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Hands, Mouths and Minds: Three Perspectives on Population Growth and Living Standards

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Hands, Mouths and Minds: Three Perspectives on Population Growth and Living Standards

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Executive Summary

- The long-run relationship between population growth and living standards has been a source of controversy among Australian economists.
- There is little argument that population growth and immigration have contributed to 'extensive' economic growth, that is, growth in the size of the Australian economy.
- There is much less agreement on the crucial question of whether population growth and immigration have also made a positive contribution to 'intensive' growth, that is, growth in real national income per capita, a widely used proxy for living standards.
- Economists in the Hands tradition view the past and prospective contribution of population growth to long-run growth in real living standards as being either broadly neutral or slightly negative.
- The Mouths perspective is associated with Malthusianism and anti-growth environmentalism. It argues that population growth can cause living standards to stagnate or even decline by placing increasing demands on current and future output and resources.
- The Minds perspective, by contrast, argues that the main contribution population growth makes to living standards is via an increased supply of ideas and innovations. From this perspective, population growth, given appropriate institutions and incentives, not only contributes positively to productivity and rising living standards but is also the main driver of these improvements in the long run.
- Australian economists have for the most part relied on the Hands and Mouths perspectives in arguing either for or against population growth and immigration. However, neither of these perspectives offers clear or compelling conclusions about the implications of population growth for long-run living standards.
- Economists and policymakers need to change the way they think and talk about the role of population growth in driving economic growth by adopting the Minds perspective.
- Immigration should be regulated to capture the long-run dynamic benefits from population growth rather than to correct short-term labour market imbalances.
- The permanent migration program should be allocated via competitive auction to minimise inefficient non-price competition for permanent migration rights and to enable government to better capture and redistribute the economic rents attached to these rights.

The most decisive mark of the prosperity of any country is the increase in the number of inhabitants.

— Adam Smith, *The Wealth of Nations* (1776)

The German immigrants ex Friedeborg were brought up yesterday by the Settler, and certainly, as far as appearance goes, they promise to become as useful a class of settlers as have been received here under the Immigration Regulations for some time past. They are a hardy looking lot, who appear to have been well used to work... The hearty manner in which they commenced cheering and singing before reaching the wharf shows at least that they arrive in good spirits, and with an evident determination to appreciate their new home.

— *The Brisbane Courier* (15 August 1871), noting the arrival of the ship bringing the author's three times grandparents to Australia

Introduction

The long-run relationship between population growth and living standards has been a source of controversy among Australian economists, no less than for the general public. There is little argument that population growth and immigration have contributed to 'extensive' economic growth, that is, growth in the size of the Australian economy. There is much less agreement on the crucial question of whether population growth and immigration have also made a positive contribution to 'intensive' growth, that is, growth in real national income per capita, a widely used proxy for living standards. Historically, the 'populate or perish' imperative was the main source of popular and political support for population growth and immigration. Population growth was supported for reasons that were as much strategic as economic. Policymaking was focused on economic development and extensive growth rather than intensive growth, although improving average living standards has always been a concern for public policy.

Australians have demonstrated different attitudes to the two drivers of population growth, natural increase and immigration. Most Australians would welcome—even if they take for granted the reduction in infant mortality and increase in longevity driving natural increase during Australia's 'demographic transition'—the one-time boost to population growth flowing from industrialisation and long-term economic development. The reduction in fertility rates that also accompanies the demographic transition has long been viewed as problematic from a public policy perspective. As early as 1903, a popular scare and moral panic over declining fertility led to the appointment of the Mackellar Royal Commission on the Decline of the Birth Rate.¹ More recently, the implications of declining fertility for the age structure of the population have been a concern.² Public policy has if anything been pro-natalist, with federal maternity allowances or payments in place almost continually since 1912.³ These policies had broad social and economic objectives, but any resulting gains in fertility would not have been unwelcome. There has been little or no popular or political support for anti-natalist policies, such as China's one-child policy, although such views can be found in the public debate.

Attitudes to immigration have been more mixed and more controversial. Net overseas migration is a major source of short-run variation in population growth and has inevitably influenced attitudes to overall population growth. Many of the issues around immigration have historically related to its composition and questions of cultural identity and social integration rather than its quantity. Public policy has mostly encouraged immigration, and much of Australia's early inbound migration was sponsored by government through assisted passage schemes, such as the one that brought German immigrants aboard the *Friedeburg* to Australia in the late nineteenth century. These policies reflected the 'populate or perish' imperative and had an economic development

rationale expressed in the ‘men, money, markets’ formula of Prime Minister Stanley Bruce.⁴ The last serious attempt to close the door to immigration—by the Whitlam government in 1973—had adverse macroeconomic consequences and was quickly reversed.⁵

The arguments advanced both for and against immigration are now largely economic but also increasingly environmental.

Since the formal demise of the White Australia policy in the early 1970s, debate has focused more squarely on the net costs and benefits of migration rather than questions of cultural identity and integration. The arguments advanced both for and against immigration are now largely economic but also increasingly environmental. Public opinion on population growth and immigration has fluctuated over time. Since the late 1970s, opinion polls have found majorities opposed to a larger population, although the extent of opposition is sensitive to the framing of the question. Opinion polls on immigration show that ‘from 1953 until as late as 1981 and again from 1998 until quite recently, the view that there were too many migrants coming to Australia was a minority view; the majority supported the immigration program or wanted it expanded.’⁶ More recently, public opinion has turned against immigration, although levels of opposition remain below those seen in the 1980s and early 1990s.

Population growth and immigration became a major political issue in the run-up to the 2010 federal election following a period of relatively high net overseas migration and population growth. A March 2010 opinion poll found that 52% of respondents disagreed with the proposition that ‘having a larger population will help our economy,’ while only 38% agreed. Fifty-eight percent disagreed that ‘Australia has the space and resources to cope with a much larger population,’ while only 35% agreed.⁷ The two main political parties committed themselves to moderating net overseas migration and reviewing population policy. These positions are more commonly associated with the political fringe than mainstream political parties. The federal government released a ‘sustainable population strategy’ in 2011 following a period of public consultation.⁸ In this context, it has once again become necessary to make the economic case for population growth and immigration.

Population growth and living standards

This monograph reviews three perspectives on the relationship between population growth and living standards under the headings Hands, Mouths and Minds. The Hands perspective derives from conventional economic perspectives on the drivers of long-run economic growth. As we shall see, economists in the Hands tradition view the past and prospective contribution of population growth to long-run growth in real living standards as being either broadly neutral or slightly negative.

The Mouths perspective is associated with Malthusianism and anti-growth environmentalism. It argues that population growth can cause living standards to stagnate or even decline by placing increasing demands on current and future output and resources. However, in its Keynesian variant, the Mouths perspective also highlights the contribution that population growth makes to aggregate demand and economic growth, a perspective that is influential among many in the business community who favour population growth and immigration. The tension between these two versions of the Mouths perspective is not easily resolved.

The Minds perspective, by contrast, argues that the main contribution population growth makes to living standards is via an increased supply of ideas and innovations. From this perspective, population growth, given appropriate institutions and incentives, not only contributes positively to productivity and rising living standards but is also the main driver of these improvements in the long-run. This perspective has been under-represented in debates about population growth and immigration for two reasons. First, the Minds perspective is difficult to measure and model, so economists tend to neglect it despite a substantial body of supporting theory and evidence. Second, its most important conclusion is somewhat counter-intuitive to the non-economist: short-run resource constraints and scarcities lead to long-run abundance. The Minds perspective is thus also difficult to popularise, particularly relative to the Mouths perspective, which is intuitively simple and easy to grasp.

The main theme of this monograph is that Australian economists have for the most part relied on the Hands and Mouths perspectives in arguing either for or against population growth and immigration. However, neither of these perspectives offers clear or compelling conclusions about the implications of population growth for long-run living standards. Even those who favour population growth and immigration have not been able to make a compelling case based on these two perspectives. This monograph argues that economists and policymakers need to change the way they think and talk about the role of population growth in driving economic growth by adopting the Minds perspective. This perspective can be augmented by a more conventional ‘gains from trade’ argument for immigration that has also been neglected in contemporary debates. Having reviewed each of these perspectives in an Australian context, the monograph considers the implications for public policy. It argues that the permanent migration program should be allocated via competitive auction to minimise inefficient non-price competition for permanent migration rights and to enable government to better capture and redistribute the economic rents attached to these rights.

An important assumption of this monograph is that growth in real gross domestic product (GDP) per capita is a good proxy for living standards and overall well-being. GDP has well-known limitations as a measure of both. We care about the production of goods and services not for its own sake but for its contribution to current and future consumption (financial intermediation means that production and consumption need not take place at the same time). Over long periods of time, consumption and production will be closely linked. As Julian Simon has noted, increased consumption implies increased production, but the reverse does not necessarily hold. A wide-range of other measures of living standards and well-being are also positively correlated with growth in real GDP per capita, for example, measures of longevity, health, scientific, educational and cultural achievement, as well as environmental quality. Even for those concerned with global warming, the costs of emissions abatement and climate change adaptation would be less burdensome if per capita incomes were higher rather than lower. There is little loss of generality in treating growth in real GDP per capita as a proxy for living standards and well-being.

Another important assumption of this monograph is that public policy should focus on underpinning the long-run growth in average living standards. Immigration and population growth can influence the distribution of income and wealth, although these distributional impacts are less pronounced than commonly assumed. This monograph takes the view that these issues are secondary to the more important issue of raising overall living standards in the long run. If population growth and immigration can be shown to be positive for long-run growth in average living standards, then any resulting distributional issues can be addressed directly through other government policies. The monograph will, however, suggest how the permanent migration intake could be regulated so as to redistribute the welfare gains from immigration in favour of the existing resident population and so build popular and political support for immigration.

Population growth and immigration can be shown to be positive for long-run growth in average living standards.

Hands

Mainstream economics has typically modelled economic growth as a function of labour and capital inputs and technology. More specifically, growth in real GDP per capita is seen as directly proportional to the growth rates of the capital-labour ratio and technological progress. The contribution labour makes to real output in the long-run is via the size of the working-age population, the labour force, and the number of hours worked, although this contribution is augmented by human and physical capital, as well as technology. Standard growth models often treat growth in labour inputs as a pre-determined constant, leaving little role for labour, much less population growth, and other demographic factors in explaining long-run economic growth. Economic growth is driven mainly by capital accumulation and technology, with improvements in technology and the productivity of labour and capital acting as the main driver of economic growth and average living standards in the long-run.⁹

The contribution labour makes to economic growth depends on its interaction with capital and technology and the assumptions made about the returns to scale. Economists recognise that population growth and increased population density can increase the division of labour and specialisation, leading to economies of scale and gains from trade. However, these gains are dominated in the long-run by assumptions about the returns to scale. Neo-classical growth models imply that population growth yields at best temporary or one-off effects on economic growth and is thus broadly neutral for long-run growth in living standards. In standard models, population growth can subtract from economic growth and living standards in the long run to the extent that it leads to a reduction in capital per worker and thus lower productivity.¹⁰ However, for the most part, economists have shown relatively little interest in demography, since population growth does not play a significant role in the standard growth models. There is no necessary connection between population growth and capital accumulation and technology in these models. A key feature of these models is that the improvements in technology or productivity that drive long-run economic growth are exogenous and unexplained.

These are well-known limitations of conventional neo-classical growth theory, yet this is also the framework that most economists bring to bear in analysing the implications of population growth and immigration for living standards. The view that population growth is broadly neutral in the long run is supported by cross-country comparisons of population growth rates with real GDP growth rates, which typically show little statistical correlation, controlling for other factors.¹¹ However, as the Minds perspective will argue, the long-run implications of population growth for economic growth are unlikely to be apparent in static cross-country comparisons. They are more likely to be found in dynamic, long-run settings through the analysis of time series data.

The implications of population growth in general are distinct from the implications of changes in the age structure of the population arising from the life cycle of large age cohorts such as the 'baby boom' generation. The baby boomers gave rise to a so-called 'demographic dividend' in the decades after World War II due to a larger than usual share of the population passing through the working-age part of the life cycle. Considerable attention has been paid to the economic, fiscal and other implications of the life cycle of this generation. As its name implies, the 'demographic dividend' has been positive for economic growth for much of the post-War period, but is now expected to subtract from economic growth in many countries as this generation ages and (all else being equal) labour force participation and hours worked decline. Standard models can shed light on the economic implications of changes in the age structure of the population, but these are still only transitory effects, even if they take a generation or more to play out.

David Pope blamed Australia's poor per capita growth performance on immigration, arguing that Australia traded-off living standards against a bigger population to satisfy the 'populate or perish' imperative.

Some of the weaknesses of the Hands perspective in analysing the implications of population growth and immigration for long-run growth in living standards can best be illustrated by examples of Australian economists and demographers who have examined the question in an Australian context, starting with Australian economic historiography. Perhaps the most important student of the role of population in Australia's economic history was the late David Pope. Following the standard neo-classical growth model, Pope argued that since growth in net migration exceeded capital accumulation during much of Australia's history, immigration had likely lowered Australia's stock of capital per worker and productivity, expanding real GDP but reducing real GDP per capita. Pope blamed Australia's poor per capita growth performance on immigration, arguing that Australia traded-off living standards against a bigger population to satisfy the 'populate or perish' imperative.¹²

Pope was not the only one to reach this conclusion. Simon Kuznets, although very much in the Minds tradition discussed below, thought that a low capital-labour ratio was implicated in Australia's relatively low per capita GDP growth between the 1860s and the early post-War period (1950s).¹³ Fred Gruen's 1985 Shann Memorial Lecture argued that 'our high population growth rate ... has exercised a negative effect on the improvement in our average living standards.'¹⁴ Jolley said the same of immigration.¹⁵ These conclusions derived from a growth accounting framework

depend critically on the assumptions of the neo-classical growth model, which ignores the other channels through which population growth may have contributed to better living standards as well as the direct contribution of labour inputs and the stock of capital per worker.

The leading undergraduate Australian economic history textbook argues that ‘the main economic effects of heavy immigration [in the post-War period] were to enlarge the workforce and to increase total production and aggregate demand.’¹⁶ There is little argument that population growth and immigration contributed to extensive growth in the Australian economy. However, the authors avoid taking a stand on the question of intensive growth and the long-run implications for real per capita incomes.¹⁷

A second example of the Hands perspective in action is the work of Ross Guest and Ian McDonald,¹⁸ who argue, in contrast to demographers like Peter McDonald,¹⁹ that a decrease in fertility would lead to a modest improvement in future living standards. Their conclusions are specific to their simulation model, which adopts standard neo-classical assumptions, including constant returns to scale and exogenous technology. The modest improvement in living standards arises from the reduction in investment needed to maintain the capital-labour ratio and the simulation’s implication that future increases in taxes due to an ageing population will have only a very small negative impact on future labour supply. Since the simulated improvement in living standards from a reduction in fertility is modest, their conclusions do not differ significantly from the consensus view of neo-classical growth theory that population growth is broadly neutral in the long run.

A third example of the Hands perspective in action is Max Corden’s 2003 Richard Snape Lecture, *40 Million Aussies? The Immigration Debate Revisited*.²⁰ Having dismissed many of the arguments against a larger population and immigration, Corden concludes that ‘there are two arguments in favour of a substantially larger population ... the “populate or perish” argument, broadly interpreted, and the economies of scale and increased choice argument when applied to a country subject to the tyranny of distance.’²¹ The ‘broadly interpreted’ ‘populate or perish’ argument maintains that the per capita cost of public goods declines as population increases, but this ignores wider costs and benefits on other margins, for example, positive or negative externalities (discussed in the next section). As noted previously, the economies of scale argument is dominated by diminishing or constant returns in the long run in the standard models. Corden also concedes that the ‘economies of scale’ argument is less compelling for an open economy that can capture economies of scale through trade. To that extent, trade and migration can be viewed as substitutes, although the Minds perspective suggests they are far from perfect substitutes. Corden does not mention the role of population growth or immigration as potential drivers of innovation and technical change.

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A fourth example of the Hands perspective in action is government-sponsored research by Peter McDonald and Jeromey Temple presenting ‘a partial analysis of the impact of migration on Australia.’ The results were obtained by running the federal Treasury’s *Intergenerational Report* (IGR) demographic projections through the Productivity Commission’s demographic model. While not an economic model, the report’s conclusions are consistent with standard economic models and the Treasury’s IGR projections in arguing that ‘the impacts of migration upon the rate of growth of GDP per capita derive from the impact of migration upon the proportion of the population that are in the labour force which, in turn, is determined largely by the extent of population aging.’²² Immigration boosts real GDP per capita, but only by increasing the number of hours worked due to a slowing in population ageing. This conclusion is typical of models that limit the contribution of population growth and immigration to hours worked. Although immigration has had no impact on the age structure of the population historically, the authors argue it may have some impact in the future.²³

A fifth example is the 2006 Productivity Commission (PC) report *Economic Impacts of Migration and Population Growth*, which concluded that ‘migration has relatively small but generally benign economic effects.’²⁴ This less than ringing endorsement is a function of the limitations of the modelling conducted for the commission. As the PC readily concedes, it is inherently difficult to

quantify and model such fundamental factors as the gains from trade and increased competition, much less the role of innovation, so these are omitted from the modelling. Such qualifications need to be given much greater emphasis. The commission effectively concedes that such modelling is mis-specific and of little value. As with others in the Hands tradition, the modelling for the PC assumed that immigration subtracts from labour productivity due to a decrease in the capital-labour ratio.

The commission's 2006 modelling and conclusions do not differ substantially from the major Australian studies into the economic implications of immigration conducted in the 1970s and 1980s, including economic modelling done for the 1988 Fitzgerald Committee of inquiry.²⁵ Fitzgerald concluded that 'the positive effects of immigration on the economy are necessarily limited. They can account for only a fraction of total economic growth.'²⁶ These reports suffered from similar limitations as the 2006 PC report. Although they were undoubtedly helpful in maintaining bipartisan support for immigration at the time, they have given Australians little sense of the real economic significance of population growth and immigration, because neither plays a major role in long-run growth in real GDP per capita based on standard models of economic growth.

Mouths

The Mouths perspective derives from the work of Thomas Malthus and his *Essay on the Principle of Population*, which went through several iterations from 1798 onwards. The Malthusian model holds that rising incomes can sustain a larger population, but that population growth leads real incomes per capita (real GDP divided by population) to stagnate in the long run. The 'Malthusian

trap' was an empirically valid model for most of human history. Real incomes per capita had been stagnant for millennia up until the time Malthus wrote.²⁷ The Industrial Revolution freed humanity from the Malthusian trap, and the subsequent growth in real incomes over and above population growth throughout much of the world has since invalidated the Malthusian model. The ultimate causes of the Industrial Revolution remain a subject of scholarly dispute,²⁸ but not its implications for the historical improvement in living standards. In a posthumously published work, Julian Simon made a persuasive, although by no means definitive, case that the timing and location of the Industrial Revolution is best explained by changes in population growth and density.²⁹ Population dynamics also play an important role in the emerging field of 'unified growth theory,' which seeks to explain the transition from Malthusian to modern economic growth.³⁰

The Industrial Revolution freed humanity from the Malthusian trap, and the subsequent growth in real incomes over and above population growth throughout much of the world has since invalidated the Malthusian model.

Despite two centuries of rising living standards for much of the world's population, the view that population growth will ultimately run ahead of output and resources—leading to a decline in living standards—remains very influential, particularly among environmentalists, and informs much public policy designed to address environmental issues. It also informs the notion of 'carrying capacity,' the idea that a country or the planet as a whole can support only a finite number of people. Non-economists are prone to naively extrapolating population growth trends, such as the electrical engineers writing in *Science* magazine in 1960, whose 'doomsday equation' suggested that the world's population would become infinite on Friday, 13 November 2026.³¹ Malthus influenced the development of classical and neo-classical economics. Classical economists David Ricardo and John S. Mill formalised the ideas of Malthus into the law of diminishing returns.

Malthus failed to anticipate the productivity gains that would enable growth in the output of goods and services to exceed the growth rate of the population. However, he was still very much a classical liberal. In his 1820 *Principles of Political Economy*, Malthus argued that the Malthusian trap was more likely to be a feature of political despotism than liberalism. Economic, civil and political liberties give people incentives to adopt 'prudential habits' that could lead to reductions in fertility. The reduction in fertility rates that accompanies rising incomes is one of the stylised facts of economic development and has been an important factor in overcoming the Malthusian trap

and invalidating explosive population forecasts based on simple extrapolation. Malthus understood the role of political and other institutions in conditioning incentives; these institutions are also important drivers of long-run economic development and improvements in standards of living.³² Countries with poor institutions and incentives are more likely to be characterised by stagnant real per capita incomes.

The younger John Maynard Keynes was an enthusiastic Malthusian; however, his Malthusianism was a complication for his later economics. While recognising the desirability of curbing population growth, Keynes was confronted with the dilemma of explaining where the future growth in aggregate demand would come from if not population growth. In a 1937 speech to the Eugenics Society on ‘Some Economic Consequences of a Declining Population,’ Keynes noted that ‘when Malthusian devil P. [population] is chained up, Malthusian devil U. [unemployment] is liable to break loose.’ For Keynes, the policy implications were clear: ‘with a stationary population, we shall, I argue, be absolutely dependent for the maintenance of prosperity and civil peace on policies of increasing consumption by a more equal distribution of incomes.’³³ Declining population growth was a feature of the ‘secular stagnation’ hypothesis exemplified in Alvin Hansen’s 1938 presidential address to the American Economic Association, ‘Economic Progress and Declining Population Growth.’ Hansen could not conceive of further improvements in technology that would be sufficient to offset the implications of reduced population growth for future economic growth (Hansen’s argument has a contemporary echo in Tyler Cowen’s ‘great stagnation’ hypothesis³⁴).

Malthusian views are much less common among economists today, but the Keynesian legacy persists in the tendency to think of the economy as being driven by demand rather than supply. The business community and the housing industry, for example, tend to support population growth and immigration as a source of growth in demand for their products and services. However, the economic problem is not one of ensuring sufficient demand but of creating and maintaining positive incentives to increase supply. As we shall see in the next section, both population growth and immigration can be instrumental in generating these incentives.

Malthusian thinking has a more contemporary economic expression in the notion that population growth is subject to ‘market failure.’ Individually rational decisions about fertility and migration may not be in the collective interest if freely functioning markets and prices fail to internalise the wider social costs flowing from these decisions. This stands in contrast to the classical liberal position on fertility that ‘the interests of each individual coincide with those of all other individuals.’³⁵ In the words of Paul Demeny:

A population problem exists when *my* preference for children diminishes *your* access to steak. Or to use an example perhaps more apposite in the United States, a population problem exists when your preference for not having children endangers my claim for secure pension rights. We have a population problem, in other words, when externalities are attached to demographic behaviour.³⁶
[emphasis in original]

As T.N. Srinivasan notes, Demeny confuses pecuniary externalities that are already reflected in market prices and have only distributional implications with externalities that arise from interdependent technologies or preferences.³⁷ Demeny’s examples are not well chosen. As we shall see in the next section, pecuniary externalities such as higher food prices generate positive incentives that increase supply in the long run and ultimately lead to lower prices in real terms. The problem of securing pension ‘rights’ arises from poorly functioning and socialised retirement incomes policies and not a lack of central coordination or planning of fertility and migration decisions.

It should be noted that there may also be *positive* pecuniary externalities arising from population growth and immigration. In the United States, cities with higher levels of immigration saw a reduction in the costs of housekeeping, gardening, child care, dry cleaning, and other

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labour-intensive services during the 1980s and 1990s.³⁸ As we shall see in the following section, a freely functioning price system typically does a good job of ensuring that the short-run costs of population growth and immigration translate into long-run gains in living standards. These gains then provide the resources to address the distributional issues of the type suggested by Demeny. Tackling any market failures directly is likely to be more fruitful than limiting population growth and immigration.

Market failure arguments are not limited to the possibility of over-population. McDonald asserts that there is market failure leading to excessively low rates of fertility, which may in turn harm long-run economic growth prospects.³⁹ For McDonald, the demands of market production are in conflict with the demands of ‘social reproduction.’ Australia’s realised fertility rates are below the stated preferences of Australians for around 2.5 children, as well as self-reported expected fertility rates.⁴⁰ However, this ‘baby gap’ may be due to biased expectations such as over-estimating relationship prospects rather than real obstacles to achieving expected or desired fertility. The baby gap may also be attributable to subjective trade-offs made against other objectives.⁴¹ Resource constraints could certainly contribute to a baby gap, but freely functioning markets are more likely to ease than add to these constraints, contrary to McDonald’s assertion that free markets are the enemy of fertility.

While some have advocated government activism to reduce financial barriers to fertility, this is likely to come at the expense of increasing resource constraints elsewhere in the economy and

Increasing net overseas migration is likely to be a cheaper policy option than pro-natalist policies as a mean of addressing issues such as the age structure of the population.

society through the efficiency costs of taxation needed to fund these policies. Based on international evidence on the sensitivity of fertility to government benefits, the budget cost of an additional baby is around \$300,000.⁴² While the Minds perspective discussed in the next section suggests there are long-term positive spillover benefits arising from an extra baby, these would need to be set against the efficiency costs of higher taxation, which can be very large. The many other determinants of fertility are also far too complex and interdependent for public policy to have predictable impacts. As the Productivity Commission concludes, ‘the economic grounds for policy interventions to raise fertility are presumptive rather than evidence-based.’⁴³ Increasing net

overseas migration is likely to be a cheaper policy option than pro-natalist policies as a mean of addressing issues such as the age structure of the population, although the effects of either on the median age of the population and age dependency ratios are likely to be modest and transitory.

Minds

The Minds perspective highlights the role of population growth and immigration in generating positive incentives for technological and productivity improvements, which are the main driver of economic growth and living standards in the long run. The Minds perspective emanates in part from the work of Julian Simon,⁴⁴ Simon Kuznets,⁴⁵ Ester Boserup,⁴⁶ Harold Barnett, and Chandler Morse⁴⁷ and their investigations into the historical relationship between population growth, resource prices, innovation, and technological change. The Minds perspective is also an important implication of ‘new’ or ‘endogenous’ growth theory, exemplified in the work of Paul Romer.⁴⁸ New growth theory addresses the principal shortcoming of neo-classical growth theory: its inability to account for the technological change and productivity improvements that are the main driver of the long-run improvement in living standards. New growth theory seeks to explicitly model (or endogenise) the process of technical change and innovation. In doing so, it gives a role to population growth as a direct source of the supply of new ideas and as a driver of innovation. New growth theory has focused mainly on the implications of research and development (R&D) expenditure and human capital accumulation for economic growth. However, as this section will argue, population growth can drive technical change through much broader and more mundane transmission mechanisms than just R&D and human capital accumulation.

As previously noted, Simon makes a persuasive, although by no means definitive, case that the timing and location of the Industrial Revolution is best explained by changes in population

growth and density.⁴⁹ For Simon, population growth and density are the most exogenous variables driving long-run economic growth, and they determine other long-run growth drivers such as ‘the structure of markets, law, tradition and political institutions.’⁵⁰ All other variables are ‘endogenous intermediate variables rather than independent causal variables.’⁵¹

Simon neatly encapsulates the Minds perspective in the following quote (from which the title of this monograph is taken):

It is your mind that matters economically, as much or more than your mouth or hands. In the long run, the most important economic effect of population size and growth is the contribution of additional people to our stock of useful knowledge. And this contribution is large enough in the long run to overcome all the costs of population growth ... The source of these improvements in productivity is the human mind, and a human mind is seldom found apart from a human body.⁵²

Simon was by no means the first to these insights. Alfred Marshall saw that ‘knowledge is our most powerful engine of production.’⁵³ But as Schultz notes, ‘in not seeing the implications of Marshall’s remarkable insights, economists have wandered for years in the wilderness of capital confined to material goods.’⁵⁴ Whereas classical economics was concerned with natural and physical constraints on economic growth, the growing importance of ideas as a driver of productivity means that these physical constraints have become increasingly less relevant to long-run economic growth outcomes.

The contribution of population growth to knowledge growth is hard to measure and model, and so has traditionally been neglected by economists in favour of more tractable models and relationships. However, Simon’s work showed that ideas generation was proportional to population growth and not subject to economies or diseconomies of scale. Others have found that research output increases faster than proportionally with population due to increases in the size of the market.⁵⁵ In any event, the implication is that the more people there are, the more new ideas we get. These new ideas need not be earth-shattering scientific discoveries. They can be very simple and mundane improvements in techniques, processes and methods that in combination yield significant improvements in aggregate productivity. For example, the integration of referencing software with web browsers and online bibliographic databases has decreased the amount of time taken to write this monograph relative to what would have been required only a few years ago.

Ideas generation was proportional to population growth and not subject to economies or diseconomies of scale.

Ideas also have the important property that, putting aside the issue of intellectual property rights, they are non-rivalrous in consumption and have positive spillovers that generate increasing returns to scale. The Minds perspective thus liberates growth theory from the assumption of constant or decreasing returns to scale. Moreover, because human ingenuity is unlimited, the potential supply of new ideas is inexhaustible. There are thus no long-run technical or resource constraints on future growth in real living standards. This conclusion is not mitigated by the problem of global warming, since it too is amenable to technological solutions that are even more likely to emerge in an environment in which climate change or emissions abatement are generating significant increases in costs, creating positive incentives for new innovations.

Population growth, density and migration are important drivers of this process of endogenous technical change. As long ago as 1691, the pioneer of national accounting, Sir William Petty, noted that the commercial, cultural, military and technological prowess of the Dutch was partly a function of a higher population density relative to England and that Holland did not seem to be inhibited by its lack of natural resources.⁵⁶ The same observation could be made of Singapore or Hong Kong today. Population growth and migration can put upward pressure on resource and other prices. However, the increase in prices provides incentives to find new ways to satisfy demand, leading to new innovations. This leads to the seemingly paradoxical conclusion that localised and short-run resource constraints and scarcities lead to long-run abundance. This is the same process that drives the secular decline in real commodity prices identified and

explained by Barnett and Morse⁵⁷ and Simon.⁵⁸ Declining real commodity prices come about *because* of, not in spite of, growing populations and rising real incomes. The short-run ‘costs’ of population growth and migration are a necessary stepping stone to capture these long-run benefits.

This perspective radically changes the way we should think about some of the traditional ‘costs’ of population growth and immigration. For example, the increases in land and house prices associated with population growth and urbanisation can be viewed as a measure of the increased productivity of urban land flowing from increases in population density and agglomeration effects. Productivity and density are closely linked.⁵⁹ For example, urban density supports the economic viability of productivity-enhancing public infrastructure. As Barnett and Morse note, ‘it is not its intrinsic physical and locational qualities that advance the value of urban land, but the fact that it is where people are congregating in ever-increasing numbers, together with the economies which the combination of sociotechnical advance and agglomeration create.’⁶⁰ This is not to say that supply-side constraints are unimportant in putting upward pressure on land and house prices. The supply-side should be made as flexible as possible to accommodate the rising demand for increasingly productive urban land and buildings. If the supply-side of housing markets were more flexible, we could be more confident that any observed increase in land and house prices was attributable to rising benefits rather than rising costs. Increases in house and land prices attributable to population growth and migration would then be less of a concern. Rising house and land prices is an important driver of internal migration, ensuring that people who place a low value on being located in densely populated areas are displaced by those with a higher valuation, giving rise to a more economically efficient spatial distribution of the population. Of the 10 Australian federal electorates that experienced the fastest population growth between 2008 and 2009, eight were in Queensland or Western Australia, highlighting the role of the mining boom and internal migration, rather than overseas migration to Sydney and Melbourne, in driving regional population growth.⁶¹

Australia already has one of the world’s most spatially concentrated populations, with an urbanisation rate of 87%, and this is likely to be a source of economic strength rather than weakness. Yet Australian cities are still small by international standards. Australia’s largest city, Sydney, is ranked 67th in the world by population. There are five cities internationally with populations larger than the total population of Australia and 25 that have more than 10 million people, more than double the population of Sydney.⁶²

It is important to note that the Minds perspective is meant to show the general relationship between population and economic growth and not necessarily the implications for particular countries. National borders are political constructs with limited economic significance. Economic relationships do not necessarily follow these borders. The nation-state, as opposed to the world as a whole or other regional groupings, may not be the relevant unit of analysis for empirically confirming the relationship between population and economic growth. Charles Jones argues that ‘long-run growth is driven by the discovery of new ideas throughout the world.’⁶³ In his model of economic growth, ideas are proportional to research effort, which in turn is proportional to population in innovating countries, although the transmission mechanism

The role of population in driving technical change is best viewed over long periods of time rather than in static, cross-country comparisons.

from population to ideas is much broader than just the research channel modelled by Jones. The role of population in driving technical change is best viewed over long periods of time rather than in static, cross-country comparisons.

As noted previously, just as countries can import economies of scale through trade, they can also import ideas. Trade can potentially substitute for migration and population growth as a driver of innovation. However, there is evidence that they are far from perfect substitutes. Keller shows that positive technology spillovers are declining with distance.⁶⁴ Technology diffusion is geographically localised, with more in-country than between-country diffusion. Keller’s results are based in part on Australian data and show that Australia still suffers from the tyranny

of distance, although this penalty is decreasing with modern communications technology. Canberra is close to Australia's demographic centre of gravity and is 16,500 kilometres away from the G5 countries, except Japan, for which the distance is still a formidable 8,000 kilometres. Keller finds that technology spillovers are halved every 1,200 kilometres. It is also worth noting that of the countries that were historically completely cut off from outside technology, those with larger populations experienced faster technological change.⁶⁵

Australians have often lamented being the 'lucky' rather than the 'clever' country. While this is a tired and shop-worn stereotype, it does at least recognise that there are benefits from being at the forefront of innovation, rather than a passive adopter of innovations and technologies from abroad. Entrepreneurs, scientists, writers, artists, actors and filmmakers often find Australia too small for their talents. The resulting 'brain drain' and the one million Australians now living abroad has often been remarked upon. By increasing scale and the rate of technical change and innovation, increased population growth and immigration may help reduce and mitigate the consequences of the Australian diaspora. The problem of brain drain also implies the potential for 'brain gain' from inbound overseas migration.

For the most part, there has been little acknowledgement of the Minds perspective on the part of Australian economists in the local debate on population growth and immigration. John Nevile is exceptional in arguing that population growth leads to stronger productivity growth through the 'Salter effect.'⁶⁶ Named after the Australian economist Wilfred Salter, this effect suggests that faster population growth gives rise to a more modern and productive capital stock.⁶⁷ Nevile's approach is otherwise conventional in suggesting that the Salter effect must compete with the role of immigration in diluting the capital-labour ratio and productivity. More recently, Glenn Withers has also sought to promote elements of the Minds perspective, but it otherwise remains chronically under-represented in the Australian debate.⁶⁸

Regulating the migration intake

The Minds perspective highlights the role of migration as a transmission mechanism for ideas and innovation. Immigration is often thought of as one-way flow of labour, but is better viewed as a 'dynamic conduit through which people, information, capital, and goods flow across borders.'⁶⁹ In the United States, for example, Kerr and Lincoln found that immigration increases science and engineering employment and innovation, and may even help crowd-in native science and engineering employment and innovation.⁷⁰ As the previous section argued, the transmission mechanism from immigration to technical change is likely to be much broader than just a research and innovation channel. The regulation of the migrant intake needs to recognise these long-run dynamic gains, yet existing arrangements for permanent skilled migration to Australia are based on the Hands perspective and the idea that the main role of immigration should be to correct short-term labour market imbalances rather than underpin the long-term dynamism of the Australian economy.

Classical liberals are passionate advocates of free trade in goods and services. Restrictions on the cross-border mobility of labour attract less attention, yet the prospective welfare gains from complete cross-border labour market liberalisation are in the range of 50% to 150% of world GDP, dwarfing the relatively meagre gains still available from further liberalisation of global trade in goods, services and capital (which is not to say we should not seek out all such gains). The emigration of less than 5% of the population of poor countries to the developed world would yield welfare gains greater than the total elimination of all remaining barriers to trade in goods and capital.⁷¹ The prospective gains from a (highly unlikely) successful completion of the Doha round of multilateral trade liberalisation talks are inconsequential by comparison.

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As Pritchett notes, these potential gains from trade should be readily apparent in daily life:

Given the opportunity cost of our time and our willingness to pay, there are billions of people on the planet who would gladly mow our lawn for the price we would be willing to pay. Of course this raises in its starkest form the distributional issue ... the issue that makes international mobility such a 'third-rail' political issue: It benefits the globally richest ... and the globally poorest (migrants who would mow lawns) but has feared effects on the poorer in rich countries (existing migrants or natives who would mow lawns). But again ... the real threat to the working poor in rich countries is displacement by capital, not other labor.⁷²

Pritchett suggests greater cross-border labour mobility may reduce the incidence of labour-saving innovations and capital for labour substitution, but the Minds perspective would argue otherwise. There is little evidence to support the view that migration has negative economic or other consequences. As Clemens notes:

[T]he literature contains no documented case of large declines in GDP or massive declines in public service provision at the destination caused by immigration ... century-old issues of the *American Economic Review* and the *Journal of Political Economy* extensively discuss concerns that any further emigration might degrade the American economy or society ... Since then the American population has quadrupled—with much of the rise coming from increasingly diverse immigration to already settled areas—and the United States remains the world's leading economy, with much greater availability of publicly-funded amenities than a century ago.⁷³

In Australia's case, immigration has been shown to have no adverse effects on regional unemployment rates, median incomes, or crime levels.⁷⁴ With the unemployment rate at very low levels, the labour market is becoming a constraint on Australia's growth prospects. There is a strong cyclical case for relaxing quantitative controls on the size of Australia's migrant intake to ease these constraints, but the Minds perspective suggests an ongoing structural case for a more liberal approach to immigration. The fact that labour is much more mobile within countries than across national borders implies there are significant distortions in the international labour market that hinder economic growth for countries with strong growth potential like Australia.

Australia's temporary migration visa categories are currently uncapped and regulated by qualitative criteria, making a significant contribution to the flexibility of the labour market. The permanent skilled, family and humanitarian programs, by contrast, are subject to quantitative

Australia should capitalise on its appeal to potential migrants by auctioning the right to permanently migrate to Australia.

controls. Following earlier suggestions from Gary Becker and Julian Simon, Mark Harrison⁷⁵ and Wolfgang Kasper⁷⁶ have suggested Australia should capitalise on its appeal to potential migrants by auctioning the right to permanently migrate to Australia. The existing quantitative controls on permanent migration create artificial scarcities and rents that are currently captured by new migrants who meet bureaucratically determined criteria. An auction scheme would enable government to capture and redistribute the rents created by these quantitative controls, which may add to popular support for immigration, especially if the rents were notionally allocated to public infrastructure spending

(in reality, all government revenue is fungible). An alternative approach would be to allocate the auction quota to the public for free, based on the electoral roll or by tax file number, allowing the quota revenue to accrue directly to the public without being intermediated by government. Those opposed to immigration could refuse to sell their share of the quota, ensuring they bear the economic cost of their opposition. The late John Logan made the more radical suggestion that the public could also be allowed to determine the size of the quota. Logan assumed existing residents would choose the wealth-maximising size of the quota. The immigration program would then be entirely privatised for the benefit of existing residents.⁷⁷

The artificial creation and redistribution of scarcity rents is not something that classical liberals typically support in other contexts. Governments may find they have a perverse incentive to restrict the quota to raise additional revenue, depending on the price elasticity of demand for permanent migration rights. However, such a scheme has the benefit that it eliminates wasteful non-price competition for migration rights and assigns them to those who find them individually most valuable rather than just those who satisfy bureaucratically determined criteria. It does not rely on bureaucrats estimating current or future demand for specific skills, something they are not likely to do very well. Indeed, bureaucratic interference in higher education is responsible for at least some of the labour market shortages the skilled migration program now seeks to redress in areas such as medical professionals. Occupations in high demand will automatically attract higher bids from those with relevant skills. Under an auction scheme, migrants self-select for those who promise to be the most economically successful in Australia. It should be noted that migrants are not limited to bidding with their own resources. Potential employers, community groups or family members could augment the resources of potential migrants in making a bid.

As Kasper has suggested,⁷⁸ auction schemes could also be used to fill some or all of the humanitarian component of the permanent migration program. Participation would be limited to those already granted refugee status under existing conventions and those from designated countries with human rights problems or suffering from war and conflict. Refugee support groups, non-government organisations, and even the general public could contribute to bids on behalf of the most deserving cases, subject to the usual security assessments for the successful bidders. Since the program is intended to be humanitarian rather than narrowly economic, the winners could be required to pay only the price of the lowest successful bidder rather than the highest. Proceeds from the auction could then be notionally used to support re-settlement (again, recognising that government revenue is ultimately fungible). This would be a better use of resources than the current very expensive, highly bureaucratic and legalistic process for processing asylum-seekers that wastes the resources of both governments and NGOs and benefits mainly lawyers. It also has the potential to undermine the business models of people smugglers. The humanitarian auction quota could be set large enough to make the market-clearing price too low for people smuggling to be a profitable business. Some refugee lawyers and human rights advocates have suggested creating a system of internationally tradeable quotas for refugees and other categories of migrants as a way of sharing the refugee burden globally and as an alternative to the current system of international refugee law and administration.⁷⁹ Lotteries could also be used to supplement the permanent migration auction quotas and to add diversity to the migration program, similar to the US government's diversity lottery.

While the size of the auction quotas for permanent skilled, family and humanitarian migration is necessarily somewhat arbitrary, growth in the size of the quota could be tied to the growth rate of Australian real GDP per capita. Since migrants add directly to the denominator of the identity for real GDP per capita, the quotas could only grow if real GDP were growing faster than overall population growth. If there were no growth in real GDP, natural increase would displace migrants in the denominator and reduce growth in the size of the quota, although migration is already highly responsive to economic conditions. Explicitly tying growth in permanent migration to a measure of average living standards might offer the public reassurance that Australia's living standards are being guaranteed, while providing for long-term growth in the size of the permanent migration program free of central planning by bureaucrats. It is an approach to regulating the migration intake that is simple and relatively inexpensive to administer.

Other policy implications and conclusions

A number of policy implications and conclusions follow from the Minds perspective. The 'three Ps' of population, participation and productivity are not independent of one another, nor are population and productivity in conflict, as neo-classical growth models suggest. Population growth and immigration can drive productivity growth and long-run improvements in Australia's real living standards. Open labour and capital markets are particularly important in avoiding capacity constraints that might otherwise arise in the context of the mining boom.

The size and growth rate of Australia's overall population should be allowed to find its own level without the need for central planning by government.

This monograph is not necessarily intended as a call for a larger population in absolute terms or for increased net overseas migration. Rather, it demonstrates that we should be more relaxed about the short-run costs and distributional implications of population growth and immigration, because they lead to improvements in average living standards in the long run. The size and growth rate of Australia's overall population should be allowed to find its own level without the need for central planning by government. The focus of public policy should be improving the flexibility of the supply-side of the Australian economy, increasing its capacity to adapt to changes in population growth and immigration and to capture the long-run gains from a growing population. There is thus little economic rationale for explicit population targets, and the size and growth rate of the *overall* population are not an appropriate focus for public policy. The government has insufficient control over both natural increase and net permanent and temporary overseas migration to make these targets credible using existing policy instruments. The current federal government has rejected the idea of quantitative targets for population size or population growth.

Government 'population strategies' are also unlikely to be effective in managing the short-run costs or promoting the long-run benefits of population growth. As the Demographic and Liveability Panel report to the government's 'population strategy' inquiry noted, political culture is a significant obstacle to successful long-term government planning.⁸⁰ While the panel report expressed the hope that governments will in future put long-term considerations above short-term politics, this is a triumph of naive hope over experience. Governments have neither the knowledge nor capacity to implement long-term plans, arguing for greater reliance on market mechanisms to ensure that population growth and migration contribute positively to future growth in average living standards. The Minds perspective demonstrates that existing market mechanisms already perform this task to a large degree. The distributional consequences of population growth and immigration are best addressed through policies that increase the supply-side flexibility of the Australian economy, rather than targeting population growth or immigration. Immigration in particular should not be held hostage to failures in other areas of public policy such as housing supply, public infrastructure, and water.

However, greater use could still be made of market mechanisms. Existing quantitative controls and bureaucratic criteria for permanent migration could be replaced by an auction scheme that would enable governments to capture and re-distribute the rents accruing to permanent migrants and ensure that migrants self-select for those who are most likely to be economically successful in Australia. Future growth in the size of the permanent migration quota could be tied to the growth rate of real GDP per capita, ensuring that permanent migration could only increase in line with growth in average living standards. Temporary migration should be left uncapped to support the flexibility of the labour market.

Immigration should not be held hostage to failures in other areas of public policy such as housing supply, public infrastructure, and water.

High rates of urbanisation and increased population density give rise to economic benefits flowing from agglomeration effects. The price mechanism helps ensure that those who do not sufficiently value the benefits flowing from urban density are displaced by those who do. Internal migration can thus accommodate many of the pressures associated with a growing population. Policies designed to promote growth in non-urban regional areas and impose a higher tax burden are unnecessary and unlikely to succeed due to the overwhelming economic and other benefits of high density urban living.

Finally, economists and policymakers need to change the way they think and talk about the costs and benefits of population growth in favour of the Minds perspective. The Minds perspective is inherently difficult to model and popularise, but it offers better insights into the implications of population growth for Australia's future living standards. In particular, immigration should no longer be viewed purely in terms of addressing short-term labour market imbalances but as a driver of long-run productivity growth and living standards.

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