



RBA ECONOMICS COMPETITION 2007

The consequences of an ageing population for Australia's future productivity and economic growth, and the associated economic policy challenges

Best Essay from a First Year Student

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Introduction

The social phenomenon, population aging, is gradually changing the economic structure of many developed and some developing countries. Whilst the primary impact is felt in the workforce and employment, flow-on effects to productivity, growth and output are significant. Changes in the dependency ratio, savings ratio and government revenue and expenditure will lead to slower growth and lower productivity if they are not redressed by economic policies. Yet, such problems cannot be redressed by the government's traditional macroeconomic policies alone. Microeconomic reform, working in tandem with social reform policy, is required to address the long-term concerns.

Population Changes

Demographic changes in the Australia can be attributed to two main factors: decreasing birth rates and increasing life expectancies. With these factors operating, the population age structure bulges at the baby boomers but tapers offs in younger generations assuming a projected "coffin shape"(Fig. 1)¹. This age structure produces unfavourable conditions in the long-run as the population becomes top-heavy with an increasing dependency ratio. The larger older generation needs to be supported by a smaller younger generation. This has significant economic impacts.

Figure 1 **From pyramid to coffin**
Changing age structure of the Australian population, 1925-2045

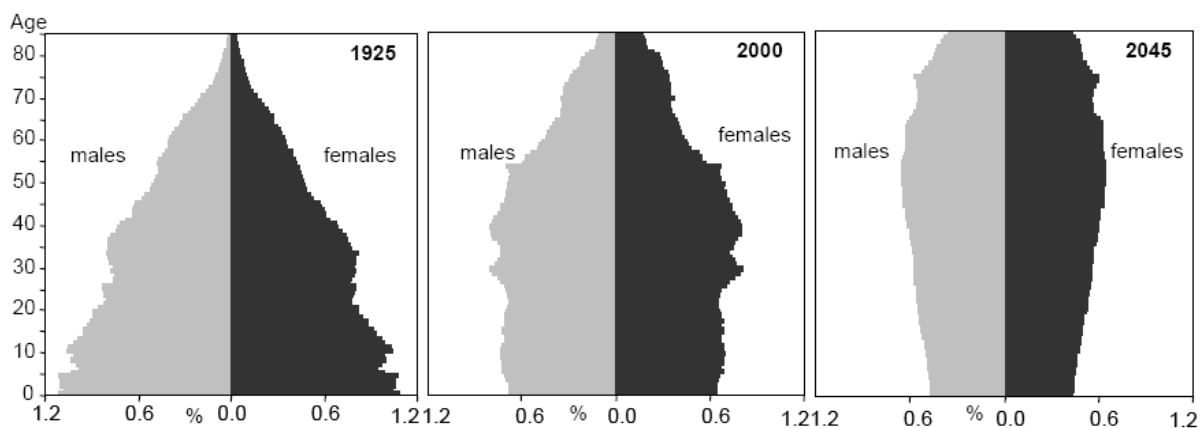


Figure 1: Changing Age Structure

Source: Productivity Commission 2005, *Economic Implications of an Ageing Australia*, Research Report, Canberra, pXIV

Effect on Productivity

The impact of an aging population will be to reduce average productivity, but the extent of that decrease will not be significant. Productivity is defined as the output per unit of input. In this case, we are concerned about the productivity of labour defined as:

$$\text{Productivity} = \frac{\text{Total Output}}{\text{Number of Workers}}$$

¹ Productivity Commission 2005, *Economic Implications of an Ageing Australia*, Research Report, Canberra, pXIV (Productivity Commission 2005: Econ. Impl.)

The implication of an aging population will be a decrease in the total number of employed persons. As more people retire from the workforce and less people enter, it appears on face value that productivity will rise if output remains constant. However, this is not the case. A decrease in the number of workers will lead to changes in output. Depending on the changes in technology used in the production process, the value of output may or may not decline. Whilst it is true that aging brings about experience and increases in productivity and hence production, there is a point where “the physical and mental effects of aging are likely to offset the benefits of experience”². Production may increase as the population ages, but at the point where the effects of aging begin to affect the majority of workers, production will experience a decline, *ceteris paribus*. As a result, there will be an inevitable decrease in aggregate productivity. Counteracting this will be changes in technology and education. Although globally, Australia ranks low on the educational attainment of its citizens, there has been a steady increase in tertiary education participation and an increase in secondary school retention rates.³ The increase in skills will lead to an increase in labour productivity. The rapid advances in technology will also increase productivity of capital and may make it more efficient for workers to perform their roles. However, the effect of this on labour productivity will be a minimal increase, if any.

Whilst average productivity is a measure of output per worker, it is not a definitive measure of a person’s suitability in a job position. Productivity is a macroeconomic measure and is suitable for an aggregate analysis of the labour market. It is not suitable for measuring the microeconomic suitability of workers for a job. Often, older workers will display superior performance to younger workers.⁴ Thus, the overall impact of an aging population on productivity is somewhat unclear. However, the most likely effect will be a gradual but not significant decline in average productivity.

Effect on Investment and Capital Growth

An aging population will reduce the available supply of capital, restricting investment and growth. As people age and move into retirement, they will draw down on their savings. There will also be a decline in public savings because an aging population will increase government expenditure and decrease taxation receipts. This will reduce the supply of capital leading to reduced investment opportunities. The effects will be twofold. Firstly, there will be a reduction in the rate of capital deepening. Whilst some analysts predict that this will increase the “intensity of world capital flows”⁵, historical data reveals the effect to be muted. Secondly, businesses will be unable to obtain domestic funds for expansion. This may lead to decreases in output and growth as old technology is used. Further, innovation through research and development will be restricted. Alternatively, businesses could borrow overseas capital and this would lead to an increase in foreign debt. Australia’s low savings ratio will also contribute to an increase in net foreign debt as retirees seek more funds during their retirement. Whilst the government has encouraged self-funded retirement, the low levels of domestic savings means Australia will continue to rely on foreign lending to fund its consumption. This will lead to problems in debt repayment as well as external imbalances with a widening Current Account deficit.

Effects on Economic Growth

² Productivity Commission 2005: Econ. Impl., p96

³ Australian Bureau of Statistics, 2007: Australia at a Glance, Canberra

⁴ Productivity Commission 2005: Econ. Impl., p110

⁵ Productivity Commission 2005: Econ. Impl., p116

Population aging acts a depressant on economic growth. A withdrawal of workers from the labour force, without supporting growth in capital deepening, will result in declining production. Further, there will be a reduction in consumption as older people tend to purchase less luxury consumer goods. Producers will respond to the unplanned increase in inventories and reduce production. The primary measure of output, Gross Domestic Product (GDP), will decline. This will lead to a slowing in economic growth as shown in Figure 2.

Figure 13 Economic growth in Australia — a 40 year projection
Per capita GDP, 2005-06 to 2044-45

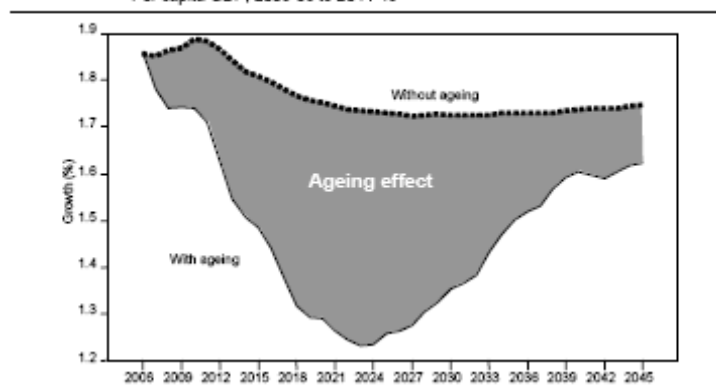


Figure 2: Impact of Aging on Economic Growth

Source: Productivity Commission 2005, *Economic Implications of an Ageing Australia*, Research Report, Canberra, pXXVII

Despite the negative economic effects, certain industries will benefit from an aging population. The insurance industry will experience growth in health insurance sales as more people join insurance policies. As people age, they tend to increase their insurance coverage. This will benefit the private health care industry, particularly in light of the Howard Government's plan in encouraging private health coverage for ordinary Australians. There will also be an increased demand for Aged Care services. This sector is likely to experience dramatic growth as the baby boomers bulge enters retirement age. Growth will then slow as the bulge disappears.

Macroeconomic Policies

Traditionally, the Australian government has managed the macro-economy with two arms of economic policy: Fiscal and Monetary. Due its nature, an aging population will not affect Monetary Policy decisions to the same extent as it affects Fiscal Policy decisions. An aging population will, at the most basic level, reduce taxation receipts and increase social welfare expenditure particularly in health and Social Security. As more people leave the workforce, there will be a reduction in the income tax receipts which are the majority of the government's "revenue". The government may have to increase taxes to compensate for the increased expenditures. "Despite the widespread belief to the contrary, Australians are not heavily taxed"⁶ by international standards. However, a tax increase is unlikely to occur to the higher tax bracket and governments have been traditionally unwilling to increase the tax rates in the lower tax brackets. An alternative to increasing income taxes is to increase company or indirect taxes. Whilst an increase in company tax would increase revenue, it will be offset by

⁶ Tiffen, R and Gittins R, *How Australia Compares* (Cambridge University Press, 2004) p89

a decline in profit resulting from less consumption by an aging population. An aging population will cause difficulties in revenue collection which must be addressed.

On the expenditure side of the budget, the government will experience a need to increase expenditure to sectors of the economy pertaining to the elderly's needs. There will be increased expenditure on health care services as there is a change in the "welfare mix" - that is, the mix between family, the state and the market for underwriting and enhancing the welfare of the population"⁷ Older people have more demand for health services as a result of a decline in their physical wellbeing. The Government must address this need by increasing funding to hospitals for the development, renovation and expansion of their health care facilities. The government is also likely to find an increased need for additional expenditure on aged care facilities. A side effect to the changing welfare mix will be an increased spending on childcare provision. As the increased dependency on younger workers, by aged persons, increases the working hours or labour force participation of younger people, parents with children may be forced back into the workforce and will require childcare facilities. This trend is becoming more apparent in the current economic situation, where housewives are increasingly participating in part-time work. The government will also need to invest in transport facilities to increase accessibility to essential services for elderly people. With the recent proposals to limit driving range for persons over 85⁸, the government will need to increase the accessibility, scope and efficiency of public transport, particularly in Bus and Rail services. This increased expenditure of the government will inevitably increase creating a problem in financing the expected budget deficits. This will be the main challenge for fiscal policy in the future.

Microeconomic Policies

The steady growth period experienced by Australia in recent years has been aided by the microeconomic reform instituted by the Hawke-Keating governments. However, the changing population structure will increase the need for microeconomic reform to boost production. Microeconomic reform has the benefit of increasing output, without increasing inflationary pressures, by acting on the supply side of the economy. As such, labour market reform can be used to increase the productivity of labour. In addition, skills programs can be used to address the current skills shortage, which is likely to worsen as the population ages and more skilled workers leave the workforce. The increasing need for skilled labour will be a driving force behind government microeconomic policies. Welfare system reform will also be a significant challenge for reformists. As the population ages, there will be an increased demand for pensions. Whilst the government's policy for self-funded retirement through a superannuation scheme will relieve some pressure of the aged pension system, the 2007-08 Budget predicts an increase in Social Security and Welfare to over \$100,000m by 2010⁹. To combat this, the government must implement policies to encourage more contributions to superannuation funds and other investment fund to ensure the social security system is not overburdened. The government, in the most extreme scenario, may wish to phase out the pensions system and leave Australians to fund their own retirements. However, this highly unlikely.

⁷ Productivity Commission and Melbourne Institute of Applied Economic and Social Research 1999, *Policy Implications of the Ageing of Australia's Population*, Conference Proceedings, AusInfo, Canberra., p264 (Productivity Commission 1999: Policy Impl.) quoting Evers 1988; Evers and Svetlik 1991

⁸ Road Traffic Authority (NSW) 2007, *Licensing of Older Drivers*, Discussion Paper, New South Wales, p7

⁹ See Figure 3

	Estimates		Projections		
	2006-07	2007-08	2008-09	2009-10	2010-11
	\$m	\$m	\$m	\$m	\$m
General public services	4,533	15,768	16,434	16,905	16,035
Defence	7,353	19,880	21,133	22,054	23,010
Public order and safety	3,314	3,670	3,741	3,780	3,762
Education	0,543	17,752	10,481	13,209	20,220
Health(a)	40,102	42,964	44,520	46,240	48,120
Social security and welfare(a)	53,215	96,450	100,733	104,751	108,536
Housing and community services	3,072	3,011	2,962	2,919	2,860
Recreation and culture	2,673	2,979	2,932	2,884	2,833
Fuel and energy	4,711	5,360	5,495	5,636	5,673
Agriculture, forestry and fishing	2,673	2,799	2,085	2,812	2,990
Mining, manufacturing and construction	1,884	2,029	2,018	1,949	1,843
Transport and communication	3,403	4,516	4,823	4,810	4,584
Other economic affairs	5,322	5,617	5,834	5,710	5,885
Other purposes	2,813	12,794	16,486	20,176	23,933
Total expenses	221,825	235,590	247,480	257,652	272,669

Figure 3: Table of Expenses

Source: Australian Government, *Budget Strategy and Outlook 2007-08*, Canberra, p6-15

Conclusions

Australia's aging population presents serious challenges to growth and economic policy decisions. Whilst the effect on productivity will be negligible, the aging population will result in a dramatic decline in economic growth. To counter, the government must employ both macroeconomic and microeconomic policies. The constraints on taxation revenue and substantial increases in expected expenditure will lead to recurring budget deficits. This must be redressed by the government else it becomes an economic problem in itself. The need for microeconomic reform to assist the economy to adapt to the changing population structure is also necessary with emphasis on social security reform. These challenges will significantly impact on Australia's future economic performance. Therefore, it is of utmost priority that the impacts on an aging population be recognised and addressed.