grew dramatically: 2.5 million in 1961, 3.4 million in 1981, and 4.9 million in 2001. The current figure is close to 7 million.

It was not just the number of migrants that changed, but their ethnicity as well. In the 2001 Census, 85.7 per cent were classified as ‘White British.’ However, there are strong regional variations: Scotland, Wales and Northern Ireland remain almost exclusively ‘White British’, while England has lower percentages. The lowest ‘White British’ share was recorded for Greater London (57.7 per cent).

In a sense, the United Kingdom and Australia have experienced similar developments over the past 60 years. Both started out as almost exclusively white British countries, and both have become ethnically diverse since (Australia even more so than Britain). However, Australia is seen as an example of successful multiculturalism, whereas Britain has to deal with increasing segregation, religious extremism, racial tensions and also, as in the attacks on the London Underground, incidences of home-grown terrorism. Migration and the lack of integration are driving Britain apart. In the words of Trevor Philips, chairman of the Equality and Human Rights Commission, Britain’s current approach to multiculturalism is moving Britain to ‘sleepwalk towards segregation’.

The most obvious explanation is that Britain did not select its migrants like Australia, which allowed only those migrants it wanted. Compare this to the United Kingdom’s open invitation to hundreds of millions of unknown quantities from the colonies. Just a link to the Commonwealth of Nations sufficed. Throughout the postwar period, it has been far easier to enter the United Kingdom than its former colony, Australia.

Britain’s development into an immigration nation largely happened in the same way it had built its empire: unplanned, uncoordinated and, in the words of John Seeley, in ‘a fit of absence of mind’. British governments adopted multiculturalism as a

guiding principle, and introduced strict non-discrimination laws in the mid-1960s. Noble motives aside, British authorities showed an astonishing lack of interest in either steering migration or ensuring migrants' integration into British society.

The superficiality of British multiculturalism is on display in every British town hall. The British Government and its agencies now rival the United Nations in their employment of interpreters and translators. London's *Daily Telegraph* reported that the police spend £25 million on interpreters annually for the benefit of foreign offenders, victims and witnesses who do not speak English.⁴ Haringey Council welcomes visitors to its website with information in French, Kurdish, Albanian, Somali and Turkish. The council of Salford went even further. It recruited a 'Welfare Rights Linkworker' to provide advice on 'means-tested, non-means tested and disability benefits as well as tax credits' in Urdu and Punjabi. Although such initiatives are well intentioned, they send a problematic message to newcomers: English is optional.

As a result of such policies, the integration of migrants into British society has been a case of hit or miss. Although some migrant groups have become vital and successful parts of society, that is by no means true for the migrant community as a whole. In particular, the alleged lack of integration of Muslim migrants has been the subject of controversy in recent years.

Based on data from the UK Fourth National Survey of Ethnic Minorities, an Institute for the Study of Labor discussion paper showed that Muslim integration differed significantly from non-Muslim integration:

We find that Muslims integrate less and more slowly than non-Muslims. A Muslim born in the UK and having spent there more than 50 years shows a comparable level of probability of having a strong religious identity than a non-Muslim just arrived in the country. (Bisin et al. 2007)

Slow integration into British society is also confirmed by opinion polls. According to a report by the British think tank, Policy Exchange, 37 per cent of young British Muslims would prefer to live under sharia law (Mirza, Senthukumar and Ja'far 2007).

Britain developed into a migration country not only without goals or plans but also without a clear idea of what it desired to be. This lack of guiding principles was filled by migrant communities clinging on to their (religious) identities. Britain allowed migrants to dictate the terms of their residence, permitting increasing numbers for diminishing returns. The British are themselves partly to blame for the

⁴ <http://www.telegraph.co.uk/news/uknews/law-and-order/6140345/Police-spend-70000-a-day-on-translation.html>

ensuing segregation tendencies. Their naive ‘anything goes’ multiculturalism has failed.

11.4 Germany: unselected migration into the welfare state

Germany’s migration history shows some parallels to that of the United Kingdom. Germany, too, received large migrant groups throughout its history: Huguenots fleeing from religious persecution in the 16th and 17th centuries and Poles who found work in the coal and steel industries of the Ruhr in the 19th and early 20th centuries. As in the United Kingdom, migration was almost exclusively from white, European and mainly Christian countries.

It is also notable that these migrant groups assimilated so well that only their French and Polish sounding surnames testify to their migrant history. It is fair to say that in the immediate postwar period Germany was as ‘white German’ as Britain was ‘white British’ (that is, an ethnically homogeneous country).

As in the case of Britain, Germany’s ethnic composition has changed dramatically and rapidly since then. Last year, the German Federal Statistical Office reported that, of Germany’s 81.8 million inhabitants, 16 million people (19.5 per cent) were of a so-called ‘migration background’ (Statistisches Bundesamt 2010), defined as either being a migrant or the descendant of migrants who entered the country after 1950. Of those people, 7.2 million migrants (8.8 per cent) did not hold German citizenship. A large part of German migrants still originate from other European countries. However, there are currently about 3 million ethnic Turks living in Germany.

The differences between Germany’s migrant community and the rest of society were strong:

- At an average age of 34.7 years, migrants were younger than the native population (45.6 years).
- Fourteen per cent of migrants, compared to only 1.8 per cent of non-migrants, lacked school qualifications.
- Even more migrants (42.8 per cent) than non-migrants (19.2 per cent) did not have any professional qualifications.
- Consequently, unemployment among working-age migrants was twice as high as in the rest of the working-age population (12.7 per cent and 6.2 per cent, respectively).

From this statistical snapshot, the big deficiencies in the integration of migrants are obvious. However, the problems become more apparent if we break the migrants into constituent groups. The federal Labour Agency published a statistic showing the huge differences in tertiary qualifications of German residents aged 26–35 (table 11.1).

Table 11.1 Tertiary qualifications, German residents aged 26-35

	No qualifications %	Vocational training %	University degree %
Germans without migration background	12	68	20
German refugees from Eastern Europe	14	69	17
Germans of other origin	21	59	20
Other foreign nationals	30	59	11
German citizens of Turkish origin	33	57	10
Turkish nationals	54	44	2

Source: IAB (2008).

It is clear that Germany has a social and integration problem concentrated in clearly defined migrant groups. These problems exist with regard to other criteria, such as welfare dependency and crime rates, as former state treasurer and central bank director Thilo Sarrazin shows in his book, *Deutschland schafft sich ab*. With its provocative title, it became the best-selling non-fiction book in postwar history by dealing head on with the failings of integration in Germany (Sarrazin 2010).

There are many reasons why Germany scores poorly on integration:

- Germany had invited migrants as ‘guest workers’ as a quick fix to labour shortages in the 1950s and 1960s. However, the jobs were almost exclusively non-skilled labour, and thus the qualifications of those arrivals were poor.
- It was assumed that guest workers would eventually return to their home countries, so no efforts were undertaken to integrate them.
- The Germans were busy trying to figure out their own national identity after the Third Reich — how could they make a national identity attractive to new arrivals when they had such severe difficulty in defining who they were?
- Not only did the guest workers not leave, they brought in members of their families through family reunion visas. There were no skills requirements.
- The generous German welfare state further encouraged this process. A life on benefits in rich Germany was often more enticing than a life at work in poor Turkey.

Germany did not choose its migrants carefully and ended up with large groups of poorly educated ‘migration background’ people.

11.5 Conclusion

Australia, the United Kingdom and Germany: all three of these countries were less ethnically diverse after World War II than they are today. But only Australia managed the transition to a multiethnic society well.

The differences between the three countries can almost entirely be reduced to different approaches to selecting migrants. Whereas Australia always emphasised skills and language proficiency, Germany and Britain had a free-for-all policy. If Australia wants to continue the process of attracting migrants into the future, it should not deviate from its policy of strictly enforcing its selection of migrants by their suitability.

Migrants can only add value to recipient countries if they fit in and make an effort to integrate. Immigration nations ignore this basic insight at their peril.

References

- ABS (Australian Bureau of Statistics) 2010, *Prisoners in Australia 2010*, Cat. no. 4517.0, [www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/F3916FB1F45FAF12CA2577F3000F11F0/\\$File/45170_2010.pdf](http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/F3916FB1F45FAF12CA2577F3000F11F0/$File/45170_2010.pdf)
- Bisin, A. et al., *Are Muslim Immigrants Different in Terms of Cultural Integration?*, Discussion paper no. 3006, Institute for the Study of Labor (IZA), Bonn.
- Brown, J. and Hartwich, O.M. 2010, *Populate and Perish? — Modelling Australia’s Demographic Future*, Centre for Independent Studies, St. Leonards, <http://cis.org.au/images/stories/policy-monographs/pm-112.pdf>
- DIAC (Department of Immigration and Citizenship) 2010, *How New Migrants Fare: Analysis of the Continuous Survey of Australia’s Migrants*, Canberra, www.immi.gov.au/media/publications/research/_pdf/csam-results-2010.pdf
- 2010, *Population Flows: Immigration Aspects*, 2008-09 edition, Canberra, www.immi.gov.au/media/publications/statistics/popflows2008-09/
- Hansen, R. 2000, *Citizenship and Immigration in Post-War Britain*, Oxford, New York, p. 53.

-
- Howard, J. 2006, 'Shared values: the cement of our nation', *The Age*, 26 January, www.theage.com.au/news/opinion/shared-values-the-cement-of-our-nation/2006/01/25/1138066857391.html
- IAB (Institut für Arbeits- und Berufsmarktforschung), *IAB-Kurzbericht 17/2008*, Nürnberg, <http://doku.iab.de/kurzber/2008/kb1708.pdf>
- Levels, L., Dronkers, J. and Kraaykamp, G. 2008, 'Immigrant children's educational achievement in western countries: origin, destination, and community effects on mathematical performance', *American Sociological Review*, vol. 73, pp. 835–53.
- Mirza, M., Senthukumaran, A. and Ja'far, Z. 2007, *Living Apart Together — British Muslims and the Paradox of Multiculturalism*, Policy Exchange, London.
- ONS (Office for National Statistics) 2005, *Focus on People and Migration*, ONS, London, pp. 132–33.
- Panayi, P. 1994, *Immigration, Ethnicity, and Racism in Britain*, Manchester, New York.
- Sarrazin, T. 2010, *Deutschland schafft sich ab*, Deutsche Verlags-Anstalt, Munich.
- Statistisches Bundesamt 2010, *Pressemitteilung Nr.248 vom 14.07.2010: Erstmals mehr als 16 Millionen Menschen mit Migrationshintergrund in Deutschland*, Wiesbaden, www.destatis.de/jetspeed/portal/cms/Sites/destatis/Internet/DE/Press/pm/2010/07/PD10_248_122,templateId=renderPrint.psml
- Treasury 2010, *Australia to 2050: Future Challenges, Intergenerational Report*, Canberra, 2010, www.treasury.gov.au/igr/igr2010/report/pdf/IGR_2010.pdf
- Verwiebe, R. and Bernhard Riederer, B. 2010, *Educational Differences Between Native-born and Immigrant Youth in Western Societies: A Study of the Influence of Institutional and Individual Factors on the Basis of PISA Data from 2000, 2003, and 2006*, Working Paper presented at the 2010 Spring meeting of the Research Committee on Social Stratification and Mobility (RC28) of the International Sociological Association, http://soc.haifa.ac.il/~haifa2010/wp-content/uploads/Verwiebe_Riederer.pdf

Discussant comments

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First of all, let me say to Oliver: welcome to Australia. I hope you get your permanent residence. I think we all feel we need you. Let me also say preliminarily that, while I am an economist, I am talking to you now not as an economist at all, but just as a person interested in immigration because — like our Prime Minister — I was a child immigrant here, except I've been in Australia, I think, longer than she has and that, I suppose, makes me more Australian than our Prime Minister.

First of all, I will come to Andrew's paper. I agree with everything he says. I have actually been a great admirer of his work for some years because, as he said, there have not been many people working in this field — that is, the sociology of immigration.

In 2003 I gave the Snape lecture on immigration for the Productivity Commission. It has been published in a little booklet that you can all pick up. I needed to do some research in preparation, and I found there was a considerable lack of information. I think Andrew has filled that gap more than any other individual. I particularly recommend to you a document called *Mapping Social Cohesion* by Professor Andrew Markus and published by the Scanlon Foundation and Monash University. This document has more detail than the paper that he has actually presented here. All I can say is, 'Keep at it, and I hope you get lots of money and have big programs and do a lot more quality research.'

Let me now come to substantive issues. Obviously, if we are going to have more population, we will need continued immigration, and we want that to happen in a comfortable way, without stress or strain. There are always going to be people who do not like immigrants, and I will say a little bit on the history of that in a minute. I just want to make two general points, one concerning the first generation and the other concerning the second generation. I am focusing now on those immigrants where there is a possible problem — that is to say, those who come from a non-English speaking background (like me) or a non-European background, such as Indians, Chinese, Vietnamese and Africans.

I begin with the first generation. The first generation is usually very grateful to be here, either for obvious reasons if they are refugees or because their standard of living and their job opportunities have improved. In many cases, one expects them not to speak English well. Sometimes the wives have great difficulty speaking the language. One should expect them to live in areas where other such people live. So you have Victoria Street in Melbourne full of Vietnamese, you have Italians in Lygon Street, as it was once, and so on. That seems to me quite inevitable, and we should expect it. In fact, it helps their integration into the country. We should not expect them to become very Australian. They must follow the laws and so on, but people in their forties and fifties or even their thirties cannot change that much and should not be expected to.

What really counts is the second generation (that is, those born in Australia), as well as the migrant children of the immigrants. The latter are the children up to (perhaps) the age of 16, a category to which, as I say, the Prime Minister and I both belong. It seems to me really important that this group — both the migrant children and the second generation that are born here — fit into the society. Here I think it is very important to do research. When I researched for the paper that I wrote eight years ago (the Snape lecture), I discovered some research that had been done on this. I think the principal researcher was a colleague of Peter McDonald at the Australian National University, Dr Khoo. It was very informative, and I will just mention some of the things I found.¹ I looked at three categories, in all cases children of migrants and second generation: Italians, Greeks and Vietnamese.

When I picked them, they were the largest groups of postwar non-Anglo immigrants that had been here for some time, so there was a significant second generation. If one takes the very recent immigrants, one does not have that opportunity. I found a number of things. First of all, I found that they had all attained an educational level higher than their parents, even though their parents in all three cases were primarily not skilled migrants of the type that Oliver has referred to, but came mostly from peasant or small-town backgrounds in Italy, Greece and, to some extent, Vietnam. So they improved on their parents. If you judge them by other criteria (specifically, what proportion went to school or university, compared with comparable age groups in the general Australian community), they all were well ahead of the

¹ Since the Roundtable, I have learned that this work depended heavily on material from the Census, but the relevant question in the Census is regrettably no longer being asked. Hence, it would not be possible to do this research from more recent data. The Census needs to ask for the country of birth of each of the parents of the person. This was indeed asked up to the 1996 Census, but not at the later censuses. (I am indebted to Peter McDonald for this information.)

general Australian population — ‘Australian’ being the category of people whose parents were not born abroad but who were third-generation Australians, or more. So there was a major improvement in education for all those three categories, and that was not because the migrants were skilled.

But I feel I would like to see more studies of other categories, various others, including, say, Lebanese. I’d like to know what has happened to the second generation born here, particularly in education levels. I think someone here whom I met yesterday is actually doing some research on this. If we wanted to ask ourselves what kind of people do we want to bring into the country to join our happy family, above all we should be thinking about the second generation and perhaps not expect too much from the ones who actually come in (the adult migrants). But we do want the second generation to integrate and possibly even assimilate.

This raises another issue. Is it integration or assimilation that we want? Integration clearly involves accepting and understanding the democratic system, obeying the laws, and some other matters, but assimilation means more. Do we want them to become completely ‘like us’. And who is the ‘us’ anyway? Must they follow AFL or Rugby, or is it all right to follow soccer? Perhaps in this and other respects some diversity is acceptable.

Let me just make one simple point: I understand that Muslims are not supposed to drink alcohol. They do not all follow the rules, but I think on average they tend to drink less than the average young Australian. I feel that there are certain respects in which we do not want immigrants to assimilate into Australia, and that is one of them. Perhaps, on average, young Australians should become a little more like Muslims in that respect. When it comes to hard work, I think perhaps the Chinese immigrants have something to teach the average Australian. So we want them to fit in (I will not say ‘assimilate’, but ‘fit in’) and maybe improve the society.

Let me come back to the issue raised by Oliver. What should be the focus of immigration selection?

This requires more research but I suppose if we go primarily for skilled immigrants, as we have been doing, the chances are that their children will also be more education-minded and probably the favourable outcome I have referred to will then result. But it is worth bearing in mind that the big numbers we historically had from Italy and Greece, who have been very successful both in assimilating (or integrating) and educationally, came to a great extent from peasant backgrounds. They were not necessarily skilled at all.

Incidentally, I read recently that in the immediate postwar period there were people who had skills and were deliberately told not to use them. They were asked to come

as workers in, say, the Snowy hydroelectric even though they might have been qualified doctors and so on, but their qualifications would not have got them into the country. Rather, they had to be physically fit. So that was a different story from what we have now, when we do, of course, select skilled people.

That is almost all I wanted to say, but I will mention just one other thing as one who has experienced being an immigrant. I had one personal experience, an impression in the early years when I came in, that was very similar to experiences noted by other immigrants to whom I've talked more recently. We found the following contrast: all the Aussies we met were very friendly. Indeed, Australians are a naturally friendly people — maybe they differ a little from the English, the French, the Germans and so on.

On the other hand, one would read in the newspapers hostile articles or letters to the editor by people one had never met. In those days (when I was young) there was a weekly paper called *Smith's Weekly*, and then there was a magazine called *The Bulletin* and there was an organisation, the RSL, that most of you will know. They all were very critical of immigrants. All sorts of terrible things were said that obviously were not true. This contrast between everybody whom we met, who were so nice, and yet one read about hostility — which I also think some current immigrants have noticed. This is a character thing. Australians cannot help being friendly, but we also cannot help having a minority of people who do not like or welcome immigrants.

General discussion

The discussion opened with one participant commenting that Australia's relative success in integrating immigrants (compared with the experiences of some European countries) is not a result of selecting migrants by skill or specific policies to induce migrants to integrate; rather, Australia's labour market is much less segmented than European labour markets, where insider-outsider segmentation contributes to long-term and cross-generational unemployment among some migrant groups. In addition, it was suggested, the 'failure of multiculturalism' in some European countries (such as France and Italy) is a misinterpretation of more general problems of social and economic disadvantage that manifest themselves in persistent unemployment and social exclusion.

In response, Professor Corden commented that the effects of immigrant selection should not be under-emphasised. Migrant self-selection can have a significant impact on the extent to which migrants integrate into a destination country. Professor Corden cited the United States as an example where migrant self-selection has contributed to positive outcomes among the second generation of migrants — who are found to outperform their native peers on indicators such as school performance and health risk behaviours. He expressed an interest in seeing similar research undertaken into outcomes for second-generation migrants in Australia, but noted current data limitations in this area.

Dr Hartwich concurred with Professor Corden's emphasis on migrant self-selection, especially in response to policy settings in the destination country. In Germany, for example, the availability of welfare for new migrants — and the widespread awareness of this availability among potential migrants in other countries — had led to the self-selection of migrants who were disinclined towards employment. By contrast, Dr Hartwich said, the lesser availability of welfare benefits to migrants in Australia and the United States has worked well for these countries, by encouraging the self-selection of migrants with greater inclination to succeed through their efforts in the labour market.

Professor Markus cautioned against generalising about the successful assimilation of migrants to Australia. He noted that there have been significant numbers of unskilled migrants entering Australia, through the family reunion and refugee visa categories (as well as migrants entering in earlier decades prior to the current focus on skilled migration), and that this has contributed to 'substantial issues' with

assimilation among the second generation migrants of some ethnic groups. Dr Hartwich observed that structural changes in developed economies since the 1950s and 1960s have meant fewer jobs for unskilled migrants, so 'it is only right' for migration policy to favour skilled migrants.

The panel was asked whether an increase in temporary or guest-worker arrangements in Australia and other countries should be cause for concern, given the experiences of some European countries with guest workers. Dr Hartwich commented that guest-worker programs are not in themselves a problem, but that countries such as Australia are attractive destinations for settlement and so guest workers may not wish to leave. Professor Markus noted that guest-worker arrangements yield benefits in terms of greater labour market flexibility and shifting some of the risks associated with business cycle fluctuations onto workers and away from governments. However, he foresaw 'very substantial problems' if there were large increases in the number of temporary migrant workers in Australia.

One participant argued that the rules relating to long-term temporary skilled migrants in Australia compared favourably with those found in some European countries, where (for example) temporary workers must return to their home country for a specified period at given intervals. Such restrictions tend to be 'very unsatisfactory' in that they impede migrants' ability and incentive to integrate into the destination country and to continue accumulating human capital with the aim of eventually becoming lifelong residents. In response, Professor McDonald agreed that the temporary (subclass 457) visa program was 'a good way of doing immigration' as it provides for certainty for both employers and employees and gives migrants a pathway to permanent residency if they choose to stay in Australia.

On a different subject, Professor McDonald suggested that countries such as Australia, Canada and the United States may have had relatively greater success with immigrant integration due to their history as 'new settler countries'. His view was that because these countries all have an indigenous minority and everyone else is descended from immigrants, most of the population in each of these countries has the 'notion that we are relatively new' rather than 'having some kind of natural right which goes back thousands of years'.

The discussion concluded with a brief return to the topic of guest workers, as one participant suggested that the success of guest-worker arrangements varies with the particular nature and conditions of the program. An agricultural guest-worker program in the United States around the 1950s attracted many Mexican immigrants and (it was argued) resulted in an ongoing stream of Mexican arrivals that has been difficult to control due to the shared border, and has contributed to illegal immigration.

PANEL DISCUSSION –
IMPLICATIONS FOR POLICY DIRECTIONS

Panel discussion — Implications for policy directions

The discussion opened with one participant arguing that water is the ‘most important single constraint on population growth’ in Australia and suggesting that more attention be given to the issue of water availability. Another participant remarked that a number of Australian cities have responded to the issue by investing in desalination plants, which should be considered as a potential long-term solution to water availability (although not necessarily in the short term due to the recent floods).

A third participant quoted the Water Services Association of Australia — a peak body for urban water providers — as having estimated that the water needs of Australia’s major capital cities could be met under most population growth scenarios. However, this participant argued, the association’s analysis neglected to consider the cost of the technologies assumed in the projection (such as desalination) and so while it might be technically possible to ensure water availability in the context of continued population growth, the issue would be the distributional impact of the costs involved.

Another participant suggested that access to water is less of a concern in Melbourne (with its new desalination plant), Sydney, and south-east Queensland, but might be a constraint on population growth in Adelaide and Perth. Regional Victoria and New South Wales might also be areas of concern in terms of rainfall patterns and water availability. The issue of the high cost of desalination as a solution to water supply, in the context of population growth in coastal areas, was then raised.

On the more general topic of sustainable population growth, one participant attributed much of what was described as the recent ‘backlash’ against immigration in Australia to the rate of growth in the immigrant intake, rather than the level of population projected for a given point in the future. Sustainability, this participant said, needs to be thought of in terms of rates of change of the population rather than a particular ‘big number’ representing Australia’s future population. Professor Gregory agreed that the rate of growth of immigration is more important than ‘a stock number down the track’.

Professor Chiswick commented that if it is the case that high-skilled immigrants are internationally mobile, then developed countries need to consider having emigration policies — policies to retain both high-skilled immigrants and high-skilled natives.

A participant observed that much of the large increase in measured immigration in recent years is attributable to increases in overseas students, partly a real policy-induced change and partly the result of a change in ABS measurement methodology. The pathway to permanent residency for overseas students ‘created an industry’ that led to strong growth in migrant numbers, which has dropped sharply after the recent changes to rules designed to ‘put the brake on the numbers’. The participant then observed that it would be better to have a stable policy stance on overseas students that is consistent over time, but that it might not be achievable.

One participant commented that, although allowing overseas students easier access to the labour market and to permanent residency can benefit the economy, it can also be susceptible to exploitation — as demonstrated by the proliferation of unscrupulous education providers. This indicates that it is crucial to manage and administer the overseas student program properly. Another participant expressed the opinion that government might take greater control of temporary migration, rather than leaving it to market forces to determine the numbers of temporary migrants entering Australia.

It was observed that the tourism and education industries have become major service export industries for Australia, and the question for both Australia and other developed countries in a similar situation is how to keep the success of these sectors separate from entry into the immigration system. This participant wondered how countries such as Switzerland, which are very attractive to tourists, or such as the United States and the United Kingdom, which attract many overseas students, approach this issue.

Turning briefly to the topic of common resources, one participant commented that the decisions made by the existing population on the use of environmental resources such as water would affect the decisions of potential migrants to choose Australia as a destination. In particular, it was suggested, incumbents’ decisions on how to use or conserve such resources and how or whether to share ownership with newcomers would affect the ‘package’ of costs and benefits facing potential migrants, and in turn would affect migrant self-selection.

The discussion moved on to the general subject of maximising economic wellbeing as an overarching policy objective. One participant agreed that maximising the welfare of the incumbent population was the appropriate objective, but that this should include intergenerational considerations (especially in the context of

sustainability). This participant then raised the question of how effectively wellbeing can be measured and whether policymakers can assess whether policies maximise wellbeing.

Another participant responded that, rather than assuming that wellbeing is too difficult to measure and not referring to it in policy development, it would be better to compose a framework of measurable outcomes against which policies can be evaluated. Policymakers would then check that these ‘intermediate outcomes’ are consistent with the ‘ultimate’ outcome of maximising overall wellbeing. Returning to the idea of intergenerational equity issues, another participant suggested that implicit in the objective of maximising the wellbeing of existing residents should be the concept of maximising the present value of the future stream of net income to this group. It was noted that decisions on the appropriate weights and discount rates for this intertemporal optimisation problem then become crucial.

Returning to the question of environmental resources, the view was raised that such resources cannot or should not be managed as common property. Rather, it is ‘a very strong requirement’ that they be owned by the incumbent population and that any income generated from resource usage charges go to this population, it was argued. This participant also expressed concerns about water supply being a ‘major long-term issue’, arguing that desalination plants might not be a sufficient response.

The discussion concluded with a comment from one participant that it is more important to have control over the temporary migrant programs (and their pathways to permanent residency) than to cap migrant numbers. In the case of visa subclass 457 holders, it was argued, government needs to control the ‘flow-on’ to permanent residency, as it has with overseas students. If it is not too easy to become a permanent resident, some potential migrants will choose not to migrate. The participant conceded that the working holidaymaker program might need to be capped to avoid a possible ‘blow-out’ in numbers.

12 The value of migration to Australia

Dinner address

Andrew Metcalfe

Secretary, Department of Immigration and Citizenship

It's a pleasure to speak to you tonight. Before I begin, I wish to acknowledge the traditional custodians of the land we are meeting on today, the Ngunnawal people. I wish to acknowledge and respect their continuing culture and the contribution they make to the life of this region. I would also like to acknowledge and welcome other Aboriginal and Torres Strait Islander people who may be attending today's event.

The Productivity Commission has a knack of inveigling itself into policy debates. The draft report just a few weeks ago of Commissioner Patricia Scott into disability care and support looks likely to be a defining moment in moving towards a situation where we treat with greater dignity those who are born with, or acquire, a disability.

It is a tribute to the talent of the Commission — your chairman Gary Banks, Commissioners and staff — that it is recognised as speaking with authority on so many matters. Its contributions are always marked by seriousness of purpose and pursuit of the national good.

Let me turn to one of those matters on which the Commission occasionally speaks, the subject of this roundtable: a sustainable population.

Alongside the three Intergenerational Reports from the Treasury, it is the 2005 report of the Commission into an ageing Australia that has done most to frame public discussion on the challenges to be faced over the next 40 years as the large baby boomer cohort passes from work into retirement.

I am quite sure that the timing and the topic of this year's annual roundtable has been carefully chosen, coinciding as it does with government consideration of its sustainable population strategy.

I do not intend to comment in this address on my views on a sustainable population. I would only venture that I think it quite proper that the government sees the issue of a sustainable population as a whole-of-government matter, one where

immigration — and, I would add, citizenship as a positive expression of inclusivity — is part of the solution, but only one part.

I want to use the opportunity provided by this address to make some observations on the value of migration to this country and, in doing so, to gently nudge you into areas where I think the Commission — and the associated work of academic economists like those speaking at this roundtable — might do more to deepen our understanding.

Fundamental to the work of my department is how we operate. Our motto is *people our business*. It is easy in our work to be overwhelmed by volumes — in 2009-10, over 28 million passengers crossed our border, over 4 million visas were issued, and there were around 120 000 conferrals of Australian citizenship — but we must never lose sight of the fact that we are dealing with individual people, all of whom have hopes, needs and aspirations for themselves and their children. Indeed, it is in relation to the department's clients who have arrived in an irregular way by sea, and where Australia's law and policy requires their detention in one form or another until their claims for refugee status are processed, that we must especially not lose sight of this simple fact.

I implore you in your modelling work to not lose sight of this. No-one can fail to be moved by stories of migrants to Australia: for instance, the story of the *Dunera* boys, named after the ship that brought them to these shores. They were, in the main, German-born Jews who fled to England during the 1930s to escape the Nazi regime and who were then interned in Hay and Tatura during World War II as enemy combatants. A large number of them went on to give tremendous service to this country, including, as many of you would know, Fred Gruen. From a similar time we should also not forget Heinz Arndt, another Nazi refugee, who was interned in Canada during the war. Heinz made his way to Australia in 1946 to take up a post in the Economics Department at the University of Sydney before, like Fred, enjoying a long and distinguished career at the Australian National University.

More recently we have the story of Hieu Van Le, who arrived in Darwin as a Vietnam boat person in 1977, and who is now the Lieutenant Governor of South Australia. In government, we have seen the impact and contributions of migrants or refugees on Australia, and need only look at several members of Cabinet, including our Prime Minister.

Australia does a great job in settling and integrating migrants, then reaping additional benefits as the next generation moves into adulthood. The second generation of Gruens in Australia includes two remarkable economists: David in the

Treasury, and Nicholas, who served as an Associate Commissioner in the Productivity Commission in the second half of the 1990s.

Now you might well say that highly selective stories like these are deliberately intended to tug at your emotions. I know that your scientific training makes you impervious to these. But we have seven million stories, the sum of migrants who have settled in Australia since the Department of Immigration was founded in 1945. Now, *that* constitutes data.

The OECD finds that second-generation migrants in Australia outperform children of Australian-born parents in the triennial PISA tests, after taking account of socioeconomic status and other factors. The only other OECD country in which this holds true is Canada.

There is another aspect to the *migrants as people* issue that I want to address. In the Commission's primer last year, it reprises its 2006 findings that the gains from migration mostly flow to migrants themselves, with only a modest increase over time in community living standards.

In response, one might ask: what's wrong with migrants capturing a good chunk of the benefits so long as it promotes a more efficient allocation of resources?

This is *smart* economics, improving efficiency and, at the same time, the welfare of those who come. Of those who joined our population last year, more than half came from developing countries. At heart, the migration story is the pursuit of a better life. People migrate to succeed, not to fail.

Now, of course, we want to avoid the negative selection effects that some researchers in the United States have found. That is *precisely* why, in Australia, we run an orderly migration program and overlay a selective migration policy on top of the choices would-be migrants make. We have solid evidence that this approach delivers considerable benefit. To take just one example, 91 per cent of women who recently came to Australia as permanent skilled migrants found employment in the year in which they arrived, more than double the rate for women who came as the spouse of an Australian partner.

Our bias to skilled migration adds to participation and, there is good reason to believe, also to productivity. I know that this is contested territory among economists.

In my dealings with migrant communities I find there is an intrinsic value to diversity. I do not mean by this the pleasure we derive from dining out in local Mongolian or Ethiopian restaurants, or the exotic shows and football we are

exposed to on SBS. These have greatly enriched our lives, for which, as a boy raised in Toowoomba, I am only too grateful!

What I mean by the value of diversity is richer even than this: migrants bring with them new and different ways of doing things. They transfer knowledge, they promote innovation, they are entrepreneurial, and they open up trade channels. This raises our sights or, as you might have it, pushes out our production possibility frontier, benefiting us all.

Last month the Government released its new multicultural policy, *The People of Australia*, which squarely states that our multicultural composition is at the heart of our national identity and is intrinsic to our history and character. The inclusiveness of access to Australian citizenship, with its common and shared rights and responsibilities for all Australians, whether born here or overseas, is central to our successful and diverse society.

We find ourselves at odds with countries in Europe that are abandoning multiculturalism, including Germany and the United Kingdom, despite the shared demographic challenges we face. We in Australia make immigration and multiculturalism work for us because we *expect* new migrants to become one of us and, because we afford them this degree of respect, by and large they do.

We have a rich history of supporting multiculturalism. In fact, today we celebrate Harmony Day, which acknowledges the cohesive and inclusive nature of our nation, and promotes a united and culturally diverse society. This year over 6500 events were registered — the largest number in the history of Harmony Day.

However, a prerequisite for success in settling and integrating new migrants is public confidence in our ability to manage the migration program.

I want to make it quite clear I am not saying that migration is an end to be pursued in its own right. Setting the overall level of migration is the proper provenance of the government of the day, and ought to be set with regard to need. This leads me to the topic of economic models.

To be blunt, population projections have a relatively poor track record over the past decade, with none adequately allowing for the sharp growth in migration in recent years. This unanticipated growth has given rise to some public disquiet about our ability to absorb new migrants into our population in a sustainable way. We could do a better job at modelling, in particular by adapting them to allow that under a more demand-driven approach the level of migration will respond to economic conditions in Australia.

It is indeed interesting to observe the ANZ Bank's monthly report tracking the change in job vacancies, as in percentage terms it matches almost exactly the change in applications for temporary skilled worker visas.

The Economic Analysis Unit in my department has found that around a quarter of the increase in the labour force participation rate over the past decade — at a time when the Commission was projecting a *decrease* — is due to the inflow of young migrants.

As economists, you ought not to be surprised that migration is, to a very large degree, an economic phenomenon. There are an estimated 215 million people living abroad, just over 3 per cent of the world's population. Both numbers are steadily rising. I see this phenomenon as the third phase of globalisation, following the opening up of capital and of trade markets.

The pressures that have given rise to more people on the move — employers seeking out specialist skills, people seeking out opportunities for a better life, lower transportation costs, IT platforms that allow people to source information cheaply, ageing populations in advanced countries and large populations of young people in developing countries — all look set to continue for some time. Nation states need to accommodate this movement. Those that do so best are likely to benefit the most.

Our demographic die has been cast. For the next half-century, as a result of an ageing population, migration will occupy an ever greater share of our population growth and, in all likelihood, an ever greater share of our population. As economists from Adam Smith through to Paul Krugman have told us, the gains from trade are mutually beneficial. We need migrants as much as they need us. Long may we be an attractive place to come.

13 Background paper¹

Each year, the Productivity Commission hosts a Roundtable on policy issues that would benefit from a frank exchange of views among senior people from government, business, academia and community groups.

This background paper was prepared for attendees at the 2011 Roundtable to facilitate discussion by setting out a framework for exploring the different dimensions of ‘population policy’. It draws on earlier research by the Commission on the impacts of migration and population ageing and its analysis of recent trends.

- Section 1 of the paper briefly describes recent population growth and its sources.
- Section 2 sets out a broad policy framework with the remaining sections addressing the potential impacts of population growth and the policy implications.
- Section 3 provides an overview of the impacts of population growth on economic growth.
- Section 4 discusses some implications for urban and environmental amenity.
- Section 5 concludes with a brief discussion of the potential social and cultural impacts.

13.1 Introduction

Australia’s population growth is a topic that has attracted a great deal of public attention and has often polarised opinion. The issues and arguments have evolved over time, reflecting changing public priorities. Concerns early in our history about building critical mass and national defence capabilities, have given way over time to concerns about achieving environmentally and socially sustainable economic growth. This is the focus of The Sustainable Population Strategy, currently being developed by the Australian Government.

The recent policy debate has sometimes been clouded by misconceptions and misperceptions about the pace, characteristics and implications of population

¹ A preliminary version of this paper was distributed at the Roundtable.

growth. Late last year, the Commission released a research paper, ‘Population and Migration: Understanding the Numbers’ (PC 2010a), which sought to explain and ‘demystify’ population-related statistics and recent trends. This paper builds on the brief final chapter of that publication, exploring further the potential impacts of population growth and the policy implications. The paper is primarily taxonomic, setting out a framework for policy development. It does *not* advocate specific policy answers or approaches.

Overview of population growth in Australia

At the end of June 2010, Australia’s resident population was estimated by the ABS to be around 22.3 million people, roughly 0.3 per cent of the world’s population (ABS 2010a).

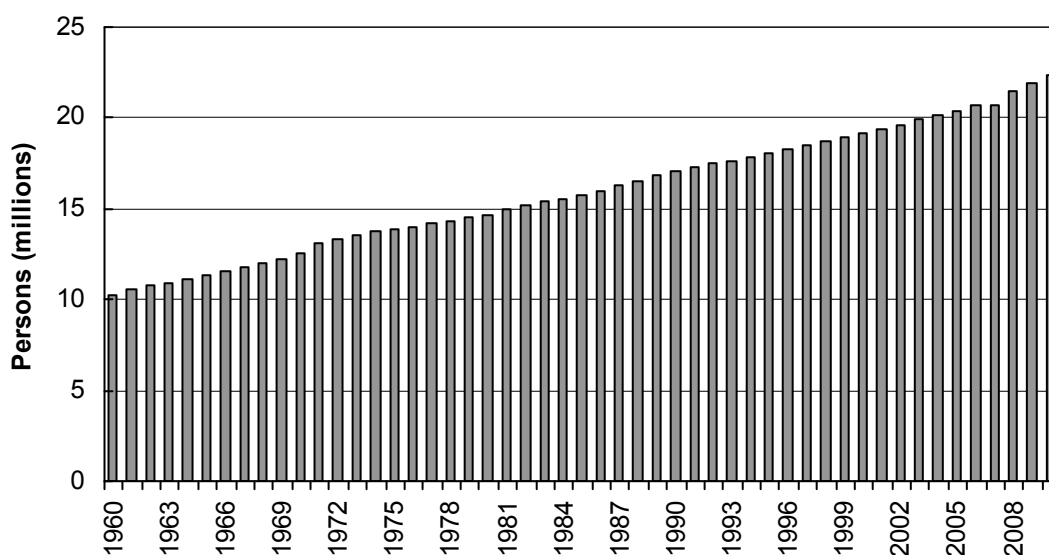
Australia’s population has increased at an average annual rate of approximately 1.6 per cent since 1960, more than doubling in size by 2010 (figure 1). This is a higher growth rate than for most OECD countries. While annual population growth has always fluctuated from year to year, it has accelerated in recent years, reflecting increased immigration (PC 2010a).

In 2008-09, the population grew by more than 2 per cent — a rate last experienced in the 1960s — before declining in 2009-10 to 1.7 per cent (still above the long-term average).

If the trends of recent years continued, Australia’s population would increase significantly in the coming decades. The most recent Intergenerational Report projected a population of nearly 36 million in 2050 in its base case scenario (Treasury 2010).²

² Population projections are not forecasts and depend on the underlying assumptions about components of population growth. Nevertheless, the low-case projection of 30.2 million by 2050, presented in the Report, illustrates an expectation that Australia’s population will grow significantly in the next 40 years.

Figure 13.1 **Australia's population has doubled since 1960^{a,b}**



a End of June. **b** Prior to 1971, population estimates were based on the number of people present in Australia. Data from 1971 onwards use the estimated resident population.

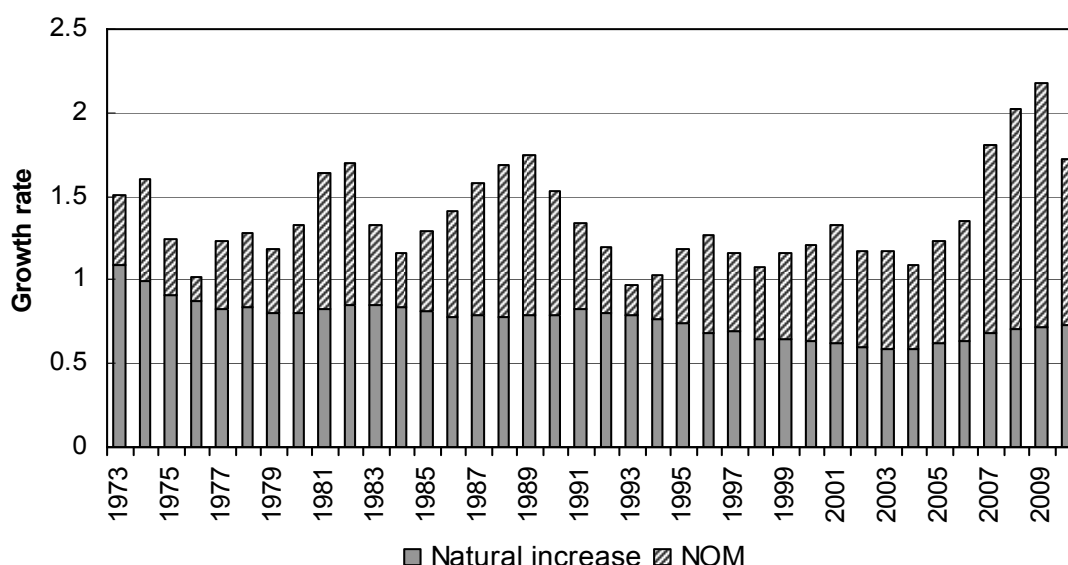
Data sources: ABS (2008, 2010a).

Immigration is the largest component of Australia's population growth

From the First Fleet onwards, migration has always been an important part of this country's development. In 2010, one quarter of Australia's population were born overseas.

Net overseas migration (NOM) — the difference between immigration and emigration — is now the largest contributor to population growth. Between 1971-72 and 1979-80, NOM (not counting descendants of immigrants) accounted for about 30 per cent of population growth on average. In the four years to 2009-10, this proportion increased to almost 65 per cent, reflected in the rapid acceleration in population growth itself (figure 2).

Figure 13.2 The contribution of migration has increased^{a,b}



^a The natural increase and NOM presented here do not necessarily sum to the total change in population in each year. Since 1976-77, the ABS has recorded this as the 'intercensal discrepancy', which is excluded from the figure. ^b The methodology for estimating NOM changed in 2006-07, and the data before and after that year are not strictly comparable (see PC 2010a for further discussion).

Data sources: ABS (2008, 2010a).

Two caveats

Population policy = immigration policy?

Migration is the component of population growth that is most amenable to influence by government policy, albeit with some constraints (such as limited influence over the rate of emigration).

The Australian Government controls permanent entry into Australia and establishes the conditions under which temporary movements into Australia are permitted. A range of visas are issued under various programs administered by the Department of Immigration and Citizenship.

For some migration streams, the Australian Government can either:

- set a 'planning level' for the maximum number of entrants, and/or
- set various criteria for visa applicants that serve to restrict the type and number of entrants (PC 2010a).

In contrast, natural increase is much more difficult to influence through policy. For example, government policy promoting medical research or subsidising diagnostics and treatment, might increase longevity and reduce death rates, but the effects would be indirect and uncertain. And the effect of targeted policies adopted in Australia to increase fertility, such as the Baby Bonus, is likely to have been modest (Lattimore and Pobke 2008).

Therefore, the population debate is essentially a debate about the size and composition of migration flows, and about the best policies to manage these and the consequent domestic impacts. Policies to influence the natural increase component of population growth are, accordingly, not dealt with here. However, many of the population pressures arising out of migration also arise in the context of natural growth. Consequently, some of the potential impacts and policy implications raised in this paper have wider relevance.

Population policy and ageing

Over the past century, Australia's population has been progressively ageing, and this trend is set to continue into the foreseeable future. Between 1901 and 2009, the proportion of people aged 65 and over has grown from 4 to 13 per cent, and according to the Treasury's latest projections, it is set to reach nearly 25 per cent by 2050 (Treasury 2010). An ageing population results in a higher dependency ratio and poses significant economic and fiscal challenges (PC 2005). This has led some to call for changes to population policy, and notably immigration policy.

However, several studies, including some undertaken by the Commission, indicate that policy-induced changes to Australia's population are unlikely to significantly affect the ageing trends.

Improvements in longevity are the major cause of population ageing over the long run. In recent projections, Commission researchers estimated that an increase in the long-run total fertility rate from 1.85 to 2.10 births per woman — even if it could be achieved — would be associated with only a 1.1 percentage point reduction in the proportion of people aged over 65 by 2051 (Lattimore and Pobke 2008).

Similarly, substantial increases in the level of net overseas migration would have only modest effects on population ageing and the impacts would be temporary, since immigrants themselves age. The Commission has estimated that an increase in annual net migration from 150 000 to 300 000 would lower the proportion of those aged 65 or over by less than 3 percentage points by 2044-45. As an illustration of the challenge, the Commission showed that delaying an increase in the dependency

ratio³ by 40 years would require a net migration-to-population ratio of 3 per cent per year, leading to a population of around 85 million by 2044-45 (PC 2005).

It follows that, rather than seeking to mitigate the ageing of the population, policy should seek to influence the potential economic and other impacts (PC 2005).

13.2 Policy framework

Good policy formulation entails three broad steps:

- clarification of objectives
- identification of the nature of the problem that policy needs to address
- assessment of the pros and cons of relevant policy alternatives.

Objectives for policy

Clearly formulating the objective is fundamental to the development of any policy.

The recent population debate reveals that multiple objectives are often attributed to ‘population policy’ (box 1). This is a consequence of the range and distribution of potential impacts of population growth, and the different priorities that participants attach to them.

However, most of the specific objectives can be seen as subordinate to the overarching policy objective of maximising the wellbeing of the Australian community. ‘Wellbeing’ itself is a multi-dimensional concept. It can be broadly defined as the overall satisfaction that members of the community derive from the various aspects of their lives and the social and physical environment in which they live (PC 2010b). This includes economic aspects that can be readily measured, such as incomes, but also other key influences that are not necessarily captured in market transactions, but are important determinants of quality of life. Those include (for example) the impacts on environmental and urban amenity, and social and cultural impacts.

³ Defined as the number of those aged 15 and under and those aged 65 and over, as a proportion of the number of people aged between 15 and 64 inclusive.

Box 1 Views differ on appropriate objectives of population policy

... Australia needs a growing population to develop our economy and to, of course, offset the issues that will arise as outlined in the intergenerational report about an ageing population. (Graham Bradley, Business Council of Australia, ABC 2010)

... using migration as a stimulus for the economy is short-sighted, unsustainable, and ultimately counterproductive ... ACF [Australian Conservation Foundation] supports the adoption of a national population policy that commits Australia to ... stabilisation of the Australian population and resource use at levels that are precautionary and ecologically sustainable. (ACF 2009, pp. 3–5)

Population numbers in Australia should be based on what science tells us is the ecological carrying capacity of Australia ... (Doctors for the Environment Australia 2011, p. 2)

Some people fear foreigners will take their jobs. Green zealots believe humans are a blight on the landscape. Others confuse immigration and border protection and some think our cities are too crowded, blaming migrants whenever they are stuck in traffic. What they all ignore is immigrants are part of the solution to our problems. More migrants, especially ones with job-generating skills, expand the economy, helping to pay for improved infrastructure. (*The Australian*, editorial, 28 January 2011)

Government reviews and studies of long-term ponderings on population have a place, but gabfests are no substitute for political decision-making and action. The obvious solution has been neglected for too long – build and develop regional Australia. (Jock Laurie, NFF 2011)

Social divisions are becoming more obvious and geographically concentrated. Non-English speaking background areas are being overlain by an ethnic identification. These trends will intensify if the population grows ... (Birrell 2010a, pp. 11–12)

The pursuit of this high level objective, accordingly, requires a recognition of trade-offs between its various subordinate objectives.

What ‘community’ in community wellbeing?

A threshold issue is *whose* wellbeing should be the focus of Australian policy? This is generally understood to be the Australian community existing at the time when a policy is being considered, since the responsibility of a government is primarily to its constituents.

The approach of focusing primarily on the existing Australian community would encompass future generations. It also would not completely disregard prospective immigrants. The welfare of Australians who are recent arrivals may be affected by the wellbeing of other potential immigrants seeking to immigrate through the family

reunion program. And developed countries such as Australia have a humanitarian obligation to assist refugees.

However, widening the policy-relevant population beyond this would soon become unmanageable and, ultimately, self-defeating, given the virtually unlimited global stock of prospective migrants. Clemens, Montenegro and Pritchett (2008) estimated that migrants from 42 developing countries to the United States raised their earning power by between 100 and 1500 per cent (with a median increase of 300 per cent).

While the objective is to promote the wellbeing of the community as a whole, the distribution of positive and negative impacts across society is also important. This has both equity and efficiency implications. A policy that imposes significant costs on a particular group in the community may also reduce social cohesion and lead to political resistance.

Sustainability and community wellbeing

In developing a Sustainable Population Strategy, the meaning of ‘sustainable’ requires clarification. Its original definition, derived from the Brundtland Report (UN 1987) is ‘development which meets the needs of current generations without compromising the ability of future generations to meet their own needs’. In practice, the concept has proven elusive and sometimes contentious. A strong (environmental) interpretation would require that the present generation does not draw down any non-renewable natural resources. A weaker interpretation would allow some substitution between different natural resources and between natural and manufactured capital, as long as the overall wellbeing of future generations is not compromised. A wellbeing objective is, therefore, more consistent with a weaker interpretation of sustainability. A community living at subsistence level could maintain all natural resources in a pristine state and satisfy the strong interpretation of sustainability, yet would be far from maximising its wellbeing (Guest 2010).

The Issues Paper for the Sustainable Population Strategy (DSEWPC 2010), in recognising that sustainability has environmental, social and economic dimensions and that there are trade-offs between them, has essentially adopted a definition consistent with the community wellbeing objective.

Impacts of population growth

Population and migration growth can generate a range of positive and negative impacts and, consequently, are simultaneously presented as a solution to existing problems and as a source of new ones.

In broad terms, additional people of working age increase the supply of labour and some forms of capital, contribute to government fiscal balances, and may contribute some domestic, community or broader social services in the non-market sector. They and their dependants are also consumers of various goods and services, including those delivered outside of markets (for example, subsidised government services and the services of some not-for-profit organisations). Thus, population growth has implications for wages, capital returns, and the prices of and/or access to goods and services in the market and non-market sectors.

An additional complication is that the extent of some of the impacts can be affected by existing economic ‘distortions’ (such as government policies leading to an inefficient allocation of resources, and the various unaddressed externalities, such as adverse environmental impacts), and would be mitigated if these were reduced.

Population growth can also lead to positive or negative social and cultural impacts on the incumbent population.

For the purpose of this paper — and consistent with the approach taken in the Issues Paper for the Sustainable Population Strategy — the impacts are discussed under three broad headings:

- Economic growth impacts — these relate primarily to effects on (measured) income and its components, and on non-market government services. While complex, these impacts are the easiest to identify and measure.
- Environmental and urban amenity impacts — resulting from physical and natural constraints and their interaction with population growth. These impacts sometimes fall outside of markets, and in some cases population growth can magnify existing problems. The impacts include urban infrastructure and space constraints, natural resource constraints and the effect of population growth on biodiversity and pollution.
- Social and cultural impacts — positive and negative impacts on amenity that also tend to be outside of the influence of markets.

Though separately identifiable, it is important not to view these categories in isolation, since some impacts are interlinked. For example, negative impacts on economic growth might lead to adverse social effects, while urban congestion and some types of environmental problems might limit growth in incomes, in addition to affecting other aspects of wellbeing. Such interlinkages can have important implications for policy — policies targeting specific impacts may have positive or negative collateral effects.

Policy taxonomy

In this area, as in others, governments have the choice of ‘proactive’ or ‘reactive’ policies. In the context of population, proactive policies are those seeking to influence the rate, composition, and geographical distribution of population growth. Immigration policy itself is a proactive policy under this definition. Regional development policies that attempt to draw population away from large cities, are another example.

‘Reactive’ (or adaptive) policies are designed to address the impacts of given population growth, rather than address that growth directly. For instance, if population growth placed additional demands on existing public infrastructure, subsequent government investment in infrastructure to meet those demands would constitute a reactive policy. A reactive approach does not necessarily imply addressing an issue after it has arisen — in some cases, policies will be able to anticipate adverse effects and may need to be implemented early, particularly if implementation takes time.

Policymakers ideally should adopt the mix of proactive and reactive policies that maximises net benefits to the community. However, choices can be constrained if some policies are infeasible due to prohibitive costs of implementation or difficulty in acquiring the necessary information. Domestic resistance to some policies may also inhibit their extent or effectiveness.

International considerations also come into play in immigration policy. For example, there are forces driving up the global supply of migrants, such as the significant income gaps between source and host countries, but also forces limiting the supply of particular migrants to Australia, such as the competition between many developed countries for migrants with certain skills. Australia also has international humanitarian obligations that influence part of its migrant intake.

13.3 Population growth and the economy

As noted, immigration is both the largest source of population growth in Australia and the one most amenable to policy influence. This section explores the potential impacts and policy implications of immigration for (measurable) economic growth.

By increasing the size of the population, immigration necessarily increases the aggregate size of the economy. A larger population means an increase in total labour supply. And immigrants add to the demand for goods and services, supplied both privately and by governments. As a result, immigration will raise aggregate

output and income, as measured by gross domestic product (GDP) and gross national income (GNI).

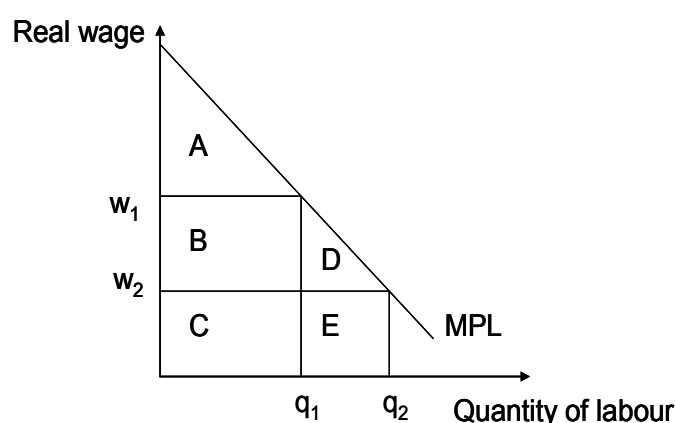
However, of more interest are the effects on economic wellbeing of the community, which have more to do with changes in the *per capita* GDP (or GNI) of the incumbent population.

The impacts on GDP per capita will be determined by several factors (PC 2010a).

In a seminal theoretical article, Berry and Soligo (1969) used a simple but instructive framework to demonstrate that immigration would reduce the wages but increase the aggregate incomes of incumbents, by raising the return on the capital stock they hold (box 2). The analysis used a simplified picture of the world with no economies or diseconomies of scale, no economic distortions, and no redistribution policies. Nevertheless, it offers an important insight into the major mechanisms driving the impacts. Subsequent theoretical and empirical research (discussed below) has allowed for various complicating factors (such as foreign ownership of capital and different types of labour) to evaluate the likely effects of migration in finer detail.

Box 2 The Berry-Soligo model of migration impacts

The seminal theoretical analysis of the effect of immigration on the real income of incumbents was presented by Berry and Soligo (1969), who built on earlier work on international movement of factors of production by MacDougall (1960). This analysis predicts that, when an economy's capital stock is owned by the populace, immigration will lead to an increase in the aggregate income of incumbents.



(Continued next page)

Box 2 (continued)

The curve MPL represents labour demand. Before immigration, the employment level is q_1 and incumbent workers earn a real wage w_1 . GDP is given by the area $A+B+C$, of which $B+C$ represents aggregate wages, and A , returns to capital. Immigration increases the employment level to q_2 and leads to a lower real wage w_2 . The new, larger GDP is given by the area $A+B+C+D+E$, of which E shows the aggregate wages of migrant labour. The aggregate wages of incumbents decline by area B , while returns to the capital held by incumbents increase by area $B+D$. Thus, immigration leads to an increase in aggregate incumbent income (triangle D — the so-called ‘migration surplus’) and some redistribution of income from labour to capital owners.

The model makes several simplifying assumptions, including:

- only one type of labour and one type of capital
- fixed stock of capital (this assumption is more valid in the short run)
- no foreign ownership of capital and, hence, no loss of income to overseas residents
- no economies or diseconomies of scale arising from population growth
- perfect competition and no economic distortions (in particular, wages adjust to accommodate increased supply of labour)
- no fiscal redistribution to compensate losers.

Sources: MacDougall (1960); Berry and Soligo (1969); Parmenter (1990); Peter and Verikios (1995).

Labour market effects of immigration

Immigration can affect the labour market and, ultimately, wages through the labour force participation and labour productivity channels.

Effect on per capita labour force participation

The effect of immigration on hours worked per head of the population can be decomposed into changes in:

- hours worked per employed person
- the employment rate (ratio of workers to people in the labour force)
- the participation rate (ratio of people in the labour force to the working-age population)
- the population of working age (15 to 64 years), as a proportion of the total population (PC 2006a).

In its study on the *Impacts of Migration and Population Growth* (PC 2006a), the Commission found that immigrants worked slightly longer hours than their Australian-born counterparts — averaging an additional half hour per week — and had also increased the proportion of the population of working age. Three-quarters of the foreign-born population were of working age in 2006, whereas this applied to only two-thirds of the Australian-born population (ABS 2010b). Similarly, of the permanent migrants admitted in 2009-10, 76 per cent were of working age (DIAC 2010).

Labour force participation and employment rates depend on the characteristics of migrants. For example, they have been higher:

- for those on skilled visas than other visa categories (a compositional effect): skilled visa holders arriving between 2000 and 2004 had a participation rate of 82 per cent in 2004, much higher than that of migrants entering on family or humanitarian visas (58 per cent and 40 per cent respectively) (PC 2006a)
- with the length of time spent in Australia (‘assimilation effect’) (Cobb-Clark and Chapman 1999).

In addition, more recent arrivals were found to have higher employment rates than those who migrated earlier — for example, 83 per cent of skilled migrants arriving in 2005 were employed within six months, compared with 76 per cent of those arriving in 1999-2000 and 63 per cent of those arriving between 1993 and 1995.⁴ This effect has been attributed, at least in part, to changes in migration policy (Cobb-Clark 2004; Richardson and Lester 2004; Birrell, Hawthorne and Richardson 2006; Hawthorne 2007). The increasing focus on skilled migration and an increase in the waiting period for access to government transfer payments from six months to two years (except for humanitarian entrants) are likely to have contributed to these effects.

The above patterns suggest that, over time, particularly with selective migration policies favouring skilled entrants, additional migrants will make a positive labour supply contribution. (This assumes no ‘crowding-out’ effect on the employment of incumbents — an assumption supported by Peri (2009)). In previous modelling, the Commission (2006a) projected that a permanent 50 per cent increase in skilled migration would increase hours worked per capita by 1.2 per cent over the base case, over a 20-year period.

⁴ Based on data on primary applicants for Independent skill stream visas from the Longitudinal Survey of Immigrants to Australia.

Effect on labour productivity

Labour productivity is typically defined as the real value of output (measured in terms of GDP per hour worked). It is affected by the characteristics of workers themselves (such as education and work experience, but also motivation) and the environment in which they work, such as the amount and quality of capital and technology, institutional and regulatory arrangements, and other external factors (PC 2006a).

Immigrants' own productivity

In 2001, immigrant workers, including recent arrivals, earned more per hour than Australian-born workers, on average (PC 2006a), indicating that immigrants have contributed to higher productivity in the Australian economy.

Most of this difference is attributable to differing composition — immigrants are typically older, more highly educated and more likely to live in capital cities than Australian-born workers. However, even after controlling for age, education, location, industry and English language ability, immigrant workers still earned about 2 per cent more per hour on average in 2001 than Australian-born workers.

Despite this, some migrants may not be optimising the use of their productive skills in the jobs they hold post-migration. Shah and Burke (2005) reported evidence of 'downward occupational mobility' among immigrants in the initial period after arrival, particularly for more highly educated immigrants. According to the authors, employment outcomes tend to improve with time spent in Australia — the assimilation effect — but there is potentially 'considerable' loss of productivity through lack of utilisation of their skills in this early period.

Effect on the productivity of incumbent workers

All else equal, where migrants are 'perfect' substitutes for local workers, migration would tend to have a negative impact on the local workers' productivity and wages, by virtue of increasing the supply of labour relative to other factors of production (Grossman 1982).

In the case of skilled immigration, which is currently the focus of Australian migration policy, an increase in skilled immigrants would tend to reduce the returns to skilled labour and so reduce the incentives for incumbents to undertake education and training to improve their skills (Harris and Robertson 2007). However, this

effect may be muted to the extent that skilled migrants induce skill-biased technical change.⁵

On the other hand, immigrants might actually increase the productivity of some incumbent workers, through some form of complementarity in production (Ottaviano and Peri 2006a; Bodvarsson, Van den Berg and Lewer 2008). One example of such productivity gains to incumbent workers is where migrants address short-term labour shortages that could not be readily resolved in the domestic labour market. Other potential sources of complementarity include cultural differences or differences in professional skills or practices.

In a US study, Ottaviano and Peri (2006b) found that, on average, US-born citizens were more productive in a culturally diversified environment. (However, the positive effects were stronger when only second and third generation immigrants were considered, suggesting that some integration into the host society was required.) Bellini et al. (2008) applied the methodology adopted in that study to 12 European Union countries and also concluded that ethnic diversity had a positive effect on the productivity and wages of incumbents. Niebuhr (2006), using German data, reported evidence of a positive impact of cultural diversity on research and development activity, the strongest effect being found among highly educated workers.

Illustrating a different type of complementarity, Epstein, Kunze and Ward (2009) found that the presence of immigrants in highly skilled workplaces discouraged shirking among incumbent workers. Drawing on European-based survey data, they found evidence of sponsoring firms hiring highly skilled immigrants at the same wage as locals, in some cases even covering their relocation costs. The authors argued that this was a strategy by employers to encourage local workers to exert more effort on the job, spurred by a credible threat of replacement.

However, Parasnis (2010) reported recent evidence of a negative input substitution effect in the Australian labour market, using data for 1994–2001.

Adjustments in capital stock

An increase in the supply of labour relative to capital would increase the returns to capital and encourage increased investment in capital. In the long run, this capital

⁵ Skill-biased technical change is the hypothesis that technological advances tend to favour high-skilled workers, by increasing their productivity relative to low-skilled workers and in turn, increasing their wage and employment prospects. Acemoglu (1998) argued that an increase in the relative supply of skilled workers in the labour force, led to a larger market for the development of technologies complementary to those workers.

accumulation could mitigate the wage effects of the initial ‘capital dilution’(PC 2006a).⁶

A faster rate of investment in new capital could also accelerate the adoption of new and more efficient technology, thus improving both labour and multi-factor productivity (Solow 1960).

Evidence on the net impact on wages of incumbents

Assessing the net impact of immigration on the wages of incumbent workers is an empirical matter. There is a large body of empirical work on this topic, both from Australia and overseas.

Most overseas studies, using some form of regression analysis, have found little evidence to support a significant negative effect of immigration on the wages of local workers (for example, see surveys of the US literature by Friedberg and Hunt 1995 and Borjas 2003; and of European-based studies by Kerr and Kerr 2011). Two exceptions, both based on US data, are Borjas’ (2003) study, which found significant negative wage and employment effects of immigration; and Aydemir and Borjas (2011), who argued that measurement error in the immigration share of the population was responsible for misleadingly low estimates of the negative wage effect of immigration.

In the Australian context, research results differ according to the methodology employed. Studies based on regression analysis have found no significant negative wage effect, and in some cases, even a positive effect (Shan, Morris and Sun 1999; Addison and Worswick 2002; Islam and Fausten 2008; Bond and Gaston 2010). However, two studies using a general-equilibrium simulation approach — and assuming perfect substitutability of locals and immigrants within a given skill group — found a negative wage effect for competing skilled incumbents (PC 2006a; Harris and Robertson 2007). More recently, in a multi-country study using a general equilibrium simulation method, and utilising migration data for 1990–2000, Docquier, Ozden and Peri (2010) estimated that in Australia, immigration has had a negative effect on high-skill wages, a positive effect on low-skill wages, and a small positive effect on average wages of incumbents overall.

⁶ The initial capital dilution would be mitigated by migrants contributing capital on their arrival. The Commission estimated that this contribution is relatively small, even for skilled migrants — around \$25 000 per arrival (2001 dollars) over the first 18 months of residence (PC 2006a).

Other potential effects on average incomes of incumbents

Beyond the direct effects of immigration on incomes through the labour market, there may be other economic impacts such as changes in output mix and production technologies, economies of scale, and effects on public fiscal balances.

Changes in output composition and technology

As well as adjusting through changes in wages and employment, markets may respond to an increase in immigration through changes in the composition of output or the technologies used in production.

An increase in predominantly skilled immigrants could be expected to shift production towards goods and services that are relatively intensive in this type of labour. It might also contribute to an increase in the use of production technologies that are more intensive in the use of such skills, such as information technology and automation. Adjustment through these channels may mitigate negative effects on wages and employment (Dustmann, Glitz and Frattini 2008).⁷

Peri (2009) found in the United States that immigration had reduced the share of highly educated workers in the labour force, and promoted production technologies that were less capital intensive and more intensive in the use of unskilled labour. The reverse might apply in Australia's case, given the higher skill profile of immigrants to Australia in contrast with those arriving in the United States. Thus the inflow of relatively highly-skilled migrants here could induce some form of skill-biased technical change.

In the Commission's earlier study (PC 2006a), the largest industry expansions from a 50 per cent increase in skilled migration were projected to be in the construction industry (due to increased demand for housing and infrastructure) and in the health and education sectors (associated with the influx of labour with the required skills). The study projected smaller increases in agricultural and mining sectors, due to a decline in the terms of trade,⁸ and the increase in the cost of capital that affected capital-intensive industries.

⁷ Gaston and Nelson (2000) argued that in an economy with multiple goods and inputs, an increase in the endowment of one input would affect only the output mix; relative wages would only change with a change in relative output prices.

⁸ A projected decline in the terms of trade follows from an increase in exports (due to the expansion in total output from increased immigration) and the assumption in the model that export prices fall with an increase in export volume.

Potential benefits arising from economies of scale

Economies of scale arise where an increase in the quantity of output produced results in a less than proportionate increase in total costs of production — a declining average cost across some range of output. At the national level, a larger population may allow for the exploitation of potential economies of scale in the production of goods and services, at least those that are not exported.⁹

Key examples of the potential for scale effects at the national level are the provision of government services — particularly those with a large fixed cost component, such as defence and public administration — and the provision (private or public) of infrastructure such as transport and communications (PC 2006a). Economies of scale might also benefit cultural goods and services, such as the media, academic research, sporting competitions, literature and the arts (Garnaut 2002).

Garnaut (2002) argued that due to Australia's population size, geographic size and remoteness, the scale effects of immigration on infrastructure and public services provision were large enough to offset any negative wage effects for incumbents, even if immigrants had a similar age-skill profile to the existing resident population.

It is difficult to be definitive about the economic benefits from the scale effects of immigration, both because the scale effects alone are difficult to ascertain and because the role of immigration in the exploitation of such effects is unclear. Furthermore, economies of scale are unlikely to exist without limit, and in some cases, *diseconomies* of scale may be a more likely outcome of population growth (see section 4). A survey of the literature (PC 2006a) found inconclusive evidence of the aggregate impact of scale economies, and as a result did not include scale effects in its assessment of the likely impact of an increase in skilled migration.

Economies of density

One visible, and often remarked, effect of immigration has been an increasing concentration of the population in urban areas.

A greater geographical density of economic activity may generate several benefits. One of these arises from firms having proximity to larger labour markets, reducing hiring costs and promoting a finer division of labour (Fujita, Krugman and Venables 1999; Glaeser 1998). Having a large number of geographically

⁹ In the case of goods that are exported, the market is global, and an increase in Australia's population through migration will simply relocate some of that market to Australia. While unlikely to generate economies of scale, this may still create other benefits, such as a reduction in transport costs.

concentrated firms also provides workers with alternative employment opportunities and generally improves labour mobility.

Agglomeration could also support the production of specialised inputs that cannot be traded, or only at very high cost (such as legal and telecommunications services, maintenance and repairs) and promote a greater degree of specialisation in the production of consumption goods, leading to improved choices for consumers (Fujita and Thisse 2002).

It can also allow co-located firms to benefit from informational spillovers (Krugman 1991), as firms located in proximity to each other can transmit ideas and information more rapidly, facilitating innovation and improved production techniques. Such spillovers may also arise at the individual level, due to the acceleration in the rate of interaction between people (Glaeser 1998).

Ciccone and Hall (1996) found that density was a significant factor in explaining productivity differences between US states, and that a doubling of population density was associated with a 6 per cent increase in average labour productivity. Ciccone (2002) reported similar results for the United Kingdom and selected European countries.

While there are undoubted benefits from agglomeration, there are also a number of costs associated with rising urban density that imply some limits to growth and an optimal city size, even in the absence of distortions (such as inadequately priced resources). These are discussed in section 4.

Fiscal impact of immigration

Immigrants can affect public fiscal balances positively, by contributing to direct and indirect taxes and user charges, and negatively, as they add to demand for government services and transfers. A survey of the empirical literature by Withers (2003a) found a generally positive net contribution of immigration to public fiscal balances.

Access Economics (2008) conducted a detailed analysis of the impact of permanent immigrants to Australia on the Commonwealth Government budget balance over a 20-year projection period. The study projected that the total migrant intake in 2006-07 made a net contribution of \$536 million in the first year, and \$1.34 billion in 2025-26 (in 2007-08 prices).

Unsurprisingly, skill-stream migrants were estimated to make the strongest fiscal contribution of all visa categories, as a result of their younger age profile, high labour force participation and incomes, and initial exclusion from various

government benefits. Migrants entering on Family (Partner) visas were also estimated to make a positive net fiscal impact in each of the 20 years after their arrival (Access Economics 2008). This is perhaps attributable to what Withers (2003b) has called ‘assortive mating’, where spouses often match their sponsoring partners’ skills. By year 20, all permanent migrants were estimated to be making a positive fiscal impact, with the exception of Family (Parent) categories.

Previous findings on the impact of immigration on average incomes of incumbents

The Commission (2006a) estimated that a 50 per cent permanent increase in the level of skilled immigration would lead to a modest increase in average incomes within 20 years. However, most of the gains would generally accrue to migrants themselves, with the average income of incumbents declining by 0.1 per cent relative to the base case scenario.

- This result captured the projected effects of immigration on labour supply (both in terms of size and distribution among sectors), the indirect effects on labour demand and changes in output composition, and the resulting changes in relative wages and returns to capital from these impacts.
- However, it did not capture all of the effects on net fiscal balances from increased immigration, and did not include scale or agglomeration effects.

In its Third Intergenerational Report, the Treasury (2010) estimated that an increase in net overseas migration of 30 000 per year (over a base-case scenario of 180 000) would be associated with a 0.02 percentage point increase in per capita real GDP growth over the projection period (to 2049-50). This amounts to a difference of 0.86 percentage points in the level of GDP per capita in 2050 compared with the base case scenario. The report estimated that higher migration would lead to labour force growth being 0.13 percentage points per year higher than in the base case (culminating in a labour force 5.2 percentage points larger by 2050) and a lower dependency ratio. However, there was no estimate of the effect on the incomes of the incumbent population.

Effect of ‘economic distortions’

Any community benefits that result from immigration (and population growth generally) may be reduced, and any losses exacerbated, where there are distortions present in the economy. The possibility of ‘immiserising growth’ — a concept that first appeared in international trade literature to describe how economic growth can reduce real incomes due to distortions affecting trade — can also apply to population growth (box 3).

Box 3 Distortions can produce ‘immiserising’ growth

The possibility of ‘immiserising growth’ was first raised by Bhagwati (1958, 1968), whose earlier study presented the specific case of an economic expansion in a small open economy leading to a decline in its terms of trade. In the extreme scenario, the loss from the deterioration in terms of trade outweighed the gains from the growth in economic activity. Following H.G. Johnson’s (1967) demonstration that in the presence of a tariff, an expansion of the protected sector would lead to a misallocation of resources, Bhagwati (1968) developed a general case of immiserising growth, caused by distortions in the economy. In the general case, the gains that would otherwise be achieved through economic growth could be outweighed by the losses imposed by the distortions in the economy after the economic expansion.

The possibility of immiserising growth due to economic distortions has also been discussed in the literature on the impacts of population growth. For example, Clarke and Ng (1993) presented a framework in which economic distortions, such as unpriced externalities or unassigned property rights, determined whether population growth increased or reduced the incomes of incumbents.

Sources: Bhagwati (1958; 1968); H.G. Johnson (1967); Clarke and Ng (1993).

In the context of immigration, growth in the supply of labour and an increase in demand in the presence of distortions could result in misallocation of resources to the point where welfare losses outweigh the gains from the expansion. (In an extreme case, even aggregate indicators, such as GDP, may decline following the growth in population.)

The distortions that unduly impede the allocation of resources might be policy-induced, such as industry protection or labour market regulation (discussed below). They may also take the form of externalities, such as unpriced urban and environmental impacts (discussed in section 4).

The outcomes may be manifest in lower real incomes. However, in many cases, particularly where there is a gap between market prices and non-market or ‘social’ values, GDP per capita may still rise, but there may be a decline in the other components of community wellbeing.

Distribution of the impacts across the incumbent population

There will generally be both winners and losers from immigration, in terms of the effect on individual incumbents’ incomes.

Distributional effects on incumbents' labour market returns

The effect of immigration on average wages and employment may mask significant variations for particular groups of workers. Incumbent workers whose skills are most similar to those of immigrants are the most likely to be negatively affected, whereas those in other skill or occupation groups may benefit from complementarity and increased scarcity as aggregate demand rises.

Dustmann, Frattini and Preston (2008), using UK data, found evidence that immigration can have a negative effect on incumbent workers' wages in the parts of the wage distribution in which they are more densely concentrated, but a positive effect on wages for workers in other parts of the wage distribution.

In the Commission's (2006a) simulation, incumbent workers who are more highly educated and in professional occupations were projected to experience a modest reduction in wage growth from an increase in skilled immigration, while other groups experienced increased wage growth. For example, real wages of professionals were projected to be 7.3 per cent lower, at the end of the projection period. Conversely, the real wages of tradespeople and labourers were projected to rise — by 4.1 and 3.2 per cent respectively.

As discussed earlier, adjustments in capital stock, output composition or production technologies might mitigate the negative impacts of skilled migration on skilled incumbent workers.

If immigrants to Australia were highly concentrated in particular segments of the labour market, incumbent workers in those industries could be affected disproportionately in terms of wages and employment. However, Parasnis (2006) found no evidence of labour market segmentation or concentration among particular occupations or industries in Australia. Rather, the overall employment distribution was found to be similar for migrants and incumbents, for both industries and occupations, and over time (for the period 1994 to 2000).

Other distributional effects

As discussed earlier, an increase in the supply of labour relative to capital stock would increase returns to capital. This would benefit its owners, particularly owners of urban land and/or housing, and owners of business assets producing non-tradeable goods and services.

In Australia's case, ownership of each of these asset classes is now relatively widespread within the population (Garnaut 2002; Withers 2003a) especially as a result of compulsory superannuation. The predominant potential 'losers', according

to Garnaut (2002), might be existing residents on lower incomes who live in large cities and do not own their homes (thus being likely to bear the increased rental costs associated with higher urban land values). In addition, about 28 per cent of Australia's capital is foreign owned (ABS 2006) — so some of the redistributed income would flow to foreigners.

Government fiscal policy is also important to the distribution of the costs and benefits. The positive contributions to fiscal balances made by most migration streams suggest that incumbents could be net beneficiaries. However, there could be winners and losers depending on how any fiscal dividends are distributed (Chiswick 2011).

Economy-wide, immigration could be expected to affect the output mix and production technologies, driven on both the supply side (in response to the increase in labour supply) and the demand side (due to an increase in aggregate demand and any differences in the tastes and preferences of immigrants). Such changes would likely have implications for relative prices of consumption, investment and government goods and services. Individuals and groups may in turn be made better or worse off as a result of these price changes, depending on their preferences and consumption patterns.¹⁰

Policy implications

Proactive policy options?

The available evidence suggests that highly-skilled migrants with good English proficiency and high levels of education tend to raise average real incomes and fiscal balances. In Australia, the highest participation and employment rates, incomes and net fiscal contributions have been found among employer-sponsored visa categories.

In a comparison of the labour market outcomes of migrants to Australia and Canada, Richardson and Lester (2004) found evidence that policy design has been an important determinant of the labour market performance of migrants. Comparing Australia and Canada, both of which have a focus on skilled migration, the authors considered that the following aspects of Australian migration policy contributed to superior outcomes:

¹⁰ However, as illustrated by Clarke and Ng (1993) when prices rise as a result of increased demand, producers are made better off to a greater extent than existing consumers are made worse off.

-
- stringent assessment of migrants' qualifications before permitting entry
 - a younger upper age limit (45 years compared with 54 years in Canada) and mandatory vocational level English proficiency for skill-stream migrants
 - restrictions on access to social security benefits in the first two years.

Hawthorne (2007) also concluded that the mandatory pre-entry assessment of credentials and English skills, and modifications to the 'points' system, contributed to the improvement in the employment outcomes of successive cohorts of immigrants arriving between 1993 and 2005.

While there is evidence of potential economic benefits of controlling the composition of migration streams, the optimal size of the migrant intake is less clear and requires consideration of other influences. For example, if large potential benefits from unexplored economies of scale could be demonstrated, the ideal number of immigrants would be higher than otherwise. But this would have to be balanced against any environmental or social diseconomies or disamenities. Even with optimal resource pricing and user charges for environmental resources, urban amenities, infrastructure and so on, there might still be significant distributional issues associated with large increases in the population (see section 4).

There might also be options at the international level for policies to increase the benefits from migration (Holzmann and Pouget 2010). For example, Australia could cooperate with source countries on matters such as:

- assessing the relevance and suitability of migrants' skills and qualifications
- harmonising occupational requirements to facilitate two-way flows of skilled workers
- facilitating information exchanges in relation to migrants' personal characteristics, both labour market related and other (such as security issues).

Reactive/adaptive policy options?

Some existing policies and institutional settings may act as impediments to the realisation of potential benefits from immigration. These may include impediments to geographic mobility, barriers to labour market entry such as occupational licensing, or protection policies that expand inefficient industries and impede the efficient allocation or re-allocation of resources.

For example, the Commission's (2006a) study found that arrangements for assessing and recognising migrants' skills were complex and sometimes led to

inconsistencies, and that potential migrants were often poorly informed about the processes. The report suggested a number of improvements, including:

- moving towards a more uniform, national approach to occupational registration and licensing
- better dissemination of information on skills assessment and recognition
- re-evaluating and possibly broadening assessment criteria so as not to artificially exclude migrants from occupations.

Shah and Burke (2005) suggested a greater role for education and training for migrants post-arrival — specifically, for the VET sector to assist in filling any gaps in migrants' job readiness, thereby increasing the likelihood of them obtaining positions that fully utilise their existing skills.

Policies influencing the incentives of migrants to gain employment also play a role. There is evidence that precluding new migrants from accessing most government social security benefits until two years after arrival (previously six months) has improved incentives to increase participation and employment among migrants (Richardson, Robertson and Ilsey 2001; Hawthorne 2007). It may also have led to some self-selection among potential migrants, encouraging those who believed they had stronger employment prospects (Richardson, Robertson and Ilsey 2001).

Evidence presented earlier indicates that changes in output mix and production technology are important channels of adjustment to an influx of migrants, and could mitigate wage and employment impacts on incumbent workers. Distorting subsidies and taxes and regulatory regimes that discriminate among technologies can impede such adjustments and reduce the potential benefits from immigration. In the extreme scenario, they can lead to the immiserising growth outcome, described earlier. Ultimately, however, removing regulatory burdens and distortions is not just an issue for migration, but a general policy strategy to enhance economic performance.

A larger population could also lead to pressures for increased investment in infrastructure, coming both from the supply side (driven by increased labour input and resultant increases in production) and the demand side (as population growth increases demand for housing, transport, communications, utilities and so on). Insufficient investment in infrastructure may result in constraints on the productive capacity of the economy as well as exacerbating urban disamenities, such as through congestion (discussed in the next section).

As well as creating a regulatory environment conducive to private investment, there might be a role for governments to anticipate the needs of a growing population by increasing public infrastructure investment. However, as discussed previously (PC 2010a), population and immigration growth have historically been, to some

extent, unpredictable — not just in terms of total numbers but in composition and geographic distribution. As a result, any large-scale public investments run the risk of being based on the ‘wrong’ predictions about population growth. Implementing infrastructure projects in stages can allow adaptation as needs become clearer.

13.4 Urban amenity and environmental issues

Population growth may be associated with adverse urban and environmental outcomes. For example, higher levels of population could lead to increased traffic congestion and pollution, and to concerns about natural resource constraints.

In many cases, however, population growth will not be an exclusive (and in some cases, not even the main) cause of such problems. Some may be existing or emerging problems — arising out of persisting market failures or policy distortions — which are magnified by population growth. The conventional policy prescription is to address market failures and policy distortions at their source. However, cost and implementation difficulties may preclude theoretically optimal policies. More importantly, this approach by itself will not always lead to an improvement in the *wellbeing of incumbents*. According to Pincus (2011, p. 47):

... optimal policy adaptations to a larger population ... do not completely remove the disadvantages of bigness. What these policies can do is to make the best of a bad lot, that is, constrain the negative externalities to their optimal sizes — they do not guarantee that the existing population will not suffer a disadvantage.

Thus, proactive population policies may also need to be considered, either in combination with, or in place of, policies that target the sources of spillovers or policy distortions.

Urban amenity and infrastructure constraints

Some of the primary impacts of population growth are felt in the cities. The number of people living in Australia’s major cities has continued to increase over time, and roughly three-quarters of the population now reside in the 18 cities with 100 000 or more residents (PC 2010a).

If the benefits of increased population density and size (discussed in section 3) were unlimited, cities might be expected to grow infinitely. However, this clearly does not apply in practice. Although there are benefits from agglomeration — what Fujita, Krugman, and Venables (1999) refer to as ‘centripetal forces’ — there are also costs associated with urban development, which the same authors refer to as ‘centrifugal forces’. The latter could be conceptualised as the diseconomies of scale

arising out of population growth. The consequences may not always manifest themselves in lower measured incomes, but would nevertheless have real implications for community wellbeing.

Congestion

The extent to which population growth leads to transport congestion depends in part on:

- the location of population growth
- current levels of supply of roads and related infrastructure in particular locations
- timing of travel
- modes of travel
- city planning and traffic controls.

The presence of these factors means that population growth need not result in greatly increased levels of congestion. For example, if additions to the population occur in areas of a city that were previously thinly populated, the likelihood of significant congestion on local roads is reduced. Conversely, if a high proportion of newly added residents to a city travel by car to areas of concentrated activity, such as CBDs, during peak times, increased congestion is likely.

Congestion essentially reflects an absence of appropriate pricing signals. Where the price of road travel does not vary directly with the extent of use, additional road users impose costs on existing users. Accordingly, the full costs of road travel are not borne directly by any individual user. The failure to price this external cost means that population growth, by adding more vehicles to existing road networks, will increase congestion and its social costs.¹¹

Housing

A link is often drawn between population growth and increased house and land prices. Population growth naturally increases the demand for housing and, therefore, tends to place upward pressure on prices.

That said, an increase in prices would normally be expected to induce additional supply, moderating the impact of a change in demand. The Commission, in its inquiry into First Home Ownership (PC 2004), found that the supply of housing was

¹¹ For example, see Arnott, de Palma and Lindsey (1993) for a theoretical analysis of efficiency costs of congestion.

constrained from responding to changes in demand (from any source) over short time horizons. This is due to the time required to service lots, develop land, and construct new dwellings. In the long run, the supply of housing is more responsive to changes in price, although various supply-side factors, such as planning controls, will influence the degree of responsiveness, and these have been the subject of some criticism (PC 2011).

Residential amenity and social impacts

Population growth may also have impacts on the value of urban amenities such as aesthetics and air quality — some of which will be positive, others negative. The negative impacts tend to be most evident. For example, concentrated industrial zones and heavily used roads can be sources of heavy (air and noise) pollution. Increased population can also increase the demand for public parks and sporting facilities, the supply of which often does not increase as population grows. The construction of higher density residential accommodation in established areas can lead to a loss of canopy trees and shrubs, potentially contributing to a loss of biodiversity, and lowering the aesthetic appeal of a neighbourhood (Birrell 2010b).

There may also be other amenity impacts. Social networks in high density areas can facilitate the transmission of information about crimes, or the values that condone crime, and may thus increase criminal activity. Furthermore, social networks might be less developed in some cities, or sections of them, making crimes more anonymous, and the process of finding criminals more difficult. Accordingly, crime rates tend to be higher in large urban areas (Glaeser 1998).

Rising city populations can also have positive amenity effects. For example, Glaeser, Kolko and Saiz (2001) suggest that urban density may enhance the facilitation of interpersonal relationships that urban residents consider desirable, and that individuals who live in high density residences socialise more with their neighbours.

Policy implications

To a large extent, the specific impacts of population growth on urban congestion, water, housing affordability, and other aspects of urban amenity depend on institutional arrangements. Policy approaches unrelated to controlling population growth are available in each of the areas identified above. Nevertheless, in some cases, proactive policies limiting population growth might also need to be considered.

Proactive policies?

Limiting the migrant intake might be seen as an obvious response to addressing any urban amenity and infrastructure pressures. However, this approach would also have wider consequences and would require consideration of all of the costs and benefits of immigration. On the use of population policy to influence housing demand, the Commission has previously stated:

... the Commission is not suggesting that immigration policy should be used to influence housing demand or affordability. Immigration policy obviously needs to be determined by broader considerations. (PC 2004, p. 68)

Where population growth is not the main contributor or source of the problem, or where there are relatively low-cost ways of reducing the impacts, a reactive policy might be preferable.

Another proactive strategy occasionally employed in Australia involves regional development programs to promote a more ‘even’ geographic distribution of the population. For example, the 1970s saw the introduction at the Commonwealth level of the Department of Urban and Regional Development, which developed policies promoting ‘regional growth centres’. If successful, regional development policies can decrease the demand for housing and transport in cities, reducing the extent of house price rises and the severity of congestion. There may also be effects on other aspects of urban amenity, such as air quality and pollution.

In the past, however, such programs have generally not been effective in achieving their stated objectives. For example, the regional growth centres promoted by the Department of Urban and Regional Development in the 1970s failed to attain the population growth and levels initially anticipated. That said, while picking regional winners has proven difficult (and costly), there is likely to be scope for governments to remove various impediments to population mobility (box 4).

Reactive/adaptive policies?

Population growth is not the exclusive or even the main contributor to some of the impacts just discussed, many of which are likely to emerge or persist even with limited population growth.

Infrastructure supply augmentation is a key reactive policy option warranting consideration — particularly where there are no significant diseconomies of scale in the provision of additional infrastructure or services.

Box 4 Previous Commission studies on regional development

In its 1993 inquiry into Impediments to Regional Industry Adjustment, the Industry Commission (IC 1993) concluded that policies aimed generally at spreading people and industry beyond Australia's capital cities had tended to be ineffective, simply reinforcing the tendency for people to locate in areas they perceived to be the most advantageous for their purposes. For example, between 1973 and 1976, under the broad purview of the Department of Urban and Regional Development, regional development corporations were established with the objective of creating a number of 'growth centres' (12 were initially chosen). Even those regions that received the largest amounts of funding under this policy, such as Albury-Wodonga, failed to reach the population levels initially anticipated. The Department of Urban and Regional Development itself was abolished in 1976 (IC 1993).

The Industry Commission (IC 1993, 1998) also highlighted the potential pitfalls of competition between regions to attract development projects. The risk of 'bidding wars' could lead to negative-sum outcomes from the movement of activity between regions rather than increases in activity overall.

In its inquiry into the Impact of Competition Policy Reforms on Rural and Regional Australia, the Commission (PC 1999) suggested that the various levels of government could help promote regional development by focusing on areas where market forces alone were unlikely to meet the needs of regional communities. Measures the Commission indicated had the potential to be productive included assistance in the provision of information, removing impediments to development, and improving policy coordination.

Sources: IC (1993, 1998); PC (1999).

For example, while additional people can exacerbate urban water shortages and restrictions, a key issue is whether there are economically feasible but unexploited options for increasing the supply of urban water, such as recycling or allowing trade between rural and urban areas. Similarly, in the case of housing affordability, policies that affect supply may play a significant role. Richards (2009) observed that the supply of housing has not been very responsive to changes in demand in recent years, and argued that land zoning and development and approvals processes may have contributed to this. The Commission (PC 2011) has recently found that the limited responsiveness of the supply of housing to price changes can be partly explained by unduly long timeframes associated with the land supply process.

On the other hand, Arnott (1996) noted that while increasing the supply of roads and related infrastructure may be effective in some cases, in others, an increase in

road capacity can attract greater demand for road travel or generate other perverse outcomes.¹²

Efficient pricing of infrastructure services is another option. For example, more cost-reflective pricing could induce consumers to allocate water to its most highly valued uses, and moderate consumption when water becomes more scarce. Variable prices would also convey useful information to suppliers about when to invest in new infrastructure.

Traffic congestion could also be targeted by charges that vary with the number of vehicles on the road at a particular time. In theory, such a mechanism can make travellers ‘internalise’ the additional costs they impose on other road users, and ensure that those who travel on roads during peak times are those who place the highest value on doing so. A number of countries have imposed user-charge schemes in some of their cities, and others are examining the feasibility of doing so.¹³ However, it is unclear whether such schemes have generated net benefits. The Commission has previously noted some difficulties associated with introducing congestion charges, including the implementation costs and the potential distributional consequences (PC 2006b). The latter in particular, could be an important consideration — even if the congestion charge is efficient, it would still have adverse consequences for those incumbents, who have to pay more for using the road (taking into account the time saving) or are forced to change their travel arrangements. And while those incumbents could *in principle* be compensated out of the revenue collected through the congestion charging scheme, this is unlikely to be feasible in practice.

Ultimately, the distribution of the impacts of population growth may play an important role in the choice between reactive and proactive policies. Unless the supply of the relevant infrastructure or service can be augmented at relatively low cost, population growth could result in a decline in the wellbeing of incumbents even if the problem is resolved ‘efficiently’ but at a higher cost.

¹² Supply augmentation will be less effective in reducing congestion when the demand for road travel is highly sensitive to price of travel (including time) — an increase in road capacity will then be absorbed by an increase in road use. Other perverse effects may arise when there is an alternative transport mode (such as public transport) operating under economies of scale. An increase in road capacity could then lead to a decline in the quality of public transport or an increase in the costs (Arnott 1996).

¹³ For example, Singapore has operated a cordon charging scheme since 1975, a congestion charge was introduced in central London in 2003, and user charges have also been introduced in central parts of cities such as Rome, Milan, and Dubai (BITRE 2008).

Environmental spillovers and resource constraints

The negative environmental impacts arising out of population growth can be broadly categorised as:

- unsustainable use of natural resources, many of which are finite and either non-renewable or slow to regenerate — these impacts are generally global in nature, because most natural resources are traded in world markets
- impacts associated with greater levels of activity, such as pollution and greenhouse gas emissions — these impacts can be local (such as some types of pollution) or global (for example, greenhouse gas emissions)
- loss of biodiversity — these impacts can be local or global.

At the heart of arguments that the Earth has exceeded the number of human inhabitants that it can ‘sustainably’ manage is concern that resources are finite, and will be exhausted, or at least significantly depleted, with the addition of yet more people to the world’s population. For example, Ehrlich and Holdren (1971) argued that global population control was necessary ‘if there is to be a future worth having’ (p. 1216). Measures, such as ‘ecological footprint’ and ‘ecosystem services’ are often employed by advocates of lower population growth and these typically indicate that environmental sustainability is declining with population growth (Cork 2011). Most of the arguments are by no means new, with antecedents dating back at least to Malthus (1798).

It is instructive to consider the more pessimistic arguments of authors such as Ehrlich and Holdren (1971) in the context of observed human history. At the time of Malthus, the population of the world stood at slightly less than 1 billion, compared to nearly 7 billion today (US Census Bureau 2011). Over these two centuries, far from declining as predicted by Malthusians, living standards and life expectancies have increased to an unprecedented extent (D. G. Johnson 2001; Acemoglu 2008).

Concerns about exhaustion of natural resources often ignore or downplay the role of markets, particularly the effect of scarcity-induced increases in the relative price of a resource. Increasing prices lead to substitution away from scarce resources, while encouraging greater efficiency in their use (for example through recycling) and innovation (Baumol 1986; Weil 2005; PC 2006a).

Among others, Romer (2006) has demonstrated that although falling quantities of natural resources and land *per worker* can reduce the rate of growth in per capita income, this need not happen under technological progress.

An additional consideration in the context of environmental problems arising out of global population growth, is the relatively small size of Australia’s population and

economy. Currently Australia accounts for 0.3 per cent of the world's population. In 2009, this country accounted for around 0.7 per cent of the world's population growth and 1.6 per cent of global GDP (World Bank 2010), and in 2008, it accounted for 1.3 per cent of global carbon dioxide emissions (IEA 2010). Furthermore, much of Australia's population growth is attributable to immigrants, who were obviously consumers and contributors to carbon dioxide emissions in their countries of origin (though typically at lower levels).

Global natural resource impacts of population are sometimes presented as a local issue. A typical example is 'food security', where some have argued that the encroachment of residential development on agricultural areas, coupled with increased national demand for food, would reduce Australia's capacity to feed its population (see Sobels et al. 2010, for example). However, even if local production proved inadequate, agricultural products are traded internationally, and any excess local demand could normally be addressed through trade. More importantly, Australia is a significant net exporter of various food items — over the past five years the annual surplus in our food trade has averaged nearly \$17 billion (DAFF 2010).

In an Australian context, one of the main areas of environmental concern stemming from population growth is pollution. Arguments to constrain the rate of population growth rest on the reasoning that additional people lead to additional use of transportation, electricity, and other activities that reduce air and water quality and otherwise pollute the environment. However, population growth may also bring benefits in the remediation of 'legacy' environmental problems. For example, there may be economies of scale in cleaning polluted sites, where the costs of clean up are fixed but the number of potential beneficiaries of the improved environmental outcome increases (Clarke et al. 1990).

Other environmental concerns relate to loss of biodiversity — that is, declines in the degree of variation in life systems within a particular ecosystem. Such losses may occur due to additional land required for residential, commercial or industrial use, reducing natural habitat, or because reductions in air and water quality impede the ability of flora and fauna to survive.

Policy implications

While the effectiveness of population policies by any one country to reduce global environmental impacts may be limited, such policies can more effectively target local environmental impacts, such as pollution (excluding carbon dioxide emissions).

However, the relationship between pollution and population growth is neither direct nor exclusive. For instance, pollution levels are, in part, a function of the type of production activities undertaken by an economy. Holding population and all other characteristics fixed, a community that is more highly oriented towards the production of services and other skill-intensive activities is likely to result in less pollution than a community that relies heavily on manufacturing production. Population policy may, therefore, be an indirect and blunt approach to remedying pollution.

The economic literature posits that, regardless of whether pollution problems are localised or diffuse, the best policy instruments are those that target pollution-generating activities (Nordhaus and Tobin 1973). Fisher and Ridker (1973) stated:

Direct attacks on pollution problems clearly dominate over reductions in population and economic growth as a means for obtaining a cleaner environment ... (pp. 83–4)

Some have argued that controlling population growth — a proactive stance — is necessary to slow the loss of biodiversity (Gowdy and McDaniel 1995). However, loss of biodiversity is a complex problem, and sources and remedies may be many and varied. For example, reducing population growth (broadly speaking) can decrease the demand for fish, reducing pressure on fish stocks and, therefore, make it less likely that a particular species will become endangered or extinct. However, potentially the more important driver of fish stock depletion is a failure to assign property rights. In the absence of ownership, a ‘tragedy of the commons’ may arise, with individuals exploiting the resource to excess, since a large proportion of the costs of doing so are imposed on others.¹⁴ Improving the relevant institutional arrangements could moderate the pressures on the natural resource arising from population growth.

Somewhat different policy issues are raised by the loss of biodiversity that results from expansion of land used for residential, industrial, and commercial purposes. If population growth results in the utilisation of previously unexploited land, ecosystem damage may result. However, the ability to utilise existing land more intensively — for instance, by building high density residential accommodation — and the ability to obtain more agricultural output from given parcels of land, can mitigate the need for expansion. Also, to the extent that there is some private demand for, and provision of, various environmental services, population growth can increase the aggregate demand for those services. Clarke and Ng (1993) argued

¹⁴ Weil (2005) notes that if assigning property rights is not feasible, an alternative is to give control of the resource to an authority that can take account of the costs that users of the resource would impose on each other in the absence of clearly defined property rights.

that population growth leads to increased demand for wilderness areas and hence greater provision of areas likely to sustain diverse ecosystems.

13.5 Social and cultural impacts

Immigration can generate both positive and negative social impacts through several channels. Some of those have already been identified. They include the distribution of impacts on measured incomes and the effects of a growing population on urban amenity. Another important source of impacts is the changing ethnic and cultural make-up of Australia's population.

Ethnic and cultural diversity can involve both benefits and costs for the existing population, in production, consumption and, ultimately, wellbeing. As discussed in section 3, ethnic diversity may be a source of complementarity between migrant and incumbent workers, leading to higher productivity and wages of incumbent workers. Cultural and ethnic diversity may lead to other spillover benefits, such as greater creativity and innovation, expanded consumer choices, improved ability to trade and interact with other countries, and social amenity benefits from living among people from other cultures. Also, to the extent that some of the current incumbents are themselves recent immigrants, continued immigration could deliver various benefits to them through family reunion and the preservation and growth of their ethnic community within Australia.

However, some Australians may not like to live in a multicultural or even multi-racial environment, if they perceive this as conflicting with or endangering their own cultural values and institutions ('way of life'). Increased cultural diversity could then decrease the wellbeing of incumbents.

There is some international research showing that public opposition to immigration is often motivated more by racial or cultural factors than by explicit economic self-interest, such as concerns about competition in the labour market or constraints on government welfare benefits (Dustmann and Preston 2004; Hainmueller and Hiscox 2010). In Australia, survey evidence indicates that public attitudes to migrants vary significantly depending on the migrant's country of origin. Also, negative attitudes to migrants tend to be more prevalent among Australians living in areas with a high concentration of immigrants (Marcus and Arnup 2010).

Such concerns are often dismissed as manifestations of racism of the less educated members of society. For example, a series of surveys conducted by Professor Kevin Dunn in recent years to gauge the prevalence of racist attitudes around Australia, used attitudes to cultural difference as one of the proxies for racism (Dunn 2003). While some of the opposition to migration is no doubt racially motivated (and there

is empirical evidence that public tolerance of migrant groups does increase with education), conflating all opposition to ethnic and cultural diversity under that label risks ignoring legitimate concerns about the functioning of Australian society. While this is a sensitive, and to many, controversial area, it can not be ignored by public policy.

Diversity and social capital

One of the most common grounds for resistance to immigration from ethnically and culturally diverse sources is that it could undermine the social capital of the existing population.

Robert Putnam (2000) defined social capital as ‘social networks and the associated norms of reciprocity and trustworthiness’. The concept is multidimensional and extremely difficult to measure. Typically, proxies are employed, including:

- measures of interpersonal trust and support for government welfare programs
- engagement in various voluntary activities requiring cooperation, such as community associations and clubs, and participation in charity.

Social capital can generate benefits to society through many channels including by:

... reducing transaction costs, promoting cooperative behaviour, diffusing knowledge and innovations, and through enhancements to personal well-being and associated spillovers. (PC 2003, p. viii)

In recent years, much international research has been conducted by sociologists, political scientists and economists on the impact of ethnic diversity on social capital. Though differing in methodology and country of focus, most of the studies conclude that ethnic diversity reduces social capital. For example, Costa and Kahn (2002) summarised 15 empirical studies conducted between 1997 and 2002 that looked at various dimensions of social capital in different countries across different time periods, and concluded that social capital was greater in ethnically and culturally homogeneous societies. Coffé and Geys (2005) deployed a composite measure of social capital, incorporating all of the proxies mentioned above in an analysis of the impacts of ethnic diversity in Belgian municipalities, finding that municipalities with greater ethnic diversity had lower levels of social capital.

In a comprehensive study that examined evidence from the United States, Putnam (2007) found that in the short to medium run, immigration and ethnic diversity ‘challenge social solidarity and inhibit social capital’. In particular, in areas of greater diversity, respondents exhibited:

- lower confidence in local government, local leaders and the local news media

-
- less expectation that others will cooperate to solve collective action problems
 - lower likelihood of working on a community project
 - lower likelihood of giving to charity or volunteering
 - fewer close friends and confidants
 - less happiness and lower perceived quality of life.

In the Australian context, Leigh (2006) found that diversity weakened interpersonal trust and support for a welfare state.

Migration and crime

Fear of increased crime appears to be an important factor behind the public resistance to some groups of migrants (Marcus 2010; Collins 2003). There is a paucity of studies about the linkages between ethnicity and crime, and the data are sketchy. Some studies that found declining social capital as a result of ethnic diversity included crime rates as one of the indicators (for example, Coffé and Geys 2005). International evidence suggests that, in aggregate, migrants are no more likely to commit a crime than the native born. However, some ethnic groups have been found to be over-represented in crime statistics (Wortley 2009).

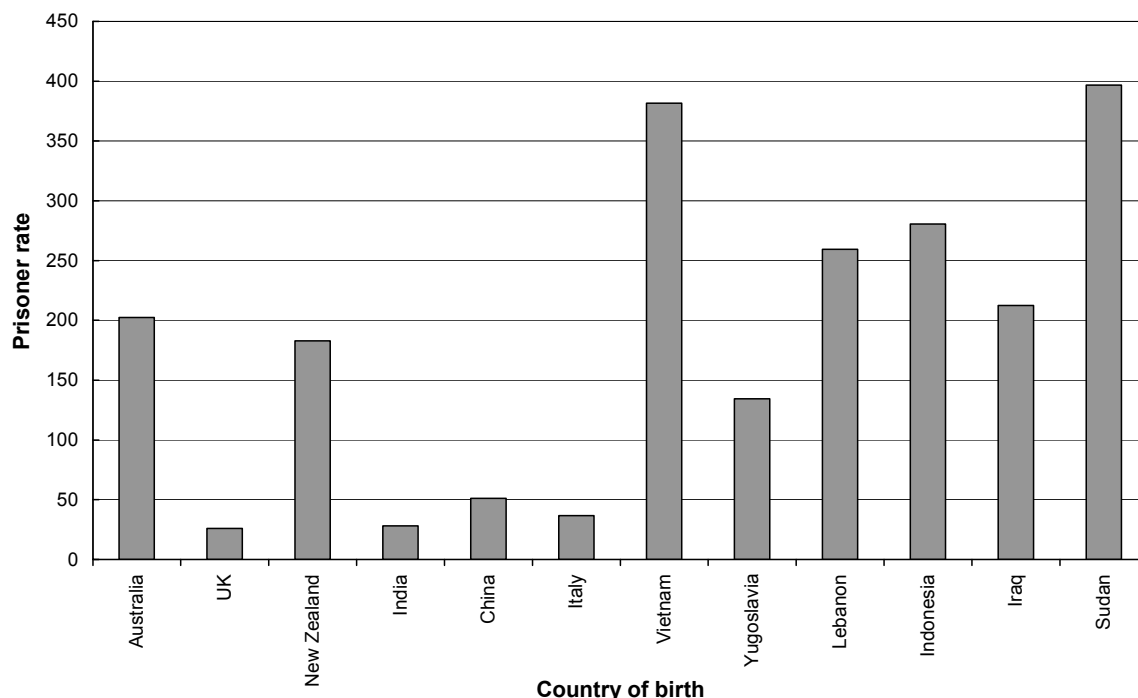
Recent ABS statistics show that overall, in 2010, first generation migrants were less likely to be incarcerated for a criminal offence than those born in Australia.¹⁵ However, there is significant variability across countries of origin and types of offences, and migrants from some countries appear to be over-represented in Australia's prisons (figure 3).

Caution needs to be exercised when drawing conclusions from these types of data. It has been argued that other variables such as socio-economic status, education levels and the outside environment are often stronger determinants of incarceration (with corresponding implications for policy) (Mukherjee 1999). Also, crime rates attributable to particular ethnic groups may decline over time and be lower for second generation migrants (Neighbour 2011). And given that the migration policy levers involve controlling the number and type of visas issued, rather than the number of entrants from particular countries, breaking down migrant incarceration statistics by visa types held by the prisoners (or on which they entered Australia), may be more relevant. However, such data are not publicly available.

¹⁵ However, the data for those born in Australia are distorted by the high incarceration rates of Indigenous Australians.

Figure 13.3 Prisoner rates vary by country of birth

Prisoner rates per 100 000 of Australia's resident population born in that country, at 30 June 2010



Data source: ABS (2010c).

A more recent concern among the Australian public is the scope for migration to contribute to a rise in ethnically or religiously motivated extremism and increased risk of terrorism. International survey data indicate that 20 per cent of respondents in Australia felt that ethnic diversity eroded the country's security, placing Australia at the higher end of surveyed countries and above the United States (Marcus 2010).

Opinion on the evidence for a linkage between migration and extremism and its policy implications is sharply divided. Some researchers have argued that this problem is small or non-existent in Australia, having been exaggerated by the media. They suggest that where it exists, it relates to minorities within immigrant communities, and that the most effective and equitable remedy involves utilising existing legal institutions (Carrington, McIntosh and Walmsley 2007). Others have argued that the threat of terrorism is significant and attributable to identifiable groups (notably, radical Islamists) that operate internationally. In this case, it is argued that existing legal institutions are inadequate for addressing the threat, and hence, there is a potential for proactive migration policy to play a role (Moore 2010).

Trade-offs between the costs and benefits of diversity?

It is virtually impossible to quantify the costs and benefits of ethnic diversity and the Commission is not aware of any studies that have successfully attempted to do so. Some researchers have adopted largely qualitative methods to conclude that on the basis of past Australian experience, the benefits have outweighed the costs (for example, Carrington, McIntosh and Walmsley 2007). And over the past 30–40 years, Government policy has clearly evolved in the direction of promoting greater ethnic and cultural diversity (NMAC 1999).

In a conceptual sense, the important question for future policy is how the benefits and costs to the existing population compare *at the margin*, and what trade-offs arise as diversity increases. For example, if the marginal social benefit of diversity declines for each additional migrant (for instance due to declining marginal product of ‘ethnic capital’), while the marginal social cost increases, this would suggest that there is some ‘optimal’ ethnic mix at any point in time. (The optimal mix may also vary over time.) Related questions are whether the marginal costs and benefits differ for particular types of migrants; how these are affected by the rate of intake; and whether they can be influenced by reactive policies. There is little guidance in the existing literature on these questions. However, research on the determinants of social, cultural and economic integration of migrants could help inform policies to reduce the potential for adverse social impacts of migration.

Determinants of integration

There is a growing body of literature examining the integration paths of migrants and the outcomes. Broadly speaking, the integration process is determined by:

- pre-migration characteristics of the individual, which are a key determinant of a migrant’s resources and constraints
- preferences and incentives of the migrant
- the host country environment, which influences both the incentives and the constraints on the migrant *and* adaptation or attitudes within the existing population.

Pre-migration characteristics of migrants

Several studies of migration to European countries and the United States suggest that pre-migration characteristics of migrants play an important role in integration. In particular, the following factors have been identified as influential to varying degrees:

-
- age at entry — migrants who arrive at a young age are more likely to assimilate or integrate (Constant, Gataullina and Zimmermann 2006a)
 - educational attainment — the likelihood and extent of integration tends to increase with education levels (Constant, Gataullina and Zimmermann 2006a; De Palo, Faini and Venturini 2007)
 - religion — non-religious immigrants tend to integrate better than religious immigrants, and Muslim immigrants tend to integrate less than other religious groups (Constant, Gataullina and Zimmermann 2006a)
 - command of the language of the destination country and ‘linguistic distance’ of the immigrant’s first language from the host language (B. Chiswick and Miller 2007)
 - reason for migration — economic migrants typically have a wider range of choice in selecting a destination than do refugees or family reunion migrants and hence tend to select countries with a closer culture to their own (Constant and Zimmerman 2005). Temporary migrants are less likely to commit to integrating than permanent migrants (Djajic 2003; De Palo, Faini and Venturini 2007).

The incentives for migrants to integrate

There are two key and potentially competing forces influencing a migrant’s decision to invest effort and resources into integrating. On the one hand, by virtue of being part of a small group that retains ethnically-specific human capital, immigrants can capture ‘gains from trade’. Examples include: works of art that draw on an immigrant’s cultural heritage; ‘ethnic’ food businesses; and immigrants utilising their knowledge of another language, as well as their social networks, to facilitate cross-border trade. Not adjusting to the culture of the host country can increase migrants’ costs of transacting and reduce their employment prospects.

The balance of incentives will differ for individual migrants. However, most researchers have found that at least some degree of social and cultural integration is desirable. For example, Constant, Gataullina and Zimmermann (2006b) explored the linkages between immigrants’ ethnic identity¹⁶ and labour market outcomes in Germany, and found that adjusting to German culture significantly improved an immigrant’s probability of being employed. In a study of the integration experiences of migrants in 16 European countries, Aleksynska and Algan (2010) found that the interplay between social integration and economic outcomes for individual migrants is complex, but that there was a positive correlation between

¹⁶ The study defined ethnic identity as a balance of social and cultural commitments between the home and destination countries.

proficiency in the language of the host country and income. Barry Chiswick (2008) found that immigrants in the United States, Australia, Canada, and Israel, who were proficient in the language, had earnings 15 per cent higher than those who were not.

The incentives of migrants to integrate may also be influenced by policy. For example, subsidies for the acquisition or preservation of ethnic capital, or policies that reduce the costs to the migrants of not integrating (such as affirmative action in the workplace) could reduce the degree of integration (Kasper 2002; Carmel Chiswick 2006; Aleksynska and Algan 2010).

Adaptation of incumbents

The social transition effort is not necessarily best undertaken by immigrants alone. The incumbent population (and its key institutions) may also benefit from engaging in some adaptation to changing ethnic and cultural influences.

Some adaptation of the local population will occur naturally over time, reflecting both the incentive to capture the various social and economic benefits from inter-ethnic contact, and the evolving composition and history of the population itself. Hatton and Leigh (2007) found that the immigrants in the more established ethnic groups in Australia tended to be more integrated socially and culturally.

Survey evidence in Australia indicates that public opposition to immigration of particular ethnic groups also declines as these groups become more established. For example, the 2010 Scanlon survey found that in 2010, only around 10 per cent of respondents opposed immigration from China and Vietnam — in contrast to more prevalent negative sentiment when migration from those countries was just beginning (Marcus 2010).

Carrington, McIntosh and Walmsley (2007) provide several examples of how aspects of Australian mainstream culture — including literature, art, cuisine, sports and other recreation activities — absorbed influences from different waves of migration.

The incentives of the incumbent community to adapt to immigration may also be influenced by policy. Generally, policies that have the effect of discouraging assimilation or promoting multiculturalism would increase the pressure on the existing population to adapt, while education programs may reduce the cost of doing so.

Adopting a longer time frame

Social integration of immigrants will generally be a slow process and some have argued that any negative impacts will be short-term phenomena, whereas the benefits from increased diversity manifest themselves in the long term and will endure. The impacts (and policy implications) thus need to be considered over long time frames.

Evidence from several studies (some of which were presented in section 3), indicates that in most cases, the longer migrants stay in a country, the more integrated they become, with second generation migrants tending to be better integrated than their parents. Data on inter-ethnic marriages in Australia (a common measure of social integration and cohesion) indicate that even in ethnic groups with the lowest proportion of intermarriage among first generation migrants, second generation migrants are significantly more likely to intermarry. For example, in the case of Lebanese men, that proportion increased from 11 to 31 per cent, while for Indian women it rose from 11 per cent to 58 per cent (Heard, Khoo and Birrell 2009). Public survey results that consistently combine support for ethnic and cultural diversity arising from past migration with opposition to current migration, provide further backing for the view that the ‘melting pot’ takes time to mature.

However, it should not be presumed that integration would *always* occur naturally over time. Some individuals or groups of migrants may become increasingly marginalised. For example, Aleksynska and Algan (2010) analysed the process of social integration of immigrants in 16 European countries and found that, in several respects, outcomes deteriorated with time and reached a low point for second generation migrants. They found that the children of migrants perceived greater discrimination from natives, experienced greater unemployment rates, had lower satisfaction with democracy, and had lower levels of trust towards others and towards public institutions, such as the government and the police, than their parents.

Policy implications

The preceding discussion has identified some potential social impacts of immigration and various factors that determine the social integration outcomes of immigrants. Many of these are already recognised and accounted for in Australia’s migration and other policies.

Proactive policy options?

A key issue concerns the desirable rate of intake, which in turn largely depends on the adaptive capacity of incumbents. Australia's migration intake has fluctuated widely. As a proportion of the existing population, it has at various times exceeded recent rates, without apparent social problems. However, in the past, policies placed a much stronger emphasis on immigrants having to integrate, relative to the multiculturalist approach of today. Hatton and Leigh's (2007) findings imply that the size and age of an ethnic community could be important — the bigger and more established the community is, the better the adaptive capacity of incumbents to a larger intake.

The importance of pre-migration characteristics for integration outcomes suggests a role for policies attuned to the composition of the migrant intake. Filtering of the migration intake on the basis of ethnicity, race or religion has been explicitly rejected by Australian Governments, and the current migration programs do not discriminate against potential migrants on that basis. However, other characteristics can be targeted by policy. In that context, the current Australian policy focus on young, well-educated immigrants with English skills is consistent with the evidence on minimising potential negative social impacts.

Another notable recent development has been the growth of temporary migration as a path to subsequent permanent residency (PC 2010a). In the face of initial information gaps confronting both prospective migrants and host societies, such 'try before you buy' approaches can act as a screening mechanism with a potential to improve integration.

Reactive policy options?

Immigrants can be assisted or encouraged to integrate — for example, most are eligible for free English language courses. Other policies can be devised that impose a 'cost' on non-integration. For example, the current restrictions on access to social security benefits in the first years after arrival provide some incentive for social integration to facilitate the entry into the labour market. Policies that make citizenship conditional on demonstrating commitment to or knowledge of the cultural or political values of the host country can also have that effect. Australia's Citizenship Test was introduced with that objective, but has inevitably attracted some criticism (for example, see Fozdar and Spittles 2009). Of relevance is that in a heterogeneous society such as Australia, it is difficult to delineate a common set of values and social norms, in anything other than very general terms. And, of course, knowledge of some high level values and norms does not necessarily equate to commitment to them.

In the United Kingdom, under the points-based citizenship probation system currently being introduced, residents can accelerate their access to citizenship by acquiring certain skills and demonstrating ‘active citizenship’, such as participating in community and civic activities (BBC 2009). Points are lost and the process is delayed for engaging in ‘anti-social activities’ and crime.

Some policies focus on adaptation by incumbents. These range from the regulatory, such as anti-discrimination and racial vilification laws, to education campaigns. The latter can be broad in coverage or specific to particular groups — for example, education of some sectors of the public service, the police and the judiciary are sometimes identified as important for facilitating migrant integration (Carrington, McIntosh and Walmsley 2007). The Australian Government also operates a Diversity and Social Cohesion Program, providing grants for community projects that seek to reduce intolerance, and facilitating the running of National Harmony Day. Whether such policies are effective is contested. In a cross-country study, Aleksynska and Algan (2010) found no correlation between the strength of the various anti-discrimination policies adopted in 16 European countries and migrant integration outcomes. Millbank (1998) cited more evidence from Europe, where, at the conclusion of a 12-month anti-racism campaign run simultaneously in several European Union countries, there was an *increase* in the number of survey respondents declaring themselves racist.

Finding an appropriate balance

Finding the right balance between the above policy approaches is the key to achieving sustainable outcomes that enhance community wellbeing. But this requires taking into account the various other considerations relating to the costs and benefits of migration outlined earlier in the paper. Research can help inform public policy by identifying, quantifying and analysing the various impacts, and those policy alternatives best equipped to address them. Nevertheless, there will always be a subjective element requiring political judgement and, ultimately, public accountability.

References

- ABC (Australian Broadcasting Corporation) 2010, ‘Business slams Coalition pledge to cut migrant intake’, 8 April, <http://www.abc.net.au/rn/breakfast/stories/2010/2867016.htm> (accessed 11 February 2011).
- ABS (Australian Bureau of Statistics) 2006, *Australian Economic Indicators, April 2006*, cat. no. 1350.0, Canberra.

-
- 2008, *Australian Historical Population Statistics*, cat. no. 3105.0.65.001, Canberra, August.
- 2010a, *Australian Demographic Statistics, June 2010*, cat. no. 3101.0, Canberra.
- 2010b, *Migration Australia 2008-09*, Cat. no. 3412.0, Canberra.
- 2010c, *Prisoners in Australia, 2010*, Cat. no. 4517.0, Canberra.
- Access Economics 2008, *Migrants' Fiscal Impact Model: 2008 Update*, Prepared for the Department of Immigration and Citizenship, April, <http://accesseconomics.com.au/publicationsreports/showreport.php?id=173&searchfor=2008&searchby=year> (accessed 14 January 2011).
- Acemoglu, D. 1998, 'Why do new technologies complement skills? Directed technical change and wage inequality', *Quarterly Journal of Economics*, vol. 113, no. 4, pp. 1055–1089.
- 2008, *Introduction to Modern Economic Growth*, Princeton University Press.
- ACF (Australian Conservation Foundation) 2009, *Policy Statement no. 51 — Population and Demographic Change*, July.
- Addison, T. and Worswick, C. 2002, 'The impact of immigration on the earnings of natives: evidence from Australian micro-data', *Economic Record*, vol. 78, no. 240, pp. 68–78.
- Aleksynska, M. and Algan, Y. 2010, 'Economic and cultural assimilation and integration of immigrants in Europe', CEPII Working Paper no. 2010-29, Paris.
- Arnott, R., de Palma, A., and Lindsey, R. 1993, 'A Structural Model of Peak-Period Congestion: A Traffic Bottleneck with Elastic Demand', *American Economic Review*, vol. 83, no. 1, pp. 161–79.
- (ed) 1996, *Urban and Regional Economics*, Volume 1 of Encyclopedia of Economics, Harwood Academic Publishers, Amsterdam.
- Aydemir, A. and Borjas, G.J. 2011, 'Attenuation bias in measuring the wage impact of immigration', *Journal of Labor Economics*, vol. 29, no.1, pp. 69–113.
- Baumol, W.J. 1986, 'On the Possibility of Continuing Expansion of Finite Resources', *Kyklos*, vol. 39, pp. 167–79.
- BBC (British Broadcasting Corporation) 2009, 'A new way to earn UK citizenship', 15 January, http://news.bbc.co.uk/2/hi/uk_news/politics/7254926.stm (accessed 8 March 2011).
- Bellini, E., Ottaviano, G.I.P., Pinelli, D. and Prarolo, G. 2008, 'Cultural diversity and economic performance: Evidence from European regions', Hamburg

-
- Institute of International Economics, Migration Research Group, Research paper 3-14, Hamburg, Germany.
- Berry, R.A. and Soligo, R. 1969, 'Some welfare aspects of international migration', *Journal of Political Economy*, vol. 77, pp. 778–94.
- Bhagwati, J. 1958, 'Immiserizing growth: A geometrical note', *Review of Economic Studies*, vol. 25, pp. 201–05.
- 1968, 'Distortions and immiserizing growth: a generalization', *Review of Economic Studies*, vol. 35, pp. 481–85.
- Birrell, B. 2010a, 'The Risks of High Migration', *Policy*, vol. 26, no. 1, pp. 8–12.
- 2010b, *Population growth and sustainability*, Pre-election Policy Unit, Parliamentary Library, Canberra.
- , Hawthorne, L. and Richardson, S. 2006, *Evaluation of the General Skilled Migration Categories*, Commonwealth of Australia, Canberra.
- BITRE (Bureau of Infrastructure, Transport, and Regional Economics) 2008, *Moving Urban Australia: Can Congestion Charging Unclog our Roads?*, Working Paper 74, BITRE, Canberra.
- Bodvarsson, O.B., Van den Berg, H.F. and Lewer, J.J. 2008, 'Measuring immigration's effects on labor demand: A reexamination of the Mariel Boatlift', *Labour Economics*, vol. 15, no. 4, pp. 560–74.
- Bond, M. and Gaston, N. 2010, 'Is the labour demand curve downward sloping for Australia?', Working paper no. 33, Bond University Globalisation and Development Centre and School of Business, January.
- Borjas, G.J. 2003, 'The labor demand curve *is* downward sloping: Reexamining the impact of immigration on the labor market', *Quarterly Journal of Economics*, vol. 118, no. 4, pp. 1335–74, November.
- Carrington, K., McIntosh, A. and Walmsley, J. 2007, *The Social Costs and Benefits of Migration into Australia*, Commonwealth of Australia, Canberra.
- Chiswick, B. R. 2008, 'The economics of language: An Introduction and Overview', IZA Discussion Paper no. 3568, Bonn, Germany.
- 2011, 'Immigration: high Skilled vs. low skilled labor?', in Productivity Commission 2011, *A 'Sustainable' Population? — Key Policy Issues*, Roundtable Proceedings, Productivity Commission, Canberra, forthcoming.
- and Miller, P. 2007, 'Computer usage, destination language proficiency and the earnings of natives and immigrants, *Review of Economics of the Household*, vol. 5, no. 2, pp. 129-157.

-
- Chiswick, C. U. 2006, 'The economic determinants of ethnic assimilation', *Journal of Population Economics*, vol. 22, pp. 859-80.
- Ciccone, A. 2002, 'Agglomeration effects in Europe', *European Economic Review*, vol. 46, no. 2, pp. 213-227.
- and Hall, R.E. 1996, 'Productivity and the density of economic activity', *American Economic Review*, vol. 86, no. 1, pp. 54-70.
- Clarke, H.R., Chisholm, A.H., Edwards, G.W., and Kennedy, J.O.S. 1990, *Immigration, Population Growth and the Environment*, AGPS, Canberra.
- and Ng, Y-K. 1993, 'Immigration and Economic Welfare: Resource and Environmental Aspects', *Economic Record*, vol. 69, no. 206, pp. 259-73.
- Clemens, M., Montenegro, C.E. and Pritchett, L. 2008, 'The place premium: Wage differences for identical workers across the U.S. border', Working paper no. 148, Center for Global Development, December.
- Cobb-Clark, D. and Chapman, B.J. 1999, 'The changing pattern of immigrants' labour market experiences', Discussion paper no. 396, Centre for Economic Policy Research, The Australian National University, Canberra, February.
- 2004, 'Selection policy and the labour market outcomes of new immigrants', Discussion paper no. 1380, Institute for the Study of Labor (IZA), Bonn, Germany, November.
- Coffé, H. and Geys, B. 2005, *Community Heterogeneity: a Burden for the Creation of Social Capital?*, <http://www.socialcapitalgateway.org/Coff%E92005b.pdf> (accessed 31 January 2011).
- Collins, J. 2003, 'Immigrant crime in Europe and Australia: rational or racialised responses?', paper presented to Conference on the Challenges of Immigration and Integration in the European Union and Australia, University of Sydney, 18-20 February.
- Constant, A., Gataullina, L. and Zimmermann, K. F. 2006a, 'Ethnosizing immigrants', IZA Discussion Paper no. 2040, Bonn, Germany.
- , Gataullina, L. and Zimmermann, K. F. 2006b, Gender, ethnic identity and work, IZA Discussion Paper No. 2420, Bonn, Germany.
- and Zimmermann, K.F. 2005, 'Immigrant performance and selective immigration policy: a European perspective', IZA Discussion Paper no. 1715, Bonn, Germany.
- Cork, S. 2011, *Ways forward in the population and environment debate*, Parliamentary Library Population paper, 13 January, <http://www.aph.gov.au/library/pubs/PEPU/PopulationEnvironDebate.pdf> (accessed 7 March 2011).

-
- Costa, D. L. and Kahn, M. E. 2002, *Civic Engagement and Community Heterogeneity: an Economist's Perspective*, <http://web.mit.edu/costa/www/costa.kahn.1.4pdf.pdf> (accessed 14 February 2002).
- DAFF (Department of Agriculture Fisheries and Forestry) 2010, *Australian Food Statistics 2009-10: ABARES Overview of the Australian Food Industry*, Canberra.
- De Palo, D., Faini, R. and Venturini, A. 2007, 'The social assimilation of immigrants', SP Discussion Paper no. 0701, World Bank, Washington DC.
- DIAC (Department of Immigration and Citizenship) 2010, *Immigration update 2009-10*, Canberra, <http://www.immi.gov.au/media/publications/statistics/immigration-update/update-2009-10.pdf> (accessed 27 January 2011).
- Djajic, S. 2003, 'Assimilation of immigrants: implications for human capital accumulation of the second generation', *Journal of Population Economics*, vol. 16, pp. 831-45.
- Docquier, F., Ozden, C. and Peri, G. 2010, 'The wage effects of immigration and emigration', National Bureau of Economic Research, Working paper no. 16646, December.
- Doctors for the Environment Australia 2011, *Population and Australia*, Position Paper, 8 February.
- DSEWPC (Department of Sustainability, Environment, Water, Population and Communities) 2010, *A sustainable population strategy for Australia*, Issues paper, Canberra, <http://www.environment.gov.au/sustainability/population/publications/pubs/issues-paper-and-appendices.pdf> (accessed 8 March 2011).
- Dunn, K. M. 2003, 'Racism in Australia: findings of a survey on racist attitudes and experiences of racism', paper presented to Conference on the Challenges of Immigration and Integration in the European Union and Australia, University of Sydney, 18-20 February.
- Dustmann, C. and Preston, I. 2004, 'Racial and economic factors in attitudes to migration', Centre for Research and Analysis of Migration, Discussion paper 01/04, London.
- , Frattini, T. and Preston, I. 2008, 'The effect of immigration along the distribution of wages', Centre for Research and Analysis of Migration, Discussion paper 03/08, London.
- , Glitz, A. and Frattini, T. 2008, 'The labour market impact of immigration', *Oxford Review of Economic Policy*, vol. 24, no. 3, pp. 477-94.
- Ehrlich, P.R., and Holdren, J.P. 1971, 'Impact of Population Growth', *Science*, vol. 171, pp. 1212-17.

-
- Epstein, G.S., Kunze, A. and Ward, M.E. 2009, 'High-skilled migration and the exertion of effort by the local population', *Scottish Journal of Political Economy*, vol. 56, no. 3, July.
- Fisher, J.L. and Ridker, R.G. 1973, 'Population Growth, Resource Availability and Environmental Quality', *American Economic Review: Papers and Proceedings*, vol. 63, no. 2, pp. 79–87.
- Fozdar, F. and Spittles, B. 2009, 'The Australian citizenship test: process and rhetoric', *The Australian Journal of Politics and History*, vol. 55, iss. 4, pp. 496–512.
- Friedberg, R. and Hunt, J. 1995, 'The Impact of Immigrants on Host Country Wages, Employment and Growth', *Journal of Economic Perspectives*, vol. 9, no. 2, pp. 23–44.
- Fujita, M., Krugman, P.R., and Venables, A. 1999, *The Spatial Economy: Cities, Regions, and International Trade*, MIT Press.
- and Thisse, J-F. 2002, *Economics of Agglomeration: Cities, Industrial location and Regional Growth*, Cambridge University Press.
- Garnaut, R. 2002, 'Immigration: Who wins and who loses', *Migration: Benefiting Australia*, Conference proceedings, Department of Immigration and Multicultural and Indigenous Affairs, Sydney, 7–8 May, pp. 131–64.
- Gaston, N. and Nelson, D. 2000, 'Immigration and labour-market outcomes in the United States: A political economy puzzle', *Oxford Review of Economic Policy*, vol. 16, no. 3, pp. 104–114.
- Glaeser, E.L. 1998, 'Are Cities Dying?', *Journal of Economic Perspectives*, vol. 12, no. 2, pp. 139–60.
- , Kolko, J., and Saiz, A. 2001, 'Consumer City', *Journal of Economic Geography*, vol. 1, no. 1, pp. 27–50.
- Gowdy, J.M. and McDaniel, C.N. 1995, 'One world, one experiment: addressing the biodiversity–economics conflict', *Ecological Economics*, vol. 15, no. 3, pp. 181–92.
- Greenwood, M.J., and McDowell, J.M. 1986, 'The factor market consequences of US immigration', *Journal of Economic Literature*, vol. 24, no. 4, pp. 1738–72.
- Grossman, J.B. 1982, 'The substitutability of natives and immigrants in production', *Review of Economics and Statistics*, vol. 64, no. 4, pp. 596–603.
- Guest, R. 2010, 'The economics of a sustainable population', Australian Parliamentary Library, Canberra.

-
- Hainmueller, J. and Hiscox, M. J. 2010, 'Attitudes toward highly skilled and low-skilled immigration: evidence from a survey experiment', *American Political Science Review*, vol. 104, pp. 61-84.
- Harris, R. and Robertson, P. 2007, 'The dynamic effects of skilled labour targeting in immigration programs', Discussion paper no. 21, School of Economics, University of New South Wales, Sydney, May.
- Hatton, T.J. and Leigh, A. 2007, 'Immigrants assimilate as communities, not just as individuals', IZA Discussion paper no. 2538, Bonn, Germany.
- Hawthorne, L. 2007, *Labour Market Outcomes for Migrant Professionals: Canada and Australia Compared*, University of Melbourne, April, http://dsp-psd.pwgsc.gc.ca/collections/collection_2010/cic/Ci64-1-2007-eng.pdf (accessed 20 January 2011).
- Heard, G., Khoo, S. and Birrell, B. 2009, *Intermarriage in Australia: Patterns by Birthplace, Ancestry, Religion and Indigenous Status*, <http://arts.monash.edu.au/cpur/publications/documents/intermarriage-report-final.pdf> (accessed 7 March 2011).
- Holzmann, R. and Pouget, Y. 2010, 'Toward an objective-driven system of smart labor migration management', *Economic Premise*, World Bank Poverty Reduction and Economic Management Network, no. 42, December.
- IEA (International Energy Agency) 2010, *Key World Energy Statistics*, International Energy Agency, Paris.
- Industry Commission (IC) 1993, *Impediments to Regional Industry Adjustment*, Report no. 35, AGPS, Canberra.
- 1998, *State, Territory, and Local Government Assistance to Industry*, Report no. 55, AGPS, Canberra.
- Islam, A. and Fausten, D. 2008, 'Skilled immigration and wages in Australia', *Economic Record*, vol. 84, no. S1, pp. S66–S82.
- Johnson, D.G. 2001, 'On Population and Resources: A Comment', *Population and Development Review*, vol. 27, no. 4, pp. 739–47.
- Johnson, H.G. 1967, 'The possibility of income losses from increased efficiency or factor accumulation in the presence of tariffs', *Economic Journal*, vol. 77, pp. 151–54.
- Kasper, W. 2002, *Sustainable Immigration and Cultural Integration*, <http://www.cis.org.au/images/stories/policy-monographs/pm-55.pdf> (accessed 15 February 2011).

-
- Kerr, S.P. and Kerr, W.R. 2011, *Economic Impacts of Immigration: A Survey*, National Bureau of Economic Research, Working paper no. 16736, <http://www.nber.org/papers/w16736> (accessed 1 February 2011).
- Krugman, P.R. 1991, 'Increasing Returns and Economic Geography', *Journal of Political Economy*, vol. 99, no. 3, pp. 483–99.
- Lattimore, R. and Pobke, C. 2008, *Recent Trends in Australian Fertility*, Productivity Commission Staff Working Paper, Canberra, July.
- Leigh, A. 2006, 'Diversity, trust and redistribution', *Dialogue*, vol. 25, no. 3, pp. 43–49.
- MacDougall, G.D.A. 1960, 'The benefits and costs of private investment from abroad: a theoretical approach', *Economic Record*, vol. 36, pp. 13–35.
- Malthus, T.R. 1798, *An Essay on the Principle of Population*, London.
- Marcus, A. 2010, Mapping Social Cohesion 2010: summary Report, Scanlon Foundation Survey, <http://www.globalmovements.monash.edu.au/socialcohesion/documents/Mapping%20Social%20Cohesion%20Summary%20Report%202010.pdf> (accessed 14 February 2011).
- and Arnup, J. 2010, *Mapping Social Cohesion 2009*, Scanlon Foundation Survey, <http://www.globalmovements.monash.edu.au/socialcohesion/documents/Mapping%20Social%20Cohesion%20Summary%20Report%202010.pdf> (accessed 14 February 2011).
- Millbank, A. 1998, 'An anti-racism campaign: Who needs it?', Current issues brief 20, Department of the Parliamentary Library, Canberra.
- Mishan, E.J., and Needleman, L. 1966, 'Immigration, excess aggregate demand and the balance of payments', *Economica*, vol. 33, no. 130, pp. 129–47.
- Moore, D. 2010, 'The threat from Islamic extremism', *Quadrant*, volume LIV, no. 11, <http://www.quadrant.org.au/magazine/issue/2010/11/the-threat-from-islamic-extremism> (accessed 14 February 2011).
- Mukherjee, S. 1999, *Ethnicity and Crime*, Australian Institute of Criminology, <http://aic.gov.au/documents/B/3/B/%7BB3B48FE3-A70B-4290-A009-BD58861CF942%7Dt117.pdf> (accessed 14 February 2011).
- Neighbour, S. 2011, 'Lack of proper support for new migrants “fuels ethnic-based crime surges”', *Australian*, 8 March, <http://www.theaustralian.com.au/national-affairs/lack-of-proper-support-for-new-migrants-fuels-ethnic-based-crime-surges/story-fn59niix-1226017322867> (accessed 8 March 2011).
- NFF (National Farmer's Federation) 2011, *Population squeeze is on: make Australia Day 2011 count*, Media Release, 25 January.

-
- Niebuhr, A. 2006, 'Migration and innovation: Does cultural diversity matter for regional R&D activity?', Hamburg Institute of International Economics, Migration Research Group, Research paper 3-1, Hamburg, Germany.
- NMAC (National Multicultural Advisory Council) 1999, *Australian Multiculturalism for a New Century: Towards Inclusiveness*, Commonwealth of Australia, Canberra.
- Nordhaus, W.D., and Tobin, J. 1973, 'Is Growth Obsolete?' in M. Moss (ed.), *The Measurement of Economic and Social Performance*, UMI, pp. 509–64.
- Ottaviano, G.I.P. and Peri, G. 2006a, 'Rethinking the effects of immigration on wages', National Bureau of Economic Research, Working paper no. W12497, August.
- 2006b, 'The economic value of cultural diversity: Evidence from US cities', *Journal of Economic Geography*, vol. 6, pp. 9–44.
- Parasnis, J. 2006, 'Segregation in the Australian labour market', *Australian Economic Papers*, vol. 45, no. 4, pp. 318–32.
- 2010, 'Estimating the relationship between immigrant and native workers in Australia: A production theory approach', *Australian Economic Papers*, March, pp. 73–85.
- Parmenter, B. R. 1990, 'The economics of immigration', *Economic Papers*, vol. 9, no. 2, pp. 39–50.
- PC (Productivity Commission) 1999, *Impact of Competition Policy Reforms on Rural and Regional Australia*, Report no. 8, AusInfo, Canberra.
- 2003, *Social Capital: Reviewing the Concept and its Policy Implications*, Research Paper, Canberra.
- 2004, *First Home Ownership*, Report no. 28, Melbourne.
- 2005, *Economic Implications of an Ageing Australia*, Research Report, Canberra.
- 2006a, *Economic Impacts of Migration and Population Growth*, Research Report, Canberra.
- 2006b, *Road and Rail Freight Infrastructure Pricing*, Report no. 41, Canberra, December.
- 2010a, *Population and Migration: Understanding the Numbers*, Commission Research Paper, Melbourne, December.
- 2010b, *Impacts and Benefits of COAG Reforms: Reporting Framework*, Research Report, Canberra, December.

-
- 2011, *Performance Benchmarking of Australian Business Regulation: Planning, Zoning, and, Development Assessment*, Draft Research Report, Canberra.
- Peri, G. 2009, 'The effect of immigration on productivity: Evidence from US states', National Bureau of Economic Research, Working paper 15507, Cambridge, United States, November.
- Peter, M. W. and Verikios, G. 1995, 'The effect of immigration on residents' incomes in Australia: some issues reconsidered', General paper G-115, Monash University, Melbourne.
- Pincus, J. 2011, 'A population policy for Australia', *CEDA Economic and Political Overview 2011*, pp. 40-49.
- Putnam, R. 2000, *Bowling Alone: The Crumbling and Revival of American Community*, Simon and Schuster, New York.
- 2007, 'E pluribus unum: diversity and community in the twenty-first century', *Scandinavian Political Studies*, vol. 30, no. 2, pp. 137-74.
- Richards, A. 2009, 'Housing Market Developments', Reserve Bank of Australia *Bulletin*, October, pp. 20–6.
- Richardson, S., Robertson, F. and Ilsley, D. 2001, *The Labour Force Experience of New Migrants*, Report prepared for Department of Immigration and Multicultural and Indigenous Affairs by the National Institute of Labour Studies, AGPS, Canberra.
- and Lester, L. 2004, *A Comparison of Australian and Canadian Immigration Policies and Labour Market Outcomes*, Report to the Department of Immigration and Multicultural and Indigenous Affairs, Canberra.
- Romer, D. 2006, *Advanced Macroeconomics*, 3rd edn, McGraw-Hill, New York.
- Shah, C. and Burke, G. 2005, 'Skilled migration: Australia', Monash University Centre for the Economics of Education and Training, Working paper no. 63, December.
- Shan, H., Morris, A. and Sun, F. 1999, 'Immigration and unemployment: new evidence from Australian and New Zealand', *International Review of Applied Economics*, vol. 12, no. 2, pp. 253–60.
- Sobels, J., Richardson, S., Turner, G., Maude, A., Tan, Y., Beer, A., and Wei, Z. 2010, *Research into the Long-Term Physical Implications of Net Overseas Migration: Australia in 2050*, Report prepared for the Department of Immigration and Citizenship, Canberra.

-
- Solow, R. 1960, 'Investment and technical progress', in Arrow, K., Karlin, S., Suppes, P. (eds), *Mathematical Methods in the Social Sciences*, Stanford University Press, Stanford, pp. 89–104.
- Treasury 2010, *Intergenerational Report 2010*, Commonwealth of Australia, Canberra.
- United Nations (UN) 1987, *Our Common Future*, Report of the World Commission on Environment and Development, World Commission on Environment and Development, New York.
- US Census Bureau 2011, 'International Data Base', <http://www.census.gov/ipc/www/idb/worldpopinfo.php> (accessed 21 January 2011).
- Weil, D.N. 2005, *Economic Growth*, Pearson Addison-Wesley, Boston.
- Withers, G. 2003a, 'Immigration economics: Concord and contestation', National Europe Centre Paper no. 65, Paper presented to conference entitled *The Challenges of immigration and integration in the European Union and Australia*, 18–20 February 2003, University of Sydney, Australia.
- 2003b, 'Core issues in immigration economics and policy', *Economic Papers*, vol. 22, no. 1, pp. 13–23.
- World Bank 2010, *World Development Indicators*, <http://data.worldbank.org/data-catalog>, Washington DC (accessed 4 March 2011).
- Wortley, S. 2009, 'Introduction. The immigration-crime connection: competing theoretical perspectives', *Journal of International Migration and Integration*, vol. 10, pp. 349–358.

A Roundtable program

2011 Productivity Commission Roundtable A 'Sustainable' Population? — Key Policy Issues

Day 1 – Monday 21 March 2011

2.00 – 2.30 pm	Coffee and registration
2.30 – 2.50 pm	Welcome and scene setting Gary Banks , Chairman, Productivity Commission
2.50 – 3.20 pm	Evolution and determinants of Australia's population Professor Peter McDonald , Director, Australian Demographic and Social Research Institute, Australian National University
3.20 – 3.35 pm	<i>Roundtable discussion</i>
3.35 – 3.45 pm	Break

Session 1	Population, productivity and participation <i>Chair: Mike Woods, Deputy Chairman, Productivity Commission</i>
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	Immigration: high skilled vs. low skilled
3.45 – 4.30 pm	<i>Keynote speaker: Professor Barry Chiswick</i> , Columbian College of Arts and Sciences, George Washington University, Washington DC Is population growth a panacea? Australian perspectives
4.30 – 4.50 pm	<i>Population growth and ageing: Professor Alan Woodland</i> , Australian School of Business, University of NSW
4.50 – 5.10 pm	<i>Population growth and the resources boom: Chris Richardson</i> , Deloitte Access Economics
5.10 – 6.00 pm	<i>Roundtable discussion</i>
6.00 – 7.00 pm	<i>Pre-dinner drinks</i>

7.00 – 10.00 pm	Dinner <i>Speaker: Andrew Metcalfe</i> , Secretary, Department of Immigration and Citizenship
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(Continued next page)

Day 2 – Tuesday 22 March 2011

Session 2 ***Limits to population growth?***

Chair: Philip Weickhardt, Commissioner, Productivity Commission

Planning sustainable cities in the 21st century

8.45 – 9.25 am *Keynote speaker: Distinguished Professor Richard Arnott, University of California, Riverside*

9.25 – 9.35 am *Discussant: Professor John Daley, CEO, Grattan Institute*

Discussant: Professor Kevin O'Connor, Melbourne University

9.45 – 10.15 am *Roundtable discussion*

Dealing with congestion efficiently

10.15 – 10.35 am **Steve Meyrick**, Group Manager, GHD Australia

10.35 – 10.45 am *Discussant: Henry Ergas*

10.45 – 11.00 am **Morning tea**

Session 2 ***Limits to population growth?***

(cont'd)

Chair: Dr Wendy Craik, Commissioner, Productivity Commission

Is decentralisation the answer?

11.00 – 11.20 am **Professor Graeme Hugo**, University of Adelaide

11.20 – 11.30 am *Discussant: Dr Larry Cook, Visiting Researcher, Productivity Commission*

11.30 – 11.45 am *Roundtable discussion*

Environmental and resource constraints: myth or reality?

11.45 – 12.05 pm **Don Henry**, CEO, Australian Conservation Foundation

12.05 – 12.15 pm *Discussant: Professor Harry Clarke, LaTrobe University*

12.15 – 12.30 pm *Roundtable discussion*

12.30 – 1.30 pm **Lunch**

Session 3**Social impacts of migration**

Chair: Alison McClelland, Commissioner, Productivity Commission

- 1.30 – 1.50 pm *Attitudes to migration:* **Professor Andrew Markus**, Monash University
- 1.50 – 2.10 pm *International perspectives:* **Dr Oliver Marc Hartwich**, Centre for Independent Studies
- 2.10 – 2.30 pm *Discussant:* **Emeritus Professor Max Corden**, Melbourne University
- 2.30 – 3.00 pm *Roundtable discussion*
- 3.00 – 3.30 pm** **Afternoon tea**

Session 4**Panel discussion – Implications for policy directions**

Moderator: Professor Jonathan Pincus, University of Adelaide

- 3.30 – 4.15 pm Barry Chiswick; Richard Arnott; Professor Bob Gregory (ANU); Henry Ergas
- 4.10 – 4.45 pm *Roundtable discussion*
- 4.45 – 4.50 pm** **Close: Gary Banks**

B Roundtable participants

James Allnutt	Deloitte Access Economics
Distinguished Professor Richard Arnott	Department of Economics, University of California, Riverside
Gary Banks	Chairman, Productivity Commission
Peter Brandon	Broom Professor of Social Demography, Department of Sociology and Anthropology, Carleton College, Northfield, Minnesota
Peter Burn	Director of Public Policy, Australian Industry Group
Arthur Camilleri	Assistant Secretary, Strategic Policy, Department of Finance
The Hon Bob Carr	Chair, Sustainable Development Panel, Department of Sustainability, Environment, Water, Population and Communities
Professor Barry R Chiswick	Department of Economics, Columbia College of Arts and Sciences, George Washington University, Washington DC
Professor Harry Clarke	Department of Economics and Finance, LaTrobe University
Dr Larry Cook	Visiting Researcher, Productivity Commission
Emeritus Professor Max Corden	Department of Economics, University of Melbourne
Steven Cork	Crawford School of Economics, Australian National University
Dr Wendy Craik	Commissioner, Productivity Commission
Mark Cully	Chief Economist, Department of Immigration and Citizenship
Professor John Daley	CEO, Grattan Institute
Professor Henry Ergas	Professor of Infrastructure Economics, SMART Infrastructure Facility, University of Wollongong
Dr Jenny Gordon	Principal Adviser Research (Canberra), Productivity Commission
Emeritus Professor Bob Gregory	Economics Program, Australian National University
Lisa Gropp	First Assistant Commissioner, Productivity Commissioner
Dr Oliver Marc Hartwich	Research Fellow, Centre for Independent Studies
Don Henry	CEO, Australian Conservation Foundation

Darren Hooper	Branch Head, Population and Migration Policy, Department of Education, Employment and Workplace Relations
Professor Graeme Hugo	Geographical and Environmental Studies, University of Adelaide
Dr Michael Kirby	Head of Office, Productivity Commission
Mark Laduzko	Assistant Secretary, Agriculture Customs and Environment, Department of Prime Minister and Cabinet
Professor Andrew Markus	Department of Jewish Civilisation, Monash University
Alison McClelland	Commissioner, Productivity Commission
Luise McCulloch	Acting General Manager, Industry, Environment and Defence Division, Department of the Treasury
Professor Peter McDonald	Director, Australian Demographic and Social Research Institute, Australian National University
Andrew Metcalfe	Secretary, Department of Immigration and Citizenship
Stephen Meyrick	Group Manager, GHD Australia
Mike Mrdak	Secretary, Department of Infrastructure and Transport
Terry O'Brien	First Assistant Commissioner, Productivity Commission
Professor Kevin O'Connor	Faculty of Architecture, Building and Planning, University of Melbourne
Professor Jonathan Pincus	Visiting Professor of Economics, University of Adelaide
Brian Pink	Australian Statistician, Australian Bureau of Statistics
Simon Pryor	Director Policy, Business Council of Australia
Chris Richardson	Deloitte Access Economics
John Sutton	Associate Commissioner, Productivity Commission
Malcolm Thompson	Deputy Secretary, Department of Sustainability, Environment, Water, Population and Communities
Philip Weickhardt	Commissioner, Productivity Commission
Serena Wilson	Deputy Secretary, Department of Families, Housing, Community Services and Indigenous Affairs
Professor Alan Woodland	Australian School of Business, University of New South Wales
Mike Woods	Deputy Chairman, Productivity Commission

Observers

Angela MacRae	Commissioner, Productivity Commission
Patricia Scott	Commissioner, Productivity Commission
Louise Sylvan	Commissioner, Productivity Commission
Warren Mundy	Commissioner, Productivity Commission
Laze Pejoski	Department of Immigration and Citizenship
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Alan Johnston	Assistant Commissioner, Productivity Commission
John Salerian	Assistant Commissioner, Productivity Commission
Dr Patrick Jomini	Assistant Commissioner, Productivity Commission
Owen Gabbitas	Research Manager, Productivity Commission
Alex Maeovsky	Research Manager, Productivity Commission
Philip Harslett	Research Economist, Productivity Commission
Greg Thompson	Research Economist, Productivity Commission
Margaret Mead	Research Coordination Unit, Productivity Commission

