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Projections of the number of age pensioners and expenditure: 2004-2021

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Abstract

Australia's Age Pension is 95- years old. The Commonwealth, through the powers given by the 1901 Federation, legislated for the provision of age pension, which was introduced nationally in 1 July 1909. It is a major income support program, which paid around \$19 billion in 2003-04 to 1,866,000 pensioners.

The increasing ageing of the population over the next two decades has fiscal, economic and social implications. The purpose of undertaking these projections is to understand the impact of demographic change on future numbers of Age Pension recipients and expenditure. The results of the future likely outcomes in terms of number of pensioners and associated expenditures are important in informing policy and debate.

The paper will review trends in Age pension and labour market experiences of age pension population. Though demographic change is a significant factor, the main driver of Age Pension growth has been policy change.

The data sources are the Department of Community and Family Services (FaCS) administrative customer data, ABS labour Force Surveys and ABS estimated resident population and projections. The projection methods are:

- Application of constant age-sex specific take up rate to the ABS projected populations by age-sex groups. The 2004 age-sex- specific take up rates are assumed constant throughout the projection period so as to assess the impact of demographic change,
- The extrapolated historical series of age-sex specific take up rates were applied to the projected population to prepare an alternative projection, and
- Projections of maximum and part rate pensioners to project expenditure.

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Disclaimer

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Introduction

Australian demography has undergone substantial change since the beginning of the last century. Both fertility and mortality have declined to very low levels, with fertility declining to below replacement level (2.06 children per woman) since 1976. The combination of very low and declining fertility and mortality are bringing about substantial demographic changes, chief among them is the increasing ageing of the population, the decline in the size of the labour force, and changing family/household formation and living arrangements (Teskfaghiorghis 2001:44-52).

The pressures of population ageing will start to impact from the next decade as the first baby boom cohorts will enter retirement ages beginning in 2011. The concern with the increasing ageing of the population is its impact on fiscal sustainability of Age Pensions and health and aged care costs, the effect of the growing old-age dependency on labour force participation and productivity growth and other societal effects (CDFACS 2003).

The Department of Treasury's Intergenerational Report (2002) found that Age and Service pension payments would rise from 2.9 % of GDP in 2001-02 to 4.6 % of GDP in 2041-42, and that labour force participation of the 15 years and over population would decline from the next decade due to population ageing. The Report concluded that Australia is well placed to meet the challenges of an ageing population and that it is not expected to have a major impact on the Commonwealth budget for at least 15 years.

The purpose of preparing projections of the number of age pensioners and expenditure on Age Pension payments over the 2004-2021 period is to demonstrate the impact of demographic trends on future customer numbers and expenditure. The projections will contribute to an understanding of likely trends in Age Pension recipients and expenditure using alternative projections, 'which will allow governments to identify cost pressures and appropriately prioritise their efforts' (Teskfaghiorghis 2002:43).

Although a large number of factors affect future numbers of Age Pensioners and expenditure, the focus here is on the impact of demographic trends. The adoption of a methodology of fixed age-specific-ratios of Age Pension receipt allows the demographic effect to be isolated. However, as the projections are as good as the underlying assumptions, alternative projections are undertaken to give some insight into the range of likely outcomes.

Based on the adopted methodology, the paper deals with the following:

- Background on Age Pension and labour market experience of older workers
- Population assumptions
- The Age-sex profile of current Age Pensioners
- Projections of number of Age Pensioners
- Alternative projections
- Projection of expenditure
- Further research, and
- Conclusion

Background

This background provides context on the historical growth of numbers of Age Pensioners, expenditure and labour market experience of older workers. These are described in turn:

Age pension

As of July 2004, Australia's Age Pension is 95- years old. The Commonwealth, through the powers given to it by the 1901 Federation, legislated for the provision of age pension, which was introduced nationally on 1 July 1909. It was introduced to protect the living standards of older people and replaced earlier pension schemes run by some states.

Initially the eligible pension age was 65 years for both males and females but in November 1910, the eligible age for women was lowered from 65 to 60 years and it stayed at this level up to 1995. But from 1995 the eligible age for women is increasing by half- a year every two years up to 2013 where thereafter it will be 65 years as for men. The Age Pension has remained universal but it is targeted and means tested so as to provide a safety net in retirement only for those who cannot provide for themselves.

The Age pension payment through 1997 legislation was indexed to both the CPI and Male Total Average Weekly Earnings. It ensured that the single rate of age pension is at least 25 % of Male Total Average Weekly Earnings or the CPI if it is greater. Age Pension is the first and major income support program, which paid around \$19 billion in 2003-04 to 1,877,000 pensioners (761,000 males and 1,116,000 females).

The historical growth in numbers of age pensioners is displayed in Figure 1. There were only 34,300 pensioners when universal pension was introduced in 1909. The number of pensioners grew to 65,500 in 1910, which included 40,000 pensioners taken from NSW, QLD and VIC. The 200,000 mark was reached by 1935. These numbers doubled to 400,000 by 1954, 800,000 by 1971 and 1,600,000 by 1996. By the end of the 20th century they numbered 1,738,200.

Figure 2 presents trends in age pension take-up rates, defined as the numbers of pensioners divided by the age pension population times 1000, separately for males, females and both sexes. The total take-up rates initially gravitated around 30 % up to 1934, and then rose to 40 % in 1940, declined to 35-36 % in 1944-46. Thereafter it rose steeply to a peak of 78 % in 1979. It then declined gradually up to 1983 and then steeply to a low point of 64.5 % in 1991. It increased slowly to less than 70 % from 1992 to 2004.

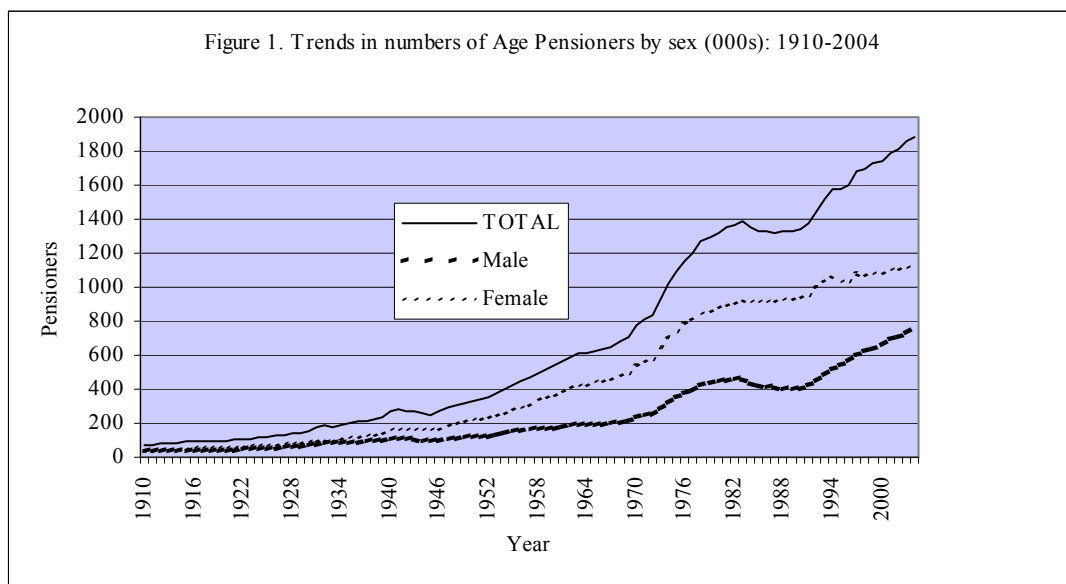
Although both male and female curves show strong pensioner growth since post- World War II, more rapid growth occurred in the 1970s (due to the easing and abolishing of the mean test in the early 1970s). Of the downs in the curves, particularly the take-up rates, the largest decline is the one that occurred since the late 1970s and early 1990s (due to the re-introduction of the means test).

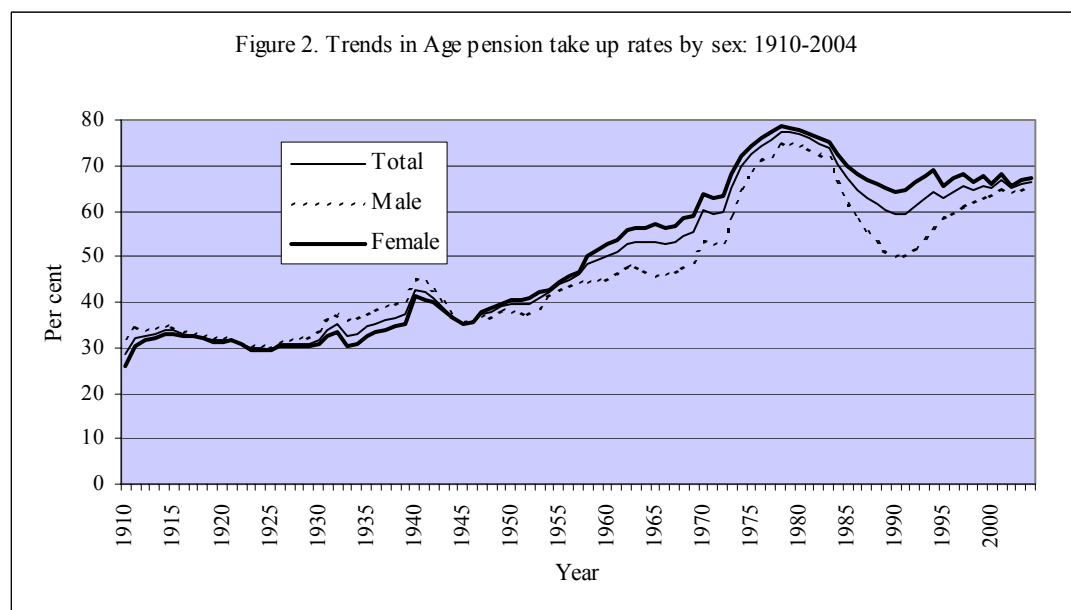
The swings in the numbers of age pensioners and take up rates are affected by policy changes. The key policies behind the major swings include the relaxation and abolition of the means test in the early 1970s and their reintroduction from the late 1970s to the mid 1980s. Other significant policies behind the growth since the late 1940s include the assessment of de facto relationships in the same way as married couples in 1947, the reduction in residence

qualifications from 25 years to 10 years in 1962 and the introduction of single and married rates of pension in 1963. The growth in up-take rates since the early 1990s, particularly for males, could be due to higher investment returns above the deemed income following the introduction of deeming rules in 1996 and the effect of the 2000 New Tax policy. A key policy that will affect future numbers of pensioners and expenditure is superannuation. Productivity award super of 3 % was introduced in 1986 and Superannuation Guarantee of 9 % in 1992. The latter now covers most workers.

While the numbers of male and female pensioners were comparable up to the mid 1930s, thereafter there were a much higher number of females than males. The take up rate curves show comparable rates up to the 1920s, higher male than female rates in the 1930s and up to 1945, a much higher female rates from the 1950s to the mid 1990s, and trending towards similar rates thereafter (as the pension age eligibility for female is gradually rising to equal that of males).

The higher female take up rates is primarily due to a lower proportion of females than females having private superannuation owing to their lower labour market attachment. But it is also due to some of the policy changes such as recognition of de facto relationships and the introduction of single and married rates that might have favoured women more than men.





Trends in expenditure

When Age Pension payments were initiated in 1909, the expenditure of the program was just around \$408,000 per year. The pension rate increased from 10 shillings (\$1.00) per week in 1909 to \$2.00 in 1929-39, \$4.25 in 1949, \$53.20 in 1979, \$129.20 in 1989, and \$232.10 in 2004 (for Single Age Pensioner).

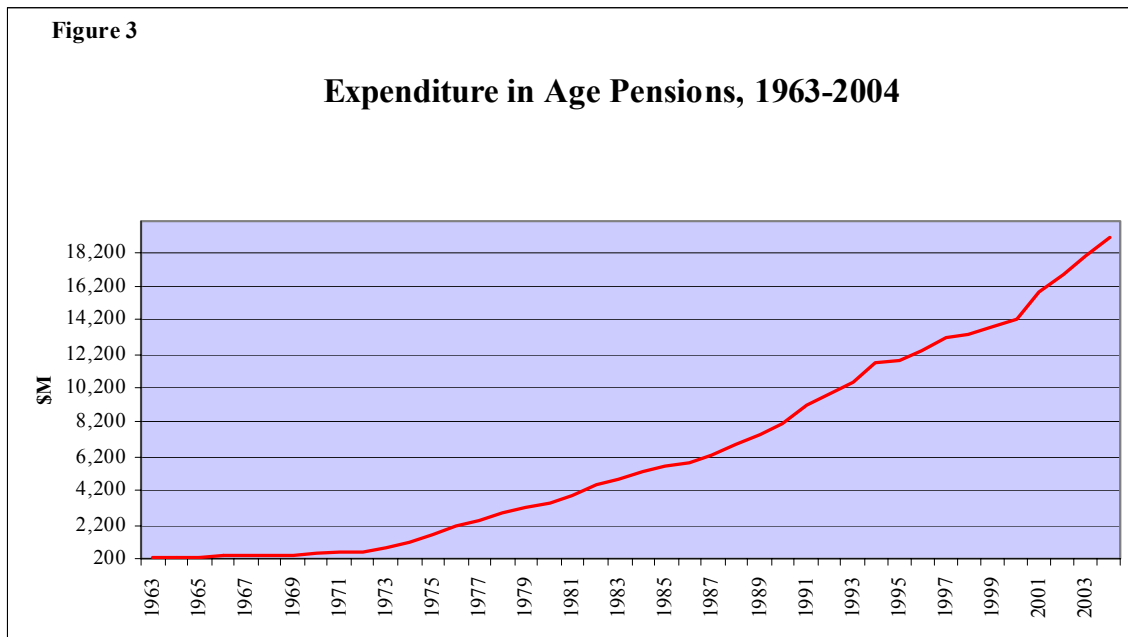
It is important to notice that the provision of age pensions for elderly people has changed considerably since the early 1900s. Over the years, the size and scope of the program have changed due to policy changes.

The growth in Age Pension expenditure from 1963 to 2004 is shown in Figure 3.

In 1963 the expenditure on Age Pension was \$315.6 million. The expenditure was more than doubled by 1972 (\$680.3m). It reached the \$2.2 billion in 1975. During the 1960s and 1970s the trend was upwards, partly reflecting the growing welfare state.

Between 1973 and 1987 that expenditure increased by 605 %. Then, over a period of six years (between 1988 and 1994) the expenditure only increased by around 68 %. The increasing female pension age eligibility from 1 July 1995 slowed expenditure growth, 15 % between 1996 and 2000. Between 2000 and 2004 expenditure grew by 33 % due to the effect of the new tax system and the indexation of pensions by using the Male Total Average Weekly Earnings.

The salient fact is that Age pension expenditure is growing strongly and accounts for around 33 % of the total income support expenditure. Part of the general growth in expenditure between 1973 and 2004 has been due to policies abolishing means test in the early 1970s, higher survival of older people, which means there are more older people claiming pension every year, the indexation of pensions to Male Total Average Weekly Earnings (MTAWE- since the 1990s) or CPI., which ever is higher, and the introduction of the new tax system in July 2000



Labour Market experience of older workers

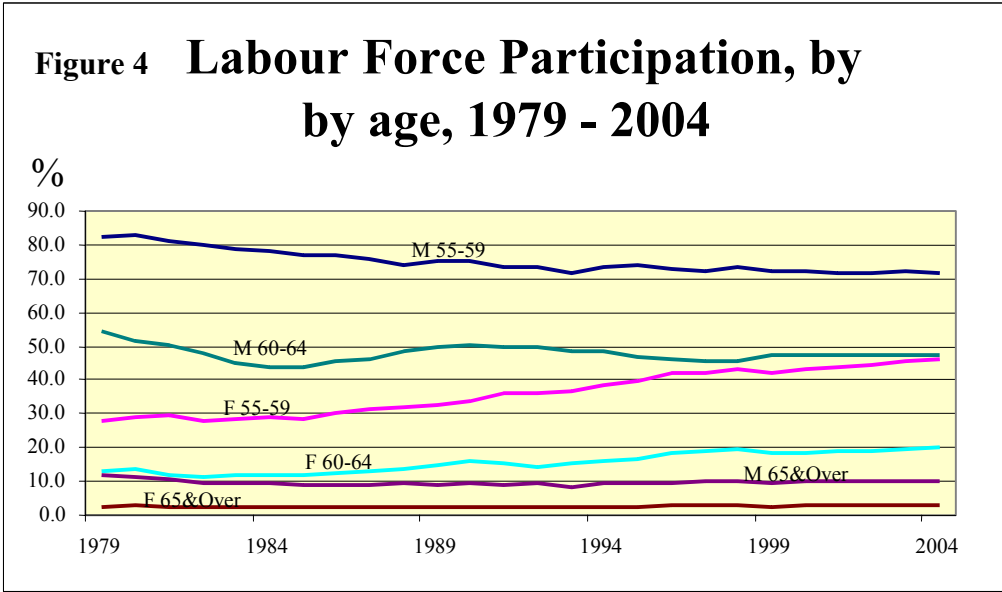
Labour market experiences of older workers impact on Age Pension take up rates. Stronger labour market attachment of older workers, other things remaining constant, would reduce pension take up rates. To provide some context to the trends in the growth of Age Pensioners described above, labour force participation, fulltime and part-time employment growth by sex for the age groups 55-59, 60-64 and 65 and over are described in turn.

Labour Force Participation

Though male labour force participation rates have remained much higher than females at comparable age groups, Figure 4 illustrates the strong growth of female labour force participation in the 55-59 and 60-64 age groups. By contrast, male participation rates in these age groups appeared to have stabilised recently. For example, the participation rate of females aged 55-59 years increased from 27.8 % in 1979 to 30 % in 1986, and 46.2 % in 2004. While the participation rate of males for the same age group fell from 82.1 % in 1979 to 74.3 % in 1986 and thereafter remained stable at about 71 % in 2004.

Female labour force participation rates of the 60-64 age group doubled from 10 to 20 % over the period, while males' rates changed little, hovered at about 50 %. While there is hardly any labour force participation of the 65 and over female population, the rates for males remained constant at about 10 %. The different trends in labour force participation by sex are changing the labour force composition of older workers.

There is no doubt about the increasing importance of elderly women in the labour force. This increased participation of elderly women in the labour force is growing both in quality and the quantity of the labour supply.



Employment of older workers

Figure 5 shows trends in fulltime employment rates by sex-age groups, calculated as a ratio of the number of persons employed full time to the population of a corresponding age group multiplied by 100. It is interesting to note that while male fulltime employment rates for the 55-59 and 60-64 age groups have recently stabilized from the highs of the late 1970s, the rates for females aged 55-59 years have been gradually rising, though from a low level.

The rates for males aged 55-59 years decreased from 75.3 % in 1979 to about 60 % in 1992 and gradually rose to 62.1 % in 2004. Male rates of the 60-64 year olds declined from 49.9% to about 40.0 % in 1983 and remained at slightly below 40.0 % thereafter. For the 65 years or older, the rate declined from 7.1 % in 1979 to 5.1 % in 2004.

Females fulltime employment rate of the 55-59 years has been gradually rising from 16.3 % in 1979 to 26.6 % in 2004. Fulltime employment of the 60-64 females has remained very low, though recently it is slowly trending upwards. There is hardly any fulltime employment among females aged 65 years and over.

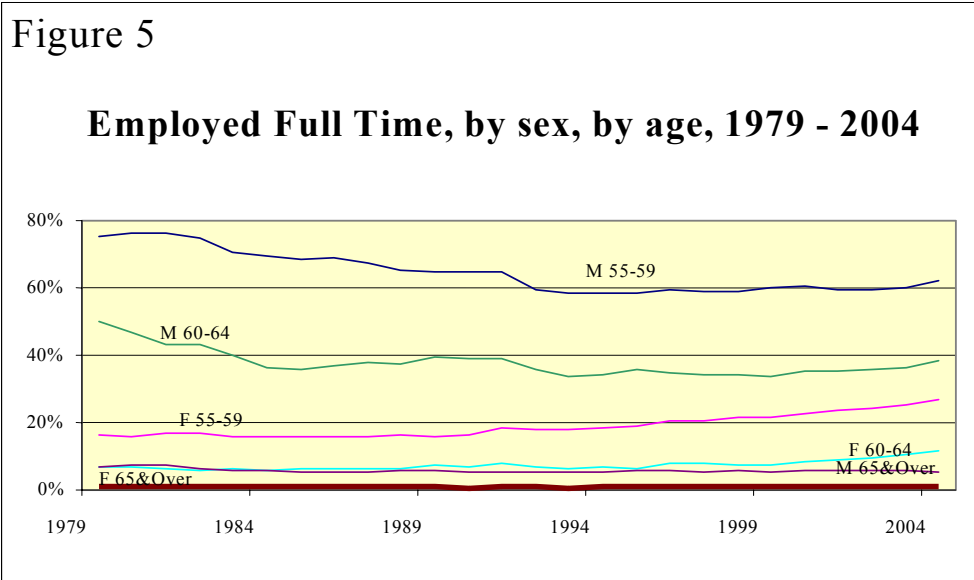
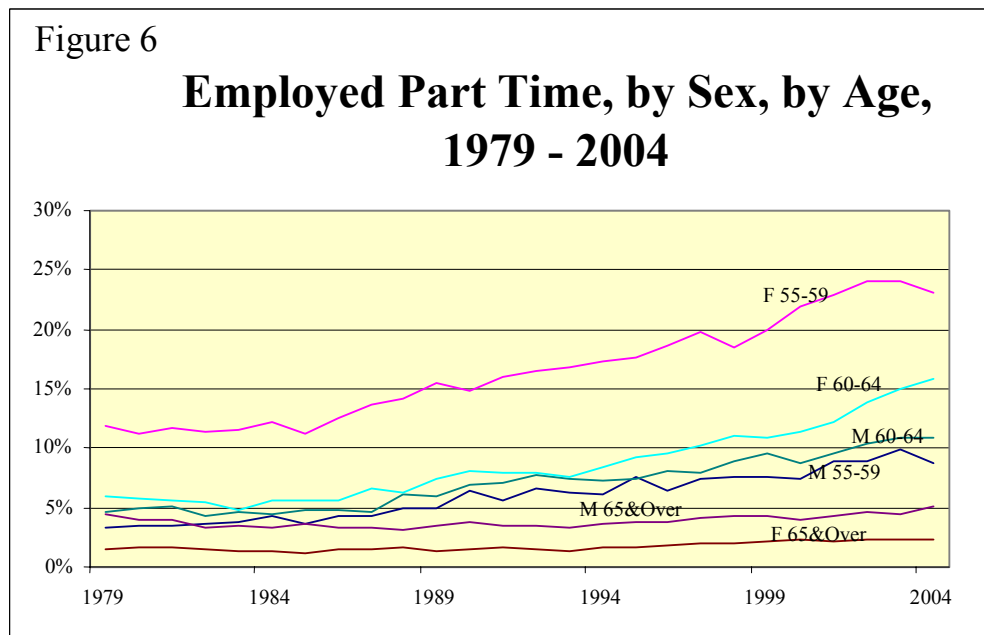


Figure 6 shows trends in part-time employment rates separately for sex-age groups.



The results in Figure 6 show higher and strong part-time employment growth of females aged 55-59 and 60-64 years than that of males during the period 1979-2004. Female part-time employment is more significant in the 55-59 age group, which increased from 11.8 % in 1979 to 23.1 % in 2004. However, in terms of part-time employment gains, it is a stronger for the 60-64 year olds, though from a low level, which increased from 5.1 % in 1979 to 15.8 % in 2004. Growth in female part-time employment occurred since the mid 1980's. A small proportion of females aged 65 years or older worked part-time, which slightly increased from 1.5 % in 1979 to 2.3 % in 2004.

The trends and levels of male part-time employment rates of those aged 55-59 and 60-64 years have remained similar over the period, which both age groups recorded noticeable growth since the mid 1980s. For the 55-59 age group part-time employment increased from 3.3 % in 1979 to

8.7 % in 2004. The corresponding figures for the 60-64 age group were 4.6% and 10.9%. The 65 years or older had very low part-time employment rates, which remained at about 5.0 % for males and 3.0 % for females.

Interpreting the factors economic cycles, demographic changes, increasing education levels, age pension policy changes, pension rules, superannuation, etc. are behind these trends. However, this is not the focus of this paper. However, it is obvious that there is a tendency among the 55 to 64 years olds, to increase or maintain their level of labour market attachment. The level of labour market attachment of the 65 years and older has remained very low, particularly fulltime employment.

The above-mentioned trends have already begun to affect the employment composition of and nature of work of the Australian older workers. So, there is little doubt, that the emerging ageing society will bring more changes to the Australian labour market. This will be in the direction of a move from full time jobs towards more part time jobs among older workers, as they make the transitions to retirement and/or continue to work in their retirement years.

Basically, in order to increase labour supply and engage the elderly socially and economically so as to moderate any economic or social burdens of ageing, Australia has to develop policies that encourage labour force participation of mature and age pension population. These include longer working lifetimes to reflect increasing life expectancy and incentives for older works to take more flexible part-time jobs. It means that in the future, the ageing of the population should not be seen as a detriment for labour force supply.

Population projection assumptions

The key demographic factor that will influence the future numbers of pension age population over the 2004-2021 is mortality, as fertility will have no effect on the number of adults and mature age people who will enter retirement ages in the next twenty years. Overseas net migration could have some effect if a significant number of persons in pre-retirement and retirement ages are involved in the migration.

Thus the main demographic driver will be mortality. There have been significant reductions in mortality as reflected by ever-increasing life expectancies. Male life expectancy at birth increased from 55.2 years in 1901 to 77.4 years in 2000-02. For females it increased from 58.8 years to 82.6 years (ABS 2004: 103, ABS 2002 72-73). Recently the improvements in survivorship have been greater for males than females. Male life expectancy at birth increased by 6.15 years between 1982 and 2000-02 compared to 4.33 years for females. Life expectancy at age 60 increased by 4.19 years for males and 3.15 years for females (Calculated from ABS 2002:74). The probability of survival for males from birth to age 80 has increased from 31.9 % in 1982 to 52.1 % in 2000-02 and for females from 55.4 to 68.9 % (ABS 2003: 75).

The previous ABS 1999-2101 projections have underestimated the reductions in mortality (Booth and Tickle 2003). By applying a new method of forecasting mortality that depends on past trends, Booth and Tickle showed that life expectancies at birth were underestimated. Compared to ABS projections female gains in life expectancy at birth (e_0) by 2022 was underestimated by about 2.1 years and by 1.1 years for males (calculated from Booth and Tickle 2003: Table 1). ABS projected numbers of the 65 years and over population was lower than that

of Booth and Tickle by about 108,000. Most of the underestimation is of the 85 years and over population.

The current ABS 2002-2101 Population Projection has two mortality assumptions instead of one used in the previous one. These are:

1. Declining improvements in life expectancy, which increases at a constant rate from its 1999-2001 level of 77.0 years for males and 82.4 years for females up to 2005-06 to reach 78.68 years for males and 83.79 years for females; and thereafter gradually declines to reach 83.79 years for males and 86.04 years for females by 2020-21.
2. Constant improvements in life expectancy which rises from 78.68 years in 2005-06 to 83.18 years in 2020-21 for males and from 83.79 to 87.54 years for females. These projected figures for 2020-21 are higher than that of Booth and Tickle forecasts' by 0.44 years for females and 1.18 years for males.

Of the three ABS' projections, Series A incorporates constant improvements in life expectancy at birth and 'Series B and C' incorporate declining gains in life expectancy after 2005-06. The projection assumptions and projected population are summarised in Table 1 as follows:

Table 1. ABS Projection assumptions & Projected population

Series	Assumptions				Projected population at 2021	
	Total fertility rate	Net overseas migration	e ₀ Males, 2021	e ₀ , Females, 2021	Total (000s)	65+ (000s)
A	1.8	125,000	83.2	87.5	24,461.1	4,541.5
B	1.6	100,000	81.7	86.0	23,368.4	4,443.4
C	1.4	70,000	81.7	86.0	22,267.1	4,409.5

As seen from the projected results, Series A provides a higher estimate of the 65 years and over population, which is based on constant improvements in life expectancy at birth. The difference between Series B and C reflect differences in migration assumption, as mortality is held constant.

The choice is between Series A and B for the projection of the numbers of Age Pensioners. Series A is the most likely projection given that it is consistent with the steady improvements in life expectancy by sex observed between 1971-2001 (ABS 2003: 14). The same gains prevailed over the 1982 to 2000-02 period (Calculated from ABS 2002: Table 5.31). The projected life expectancies based on Series A are also fall within the 95 % confidence interval estimates of Booth and Tickle (2003: Table 1) projection. Hence ABS Projection Series A is used as a basis for the projection of numbers of age pensioners based on maintaining age-sex-specific rates of receipt constant throughout the projection period.

Patterns of income support

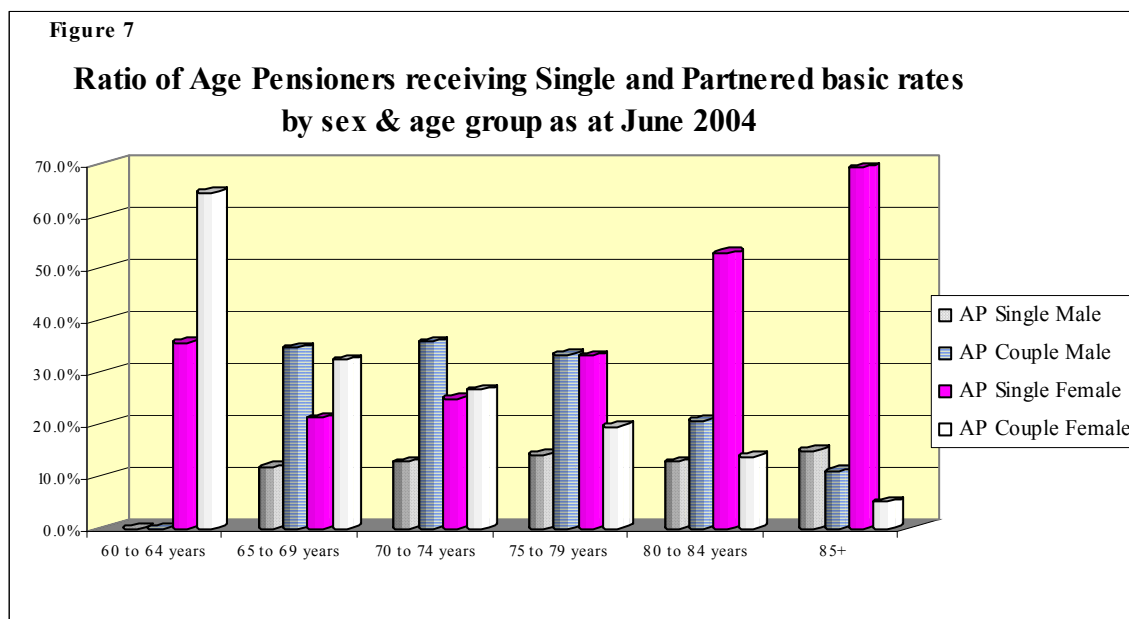
There were 1,877,000 Age Pensioners as at June 2004, of which 59.5 % were females (1,115,900) and 40.5 % males (761,000). As of June 2004, there were an estimated 240,000 Service Pensioners of the Department of Veteran Affairs (DVA) that are not included in these figures.

Two-thirds of the 65 and over population received Age Pension. An apparent aberration in the distribution shown in the table is the fall in the rates for some groups over 75 years, particularly the 80-84 age group, when compared with the high rate of the 70-74 age group. This is a cohort effect where the older age groups were in receipt of DVA Service Pensions at a higher rate.

Composition of Age Pensioners by Single or Partnered rates

Figure 7 illustrates the ratio of Age Pensioners receiving Single or Partnered rates to the relevant age pension population in each age group by sex as at June 2004. There are a number of important points:

1. A relatively high proportion of males than females received the partnered rates;
2. the proportion of males receiving the single rate is very low compared to females; and
3. the proportion of females receiving single rate shows a U curve. This proportion declines from the high of about 35% at the 60-64 age group to low levels in the 65-69 and 70-74 age groups. Then rises markedly to reach 50% in the 80-84 age group and close to 70% in the 85 years & over.



In general, the number of females receiving the single rate is 1.3 times more than those receiving the partnered rates. In the case of males, we can see an inverse effect, the number of males receiving the partnered rates is 2.3 times more than to those receiving single rates.

In this context, it is also important to point out that the sex gap is greater as they get older. The main factor explaining the high female-to-male ratios at older ages is the gender gap in mortality. Of course, as we know, females enjoy higher survival rates than males.

Table 2. Numbers and proportions of Age Pensioners by age sex-groups: June 2004

Age group	Number of pensioners		Proportion of population in receipt of pension (%)	
	Male	Female	Male	Female
62.5-64		127,053		49.3
65-69	237,274	273,452	64.4	72.4
70-74	229,200	243,769	76.4	74.8
75-79	174,934	192,670	71.0	63.9
80-84	70,081	138,429	45.2	60.0
85+	49,547	140,613	52.3	68.9
Total	761,036	1,115,986	65.3	65.7

Projections of income support

The projection of age pensioners is based on the ABS 2002-2101 Population Projection Series A and constant age-sex specific-ratios of pension receipt. The results are presented in Table 3. The number of Age Pensioners would grow from 1,877,022 in 2004 to 2,211,500 in 2011 and 3,058,600 in 2021. These figures represent a growth of 17.8 % between 2004 and 2011, 38 % between 2011 and 2021 and 64 % over the whole period.

Male Age pensioners would grow from 757,400 in 2004 to 944,800 in 2011 and 1,381,500 in 2021. The number of female pensioners would grow from 1,112,300 in 2004 to 1,266,700 in 2011 and 1,677,200 in 2021. Growth would be more rapid for males than females increasing by 82 % over the period compared to 51 % for females. The slower female growth is the effect of rising pension age eligibility to 65 years by 2013.

Though the 65-74 age group pensioners would remain the largest group in absolute terms, relative growth rates vary by age group. Pensioners aged 85 years and over would grow more strongly than younger age groups. The 85 years and over would grow by 46 % between 2004 and 2011 and by 43 % between 2011 and 2021. The 65-74 age group would grow more strongly than the 75-84 age group in 2004-2011, 18 % versus 8 %. But in the 2011- period they both grow strongly, the 65-74 age group by 37 % and the 75-84 age group by 39 % (see Figure 8).

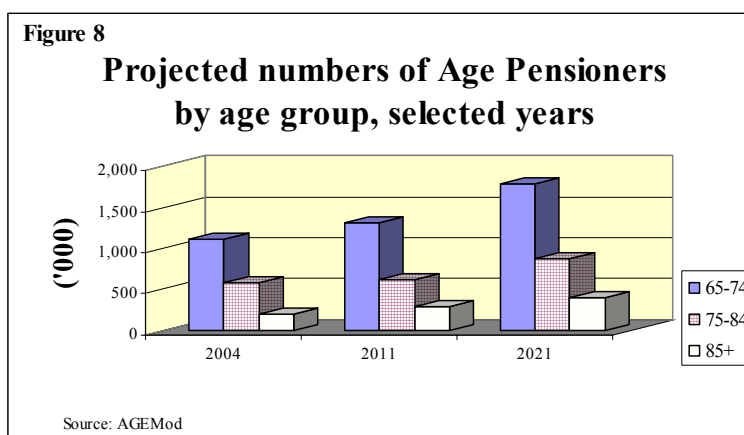


Table # 3**Projected Age Pensioners by age and sex**

	2004 ^a	2006	2011	2016	2021
Male					
65-69	237,274	254,426	310,527	393,352	411,884
70-74	229,200	232,660	278,476	343,292	438,178
75-79	174,934	181,815	186,737	227,151	284,322
80-84	70,081	77,168	88,736	94,162	117,872
85 and over	49,547	57,727	80,327	105,546	129,240
Total	761,036	803,796	944,803	1,163,504	1,381,496
Female					
62-64	127,053	112,407	83,739		
65-69	273,452	289,600	350,791	457,533	486,281
70-74	243,769	246,966	286,610	348,907	456,614
75-79	192,670	194,398	193,648	226,862	278,554
80-84	138,429	146,035	154,365	156,945	187,026
85 and over	140,613	156,384	197,513	235,800	268,663
Total	1,115,986	1,145,789	1,266,666	1,426,047	1,677,139
Total					
62-64	127,053	112,407	83,739		
65-69	510,726	544,026	661,318	850,885	898,165
70-74	472,969	479,626	565,087	692,199	894,793
75-79	367,604	376,213	380,386	454,013	562,876
80-84	208,510	223,203	243,100	251,107	304,898
85 and over	190,160	214,111	277,839	341,346	397,903
Total	1,877,022	1,949,585	2,211,469	2,589,550	3,058,635

Source: AGEMod, SuperStar, DVA, ABS- Series A

^a: Actual- Source: SuperStar**Alternative Projections**

The above results are based on the application of constant age-sex specific rates of pension receipt to the corresponding ABS Series A projected population. This section examines what happens to future numbers of age pension recipients if alternative projections are made based on different population assumptions or changing rates of age-sex specific receipt rates. These are discussed in turn.

Alternative mortality assumptions: The above results hold if the high mortality assumption, that is constant improvements in life expectancy at birth by sex continues throughout the projection period. However, this depends on improving medical prospects and adoption of healthy lifestyles for further gains in the health and survival of the elderly population. It is possible that the survival gains assumed in Series A may not be achieved. What happens if mortality reductions occur as assumed in ABS Series B, that is an increase in life expectancy at

birth of 0.30 years for males and 0.25 years for females per year continuing until 2005-06 followed by a gradual decline in improvement over time (ABS 2003: 14). The results were re-calculated by applying the constant age-sex specific rates of receipt to the projected Series B projection. Attachment 1 presents comparisons of the projected numbers of age pensioners according to Series A and Series B. The results show that by 2021 there would be 41,100 fewer female age pensioners, of which 23,300 were aged 85 and over, under Series B. The results for males were 30,4000 and 16,200, respectively. In total, by 2021, there would be 71,500 fewer customers under Series B than under Series A. Under a longer time horizon, the difference in customer numbers between the two projection series will grow substantially.

Alternative age-sex specific rates of receipt:

The projections were based on constant age-specific rates of pension receipt in order to show the effects of demographic change on future pensioner numbers, holding other variables constant. However, besides demographic factors, a number of variables affect future pensioner numbers and pension- take-up-rates. Key variables include changes in age pension policy, economic policy, superannuation policy, economic performance and business cycles.

Table 4

Summary of Projected Age Pensioners by using different methodologies

Year	Projected Customers				Differences against "Constant 2004" projections		
	Constant 2004	Trendline logarithmic	Extrapolated Official Estimates (linear trend)	Best Fit trend	Trendline logarithmic	Extrapolated Official Estimates (linear trend)	Best Fit trend
2003-04	1869.6	1,869.6	1,869.6	1,869.6			
2004-05	1926.4	1,876.6	1,899.6	1,906.6	-49.7	-26.7	-19.8
2005-06	1949.6	1,888.0	1,927.7	1,934.9	-61.6	-21.9	-14.7
2010-11	2211.5	2,176.3	2,091.6	2,091.6	-35.2	-119.9	-119.9
2015-16	2589.6	2,617.5	2,247.8	2,577.8	28.0	-341.7	-11.8
2020-21	3058.6	3,091.4	2,404.1	3,043.6	32.8	-654.6	-15.1

Source: AGEMod, ABS-Series A, Official Estimates (2005-09).

The sensitivity of the projection results to changes in age-specific rates of receipt are presented in Table 4. One approach followed is the extrapolation of the historical age-sex-specific rates of receipt series using best fitting curves. Another approach is to estimate future customers by extrapolating linearly only the total customer numbers, as followed in the official linear trend estimates over few years. This approach does not take into account changes in the age-sex structure of the population or changes in age-specific rates of receipt. This approach is only good over a short time period, as it provides unrealistic estimates over medium to long-term (see table).

The projection results are compared to those of the constant age-sex specific rates of receipt. Because of the volatility in the historical series, there does not emerge a clear trend in the age-specific rates of receipt. Because of that the historical extrapolation results are consistent with the constant rates assumption.

PROJECTION OF EXPENDITURE

This section first describes the assumptions for expenditure projects followed by presentation and discussion of the results.

Assumptions for the projected expenditure

The age pension expenditure will be projected on the projected number of age pensioners discussed in the previous section using the following assumptions:

- The fundamental assumption is that the structure of the basic rate continues as at June 2004. The projections are based only on the basic rate (it excludes Rent Assistance and Pharmaceutical Allowance). The structure of the basic rate will remain constant but total expenditure will be affected by the projection of the customers, the ratio of pensioners receiving maximum and reduced rates, and the single and couple rates.
- The model allows for assumptions related to Superannuation that will affect the maximum and reduced rates. At the moment, the assumption is that Superannuation will not affect the current structure in the next four years¹. It needs to work for the assumptions of the following 10-15 years². However, for the effects of showing how the model works, it has been assumed that the superannuation will affect the max and reduced rates ratio by 1% year from 2009 up to 2021.

Of course, small changes in this assumption will greatly affect the projections. If instead of using 1%, we assume that the Superannuation will affect the ratio of the maximum and reduced rate by 2%, the expenditure in 2021 could be substantially lowered from \$56.1 billion to \$55.4 billion.

- The projected expenditure were produced using varying assumptions about the growth paths for the rate of change in the inflation rate measured by the Consumer Price Index (CPI) and Male Total Average Weekly Earnings (MTAWE). The model applies the CPI and MTAWE rates up to 2010 as provided by Treasury. Then, it is assumed the 2010 rates to remain constant for the rest of the projection period.
- The maximum and average reduced rates by age group are used as at June 2004. These rates are indexed by CPI and MTAWE. Rates dollar projections were produced by multiplying the constant dollar rates by projections for the CPI and MTAWE.
- The ratio of customers receiving single or partnered age pension (by age group) as at June 2004 is also applied.
- Projected expenditures were made by multiplying all the above ratios by the projected pensioner numbers.
- As in the customers module, the model allows for changing trends in any of the above ratios or rates.

¹ There is plenty of literature around that can substantiate this assumption (a great effect of the superannuation is not expected for the maximum and reduced rates ratio for the next 3 or 4 years).

² We are still waiting for data from Treasury

Sources of Data

- The current structure of the basic rates by age and sex (as at June 2004), maximum and reduced rates, ratio of customers receiving single and partnered age pension data are from the Centrelink "SuperStar" data base.
- The projected customers are from the AGEMod model (as explained in previous Section).
- MTAW and CPI rates (up to 2010) are from Treasury.

Projections of Expenditure

Table 5 and Figure 8 depict the results of the expenditure projections for the old-age pension program. These projections are only for the basic rate, without including projections of expenditure for Rent Assistance and Pharmaceutical Allowance.

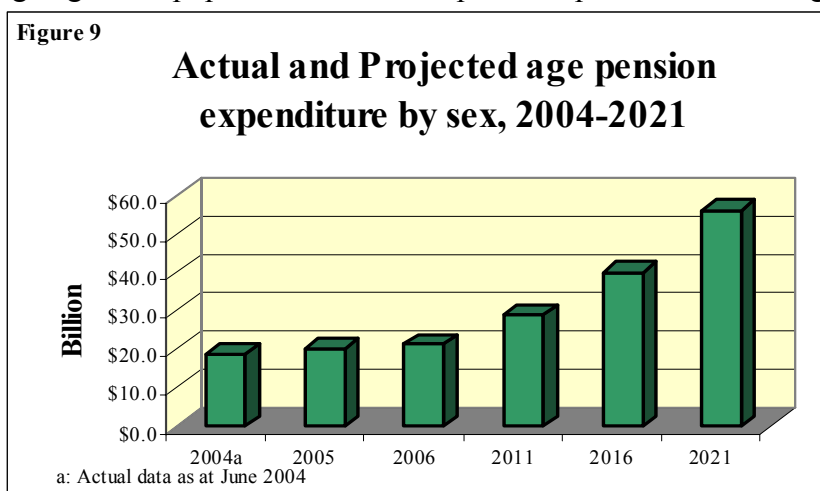
Table 5

Actual and Projected age pension Expenditure by sex, 2004 to 2021
(\$Million)

Year	Female	Male	TOTAL
2004 ^a	\$11,373.800	\$7,205.476	\$18,579.276
2005	\$12,013.823	\$8,201.025	\$20,214.849
2006	\$12,510.792	\$8,733.729	\$21,244.521
2011	\$16,522.472	\$12,250.547	\$28,773.019
2016	\$22,096.930	\$17,892.874	\$39,989.804
2021	\$30,840.406	\$25,239.619	\$56,080.025

Source: AGEMod, ^a: Actual (source: SuperStar)

As anticipated, these expenditure projections will continue to increase directly with the ageing of the population. Naturally, the projected expenditure on old-age pensions will increase in line with the increasing number of persons over retirement age (as the number of people eligible to receive age pension will increase considerably). Basically, the model tries to predict how the ageing of the population will affect public expenditure for the age pension.



Those expenditures are projected to reach \$20.2 billion in 2005 and \$56.1 billion in 2021 (see Table 5 and Figure 9)(All projections of expenditure are indexed- see assumptions). It should be

noted that long-range projections of the expenditures should be viewed cautiously, because such projections cannot be made with great certainty due to economic changes as well as policy changes. However, the bottom line of all this is that it is extremely hard to argue that the projected expenditure will not increase to these levels under the assumptions used in the model.

Conclusion

The projections showed that the numbers of Age Pensioners would increase by 64 % from 1,869,600 in 2004 to 3,058,600 in 2021. Expenditure on Age Pension is projected to increase three-fold from \$18.6 billion in 2004 to \$56.1 billion in 2021. Thus increasing expenditure on Age Pension will emerge with the increased ageing of the population. Increasing the working-age employment rate, through both reductions in unemployment rate and increases in labour force participation rates, though, may offset the fiscal implications of future increases.

The labour market trends reviewed showed that labour force participation of the 65 years and over is very low, particularly females. Full time employment rates of males in pre-retirement ages has stabilised and has even shown small reversals. Part-time employment of persons in retirement ages has been increasing recently, through from a lower levels for males. These upward trends could continue further with policies and programs that encourage labour force participation of mature persons.

In order to increase labour supply (and in order to moderate any economic burden of ageing), Australia has to develop more older-worker friendly policies such as: longer working lifetimes to reflect increased life expectancy, incentives for older workers taking part time jobs, special working arrangements for women with children less than four years old, training for unemployed youth, and re-skilling of older workers. There will need to be a shift towards maintaining older workers to work longer. Working conditions should allow for older workers to do part- time jobs or work from home.

The extent of labour force participation at the various ages, including the older ages, and the ages of retirement will influence the composition of the labour force. The demographic dimension becomes particularly important for the composition of labour market with the first baby-boomers soon reaching retirement age.

Further research

The next stage of the research is to project superannuation. Unfortunately, the projection of superannuation balance will be problematic both on data and methodological grounds. It will be important to quantify when and by how much superannuation will contribute to reduction of age pension expenditure. In the time frame we are projecting superannuation that may not have much of an effect on the total customer numbers but may affect the projected expenditure for those projected customers who receive part-rate due to the superannuation.

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