Comments on Intergenerational Report, 2002-03

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Introduction

The Government's Intergenerational Report, tabled as one of a series of 2002 Federal Budget papers is the first in what may become a series of reports of this nature. Such a report is now required from time to time by the Government's *Charter of Budget Honesty Act 1998*. The report (Table 13) highlights the concern that the future ageing of the Australian population may over-tax the workforce. So-called 'demographic spending' on the part of the Commonwealth is predicted to rise from 13.9 percent of GDP in 2000 to 19.2 percent by 2041, a rise of just over five percentage points. This prediction is derived from baseline projections of demographic and economic trends. The impact of alternative demographic and economic scenarios is summarised in Table 15 of the report, with a downside of an additional two-and-a-quarter percentage points and an upside of a reduction in demographic spending of just under one-and-a-half percentage points, relative to the baseline scenario.[1]

The results of the report derive from the application of a complex model of future demography, future people-related federal outlays and future labour force trends, including labour productivity, labour force participation rates and unemployment. Clearly, over a 40-year period, there are substantial possibilities for variation in these trends. In general, we conclude that the report is conservative in its assumptions about possible variations as only relatively small variations from recent trends are tested. Future trends in all of the parameters of the model are based upon some form of extrapolation of past time trends. This means that what is presented is a projection of what will happen if demographic, health and economic trends and government policies remain much the same as they have been in the past. This approach is taken despite the fact that the report itself calls for policy initiatives such as encouraging mature-age employment that would lead to changes in the assumed parameters. It is our view that there is a range of possible policy initiatives that could significantly alter the assumptions of the model. These are discussed below.

It is important also to realise that the outcome addressed by the report is the balance of Federal revenues and expenditure. The report does not deal with State and Territory budgets or with household budgets. However, given the cumulative impact of the productivity growth that is assumed in the report, output per worker doubles in the 40-year period and, accordingly, households would have considerably higher real

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[1] These estimates come from summing across the "Total" rows in Table 15.

incomes. Also, as the costs of children are primarily private costs rather than public costs, households on average would have lower child-related costs as the ratio of children to workers falls. If the sizeable real increase in household incomes leads to higher consumption expenditure, as is likely, then GST revenue would increase commensurately. The report, therefore, draws a picture of ageing leading to severe pressure on the Federal budget while the living standards of Australian households, including households of aged persons, and State revenues increase substantially. This distributional issue is a matter we think should have been addressed more explicitly in the report.

While all of the major assumptions of the model are provided in the report, the workings of the model and numerous minor assumptions are not made explicit. This means that we are only in a position to make broad comments on the outcomes. We are not in a position to re-run the model with different assumptions. The assessment method we use, a proportional approach, is described in the following section.

The Components of Increased Fiscal Burden

In order to assess the impact of the projections on the predicted fiscal burden, defined as the ratio of demographic spending to GDP, it is useful to decompose it as follows.

$$\text{Fiscal Burden} = \frac{\text{Cost of dependents}}{\text{Gross Domestic Product}} = \frac{\text{number of dependents x average cost}}{\text{number employed x productivity}}$$

$$= \frac{\text{dependents}}{\text{population 15-64}} \; x \; \frac{\text{average cost}}{\text{productivity}} \; x \; \frac{1}{\text{participation rate}} \; x \; \frac{1}{(1 - \text{unemployment rate})}$$

$$= \frac{(\text{dependency ratio}) \; x \; (\text{cost-productivity ratio})}{(\text{participation rate}) \; x \; (1 - \text{unemployment rate})}$$

(1)

Using acronyms for each variable, we can rewrite this relationship as:

$$FB = (DR \; x \; CPR) \; / \; (PR \; x \; [1-UR]) \qquad (2)$$

The terms are defined as follows:

DR is the dependency ratio: dependents relative to the population aged 15-64 years

CPR is the cost-productivity ratio: the ratio of the average fiscal cost per dependent relative to the average productivity of the employed.

PR is the participation rate: the ratio of the labour force to the population 15-64 years.

UR is the unemployment rate: the ratio of unemployed to the labour force.

We can decompose the percentage change in the fiscal burden in terms of the percentage changes in the four components, as follows:

$$\text{\% change in FB} \; = \; \text{\% change DR} \; + \; \text{\% change CPR} \; - \; \text{\% change PR}$$
$$+ \; \text{\%-point change in UR} \qquad (3)$$

Note that in Formula (3), changes in the unemployment rate enter as percentage-point changes rather than percentage change in [1-UR]. This approximation is valid for relatively low rates of unemployment.

The demographic component of predicted changes in the fiscal burden is the anticipated change in the dependency ratio. The Report's baseline demographic projection is given in Table 3. It indicates that the aged dependency ratio is likely to double over the next forty years – from its current level of twenty percent to forty percent in 2042. The projected decline in numbers of children suggests that the total dependency ratio (populations 0-14 & 65+ / population 15-64) will increase by one third, from 48 per cent to 64 per cent.

A one third rise in the dependency rate will, according to Formula (3), increase the fiscal burden by one third – if the other ratios do not change. This projected demographic effect is clearly the driving force behind the Report's baseline projection (Table 13) of a 38 per cent rise in the fiscal burden, from 13.9 per cent in 2000 to 19.2 per cent of GDP.

The Report gives estimates, under different scenarios, for the <u>percentage point changes</u> in the fiscal burden for 2042. That is to say, a rise in the burden from 20 per cent of GDP to 22 per cent is represented not as a 10 per cent rise but as a rise of two points. To facilitate comparisons, we can rewrite (3) in terms of percentage point changes in the fiscal burden, relative to the baseline prediction:

$$\%\text{-point change in predicted FB} = [\% \text{ change DR} + \% \text{ change CPR} - \% \text{ change PR} + \text{change UR}] \times 0.192 \quad (4)$$

The number, 0.192, appears in this formula as the predicted fiscal burden under the report's baseline scenario.

Formula (4) enables a direct comparison of fiscal effects for changes in assumptions about the four components: demographic structure, the relationship between costs of dependents and productivity of workers, the labour force participation rate and the unemployment rate. The impact of each of these components is considered in the following sections.

The Demographic Structure

The report makes assumptions about future levels of fertility, mortality and annual net migration. In the very long-term, past levels of fertility are the principal determinant of the age structure of the population. The ageing of Australia's population addressed in this report is the result of the replacement at old ages of the small cohorts born in the 1930s and 1940s by the large, baby-boom cohorts born in the 1950s and 1960s. That is, the age structure of the population in 2042, the last projection year in the report, has a 100-year history to it. We make this point to indicate that the effect of changes in fertility upon the age structure of the population is very long term in nature. While variations in fertility from the level assumed in the report would have a large impact on age structure over the next 100 years, their effects in the next 40 years would be small.

The report projects fertility to fall from its present level of 1.75 to 1.60 births per woman. An alternative fertility scenario is provided in the report where fertility falls further to 1.50 births per woman. In the present state of knowledge, either of these outcomes is possible. The fertility rate in Canada, a very similar country to Australia in regard to birth determinants, was already 1.52 in 1999. It remains possible that Australia's fertility could fall below 1.5 births per woman or that the fertility rate could stay roughly where it is now. This is an area where the mix of policies can affect the outcome. However, over the next 40 years, whether fertility is 1.3 or 1.8 births per woman makes little difference to the dependency ratio component of our formula. The report projects a dependency ratio of 0.65 in 2042. If fertility were to fall to 1.3 instead of to the report's assumed 1.6, the dependency ratio would be 0.63. If fertility rose to 1.8, the dependency ratio in 2042 would be 0.66. A fertility rate of 1.3 births per woman reduces the dependency ratio by 2040 because there would be fewer children to support. Soon afterwards, however, the impacts of low fertility on the labour supply and on the ageing of the population would become severe. This is an interesting example of the importance of the time frame that is used in the analysis. A direction (lower fertility) that is favourable to the Federal budget up to 2042 would reverse to have a heavy negative impact for subsequent generations. Thus, the end point chosen for the projection makes a difference to the conclusions that are drawn. Restricting ourselves to the 2042 timeframe of the report, however, we consider that changes in fertility are not an important source of potential variation from the report's findings. A caveat to this conclusion is that our formula does not distinguish between children and aged people in the dependency ratio. Compared to the report's baseline scenario, a fertility rate of 1.3 would add about two percentage points to the aged dependency ratio by 2042 while reducing the child dependency ratio by about four percentage points. We are not in a position to consider the relative costs to the public purse of children and older people.

The assumptions about future mortality that are made in the report differ somewhat from the assumptions made by the Australian Bureau of Statistics in its most recent projections of the Australian population. The essential difference is that the Intergenerational Report assumes that the expectation of life for women in 2042 will be about two years higher than the ABS has estimated. The level for men is much the same in the two projections. If the report's expectation of life for women was replaced with the lower estimate contained in the ABS projections, the dependency ratio in 2042 would fall from 0.65 to 0.62. Referring to our formula, a change of this size in the dependency ratio would lead to a fall of about 0.7 percentage points of GDP compared to the report's baseline projection. This is a relatively sizeable impact which, taken together with the high degree of uncertainty about future mortality, underlines the degree of uncertainty attached to the report's findings. The report models the impact of slightly higher expectations of life than those assumed in the baseline scenario. Again, the impact is significant but in the opposite direction – an addition to the fiscal burden. Assuming constant costs for older people, improved survival of older people leads to increased Federal expenditure. To summarise, we would suggest that the report severely understates the potential variability of outcomes that could arise from varying levels of future mortality. At the same time, we acknowledge that this potential variability could apply in either direction.

Finally, the report assumes a level of annual net migration of 90,000 persons. In general, this is a reasonable assumption based on past trends, although the Government has recently announced a target for the next four years of around

100,000. Alternative scenarios of 80,00 per annum and 135,00 per annum are used in the report. In the present state of knowledge, this range probably adequately spans the bounds of likely future migration levels. Opposite to fertility, increased migration has its main impact in the shorter term but loses impact in the longer term (after 2042). The fiscal impact of an increase in annual net migration to 135,000, according to our calculations (consistent with the report) would be a fall of about 0.7 percentage points of GDP compared to the report's baseline projection (migration of 90,000).

Productivity Growth Projections

The Report operates on a baseline assumption that labour productivity will grow over the next forty years at 1.75 per cent per year, close to its average rate over the past three decades. A low growth scenario uses the productivity growth of the 1980s, 1.2 per cent per year, whilst a high growth scenario assumes that the two per cent annual growth of the 1990s will continue.

Small changes in annual rates of growth compound to substantial differences over forty years. The three productivity growth assumptions imply that the ratio of output per worker in 2042 to current output per worker will be 1.61, 2.00 or 2.21 according to the low, baseline or high growth scenarios. Taking the baseline demographic and productivity scenarios, it is predicted that the average member of the workforce in 2042 will have to support one third more 'dependents' with double the amount of output.

At first glance, this seems to pose little problem. But this is only the case <u>if the real costs of support for dependents</u> are held constant, that is, if costs rise in line with the Consumer Price Index. In practice, however, the costs of labour-intensive support services depend substantially on the costs of labour. Real wages tend to rise in line with productivity, so there is a tendency for costs to also rise in line with productivity particularly if transfer payments are linked to average wage levels. This assumption has clearly been factored into the projected fiscal effects of varying the projected rate of productivity growth because the high and low productivity growth scenarios are predicted to vary the fiscal burden by less than one quarter of a percentage point of GDP.

If transfer payments and other demographic costs are coupled with wages, the fiscal burden is insensitive to productivity growth. Aged and Disability Pensions are indexed to average weekly earnings. Health, aged care and education services, being labour intensive, are also linked closely to earnings. Thus, there is a very direct and obvious relationship in regard to these costs. Other social security transfer payments, especially those related to families, are linked more to changes in CPI than to changes in earnings. This raises the intriguing situation that, over 40 years, the increase in the living standards of aged pensioners would rise considerably while the living standards of families and those receiving benefits related to unemployment would not rise to nearly the same extent. For example, according to the report's baseline scenario, expenditure on Family Tax Benefit (Parts A and B) would fall from 1.6% of GDP to 0.9%. Furthermore, if the living standards of retired people on fixed incomes did not rise commensurate with earnings, there would be a growing incentive to organise one's affairs in order to be in a position to take the public option of the Aged Pension. All of this is built into the Intergenerational Report's model, but clearly policy

changes would be required to correct the growing anomalies.

According to the report, the largest single contribution to the increased fiscal burden derives from the increased costs of the Pharmaceutical Benefits Scheme (PBS). Here, the main costs involved are the purchase prices from the drug companies, a cost not tied directly to changes in average earnings in Australia. However, given the Intergenerational Report's results, PBS costs must also increase in the model roughly in line with wages. Reduction of the costs of the PBS is a central issue and is addressed later in the report.

Rates of Participation in the Labour Force

The Report's baseline projections of labour force participation assume continuing increases in women's participation – 'limited over the longer term by child-raising and caring activities in which women traditionally play a large part.' (Appendix B, p.71) – and continuing falls in men's participation. The higher participation scenario differs only for men aged 45 to 64, whose full-time participation is assumed to rise by five percent relative to the baseline scenario, as illustrated in Appendix Chart B2 of the report. If this group constitutes approximately one quarter of the workforce, a five per cent rise in their participation increases total participation by 1.25 per cent. We can use Formula (4) to deduce that the effect of this rise in participation would be to decrease the 2041 fiscal burden by around 0.24 points.[2]

The baseline projections are illustrated in Chart B1 of the Report. They show that participation rates for women aged 25 to 44 are predicted to grow much more slowly than they have done over the past twenty years. This slowdown in growth is predicted to result in a 2041 participation rate around 77% for this age group of women, substantially lower than predicted rates for men, and substantially lower than the rate of participation for women that we observe now in France and Sweden.

There are reasons that we might expect participation rates of women to grow faster than the rates assumed in the Report, in particular the rapid rise in female education that has occurred over the past three decades as documented in Table 1. Higher levels of education of women increases both the opportunities and the rewards of employment, contributing to higher rates of participation in the workforce.

Only one quarter of the cohort of women now aged around fifty stayed on to the final years of high school education. Over the next few decades, they will be replaced in the working-age population by young women of whom nearly four-fifths have completed Year 12. This huge increase in educational attainment of young women, achieved over just one generation, has already contributed to substantial increases in labour force participation. It can be expected to continue.

The trend to increased participation is likely to be further enhanced by the fact that 25-34 year old females are participating in the workforce in higher proportions now than in recent decades. A history of participation familiarises people with the world of work, increases their potential earnings, leading to higher participation of that cohort as it moves through its working-life. For these reasons, we consider the

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[2] This is derived as 0.192 x 1.25 = 0.24. The actual figure given in Table 15 of the Report is –0.25 percentage points.

Report's predictions on female participation to be unduly conservative.

Table 1: Women's Education and Labour Force Participation

	Year 12 Female Retention[1]	Labour force participation ten years later
1970	25%	54%
1980	38%	65%
1990	70%	70%
1998	78%	?

1. COLLINS, C., J. KENWAY, and J. MCLEOD (2000): *Factors Influencing Educational Performance of Males and Females in School and Their Initial Destinations after Leaving School* Canberra: Commonwealth of Australia, Ausinfo.
2. Female participation rate of 25-34 age group.

There are also reasons to suspect that the projected labour force participation rates for males in the report are conservative. We consider that there is considerable potential for the future reversal of the falls in labour force participation rates among men aged 45-64 that have taken place since 1970. Labour force participation rates of men in this age group may rise in future because of an increased demand for labour at these ages arising from possible future labour shortages. If male age-specific labour force participation rates remained at their 1998 levels, there would be almost no further growth in the number of male workers aged less than 65 years after about 2015. Furthermore, those reaching ages 55-64 years in future will be better educated. They will also be less likely to have worked in occupations or industries that have been declining because of restructuring. Older workers will be better placed in a knowledge-based economy. Future cohorts at these ages will also be less likely to have commenced work by age 15 and less likely to have worked in heavy manual labour. They will also have had more experience of changing jobs during their working life and of on-the-job retraining. Finally, because they will have had their children later in life and because children will be dependent upon parents for longer periods as they pursue education options, many men in their 50s will still have dependent children. Thus, without any changes in policy, the chances of considerably increased labour force participation for men in the 45-64 age group is high. The participation rate of Australian men in these ages is low by OECD standards, but the report only projects a marginal increase over the next 40 years. With healthier ageing, employment beyond age 65 could also be a future prospect.

Beyond these social changes, over such a long period of time, it is well within the bounds of policy potential that incentives for early retirement that pervade the system at present will be reversed and become incentives to remain in the labour force. National variations in levels of early retirement have been shown to be due primarily to differences in the incentive system. Countries that provide strong incentives to retire early have early retirement.

Variations in this parameter, labour force participation, have a double impact on the

fiscal burden because an individual shifts from being a dependent to being a tax-paying worker – expenditure falls and revenue increases. As a high alternative, we consider what would happen to labour force participation if (i) the participation rates for men aged 35 and over rose over the next 30 years to what they were in Australia 30 years ago and (ii) also over the next 30 years, participation rates for Australian women rose to the participation rates of Swedish women today. Under these assumptions, by 2042, the labour force participation rate of 15-64 year olds would have risen to 82.8 per cent as compared to the report's baseline projection of 75.2 per cent. This represents a 10.1 per cent increase. This would be equivalent to a 1.94 fall in percentage points of GDP in the fiscal burden, a very sizeable fall. This is without any allowance for increased participation at ages 65 years and over. In summary, we consider that the report is extremely conservative in regard to future levels of labour force participation. We also consider that this analysis indicates the importance of policy initiatives that increase work incentives as opposed to early retirement incentives or disincentives for women to return to the labour force after having children.

Unemployment Rates

The Report's baseline scenario assumes an unemployment rate of five per cent in 2041. Table 15 suggests that were the rate to be one point higher or lower, the fiscal burden would change by only 0.07 points. This is much less than the impact of 0.19 percentage points predicted by our Formula (4).

The report's discussion on page 63 mentions "higher GDP growth in the shorter term" and "lower Government spending, particularly on unemployment allowances." But their decomposition of the fiscal effects of lower unemployment (Table 15) only puts a figure in the category of "other payments to individuals". The impact of lower unemployment on the growth of real GDP is incorrectly stated as "neg" – probably because it has been copied from the panel above referring to the impact of <u>higher</u> unemployment. Moreover, the impact of a change in unemployment on the fiscal burden should not be modelled through effects on output growth, but through its effects on the ratio of the number of workers to the number of dependents – as in our analysis.

Our Formula (4) does not take account of the reduction in unemployment benefits that would result from a fall in the rate of unemployment. Our prediction that a one point fall in the unemployment rate would reduce the fiscal burden by 0.19 points should be supplemented, to be consistent with the Report's analysis, with their estimate of the impact on transfer payments. That implies that a one point fall in the unemployment rate, relative to the baseline prediction for 2041, would reduce the fiscal burden by 0.26 points. A one point rise in unemployment would raise the fiscal burden by the same amount.

Costs of dependents

Table A1 of the report divides the projections of increased Commonwealth spending across the range of people-related Commonwealth programs. Of the total increased fiscal burden of 5.3 percentage points of GDP by 2042 (baseline projection), fully 5.2

percentage points derives from the health and aged care programs, and 2.8 percentage points from the Pharmaceutical Benefits Scheme alone. Thus, management of costs in health and aged care programs is a vital component of the reduction of the fiscal burden. We do not have access to all of the relevant information in this area and so we are not in a position to make alternative estimates. Only broad comments are possible.

There are two aspects to PBS expenditure, usage rates and net costs to government per script. On usage, the state of knowledge in Australia at present is low. This is indicated by the fact that the report is unable to apply age and sex specific costs of pharmaceutical usage in its calculations. This is a severe limitation given that usage is highly likely to be related to age and sex. Projection of future usage is also something of a lottery. There is a vast variety of trends and policies that can influence the end result. These include:

- over-prescribing and policies to reduce it, especially in particular settings such as nursing homes and private hospitals

- the use of cost effectiveness criteria in the listing of drugs in the PBS

- some drugs will no longer be required if life styles change or cures are found (stomach ulcers, smoking)

- some drugs will be used longer as people live longer and as prolonged use of the drug gains favour (anti-depressants, cholesterol lowering)

- improved diagnostics could reduce the prescription of inappropriate drugs but increase the prescription of new drugs

- the use of education programs, information networks and quality assurance processes in the prescription of drugs.

Outcomes related to most of the trends listed above can potentially be influenced by public policy, and some are part of present policy, but the report makes no attempt to be specific in this regard. We conclude that there is a very high degree of uncertainty attached to the projection of future usage of drugs through the PBS. The report provides a misleading degree of certainty about this.

In regard to the net costs to government per script, the two components are the purchase price paid to the manufacturer and the level of the payment made by the user. Purchase prices have been increasing substantially over the past 15 years or so as new drugs come on to the market to replace old drugs that were negotiated at the much lower price that applied in the past. It is this rise in expenditure that is factored into the report's projections. However, as the point is reached that all drugs in the PBS are part of the new, higher pricing arrangement, annual increase in expenditure would be expected to slow down. This may be part of the explanation of the relatively smaller increases in recent years. On the other hand (and in this area, there is always an 'on the other hand'), as ever more 'must use' drugs appear, expenditure would tend to increase.

The report implicitly presumes that the present pricing culture that exists between governments and drug companies will continue for the next 40 years. This is again an area characterised by immense unpredictability. The level of payment made by the user is a matter for government policy. The issue here is the extent to which the cost of drugs is absorbed by the user or by the society in general. There seems to be

bipartisan agreement that some level of co-payment by the user is desirable for both cost and efficiency reasons. The question is about the level of the co-payment.

Unlike other areas of expenditure, the report does not produce the annual series of trends in the costs of the PBS. Other information suggests that the annual fluctuations are very great indeed making any prediction of the future highly uncertain (Health Expenditure Bulletin, No. 17, Australian Institute of Health and Welfare).

There may also be an argument that there is an interaction between pharmaceutical costs on one hand and medical and hospital costs on the other hand. The argument put by the American economist, Tim Smeeding, is that with better diagnosis and better drug prescription, medical and hospital costs will fall. The opposite interaction is sometimes suggested as well, that reduction in medical over-servicing will reduce over prescription of drugs. The report makes no allowance for these interactions or, for that matter, for any other interactions between programs.

The projections of the report are also affected by changes in the costs of diagnosis and of surgical procedures. For example, there are questions about policy being brought to bear upon over-servicing in pathology and radiology and the impacts that this may have. This is yet another area in which the past may not necessarily be a good predictor of the future. Also, at a more general level, the promotion of healthier life styles will lead to healthier people and, especially, healthier older people. While evidence is mixed, it does seem that people are living healthier longer, that is, age for age, people today are healthier than they were in the past. This may lead to reduction in some health costs, particularly medical and hospital costs.

All in all, there is a vast degree of uncertainty associated with the future costs of health and aged care programs. This high degree of uncertainty is not given due respect in the report.

The report's costings of other programs, that is, government payments and education programs, are likely to be more reliable than those related to health because they are based on age and sex specific calculations and the cost components are better known and more predictable.

Summary

We would suggest that the report's outcomes are weighted to the pessimistic side. The grounds for this suggestion are that the report:

- understates the effect of a fall in unemployment

- greatly underestimates the potential for future increases in labour force participation rates

- presents an unduly certain picture of the levels of future costs of health and aged care.

It is important to note that even if strong productivity growth does little to relieve the fiscal burden, which is the case if *per capita* costs rise in line with earnings, it does raise the living standards of the dependent population through the increased value of pensions and services to the aged.

Furthermore, even if the Report's baseline predictions are realised, and the tax burden does rise by five points, real after tax incomes are still predicted to grow strongly.
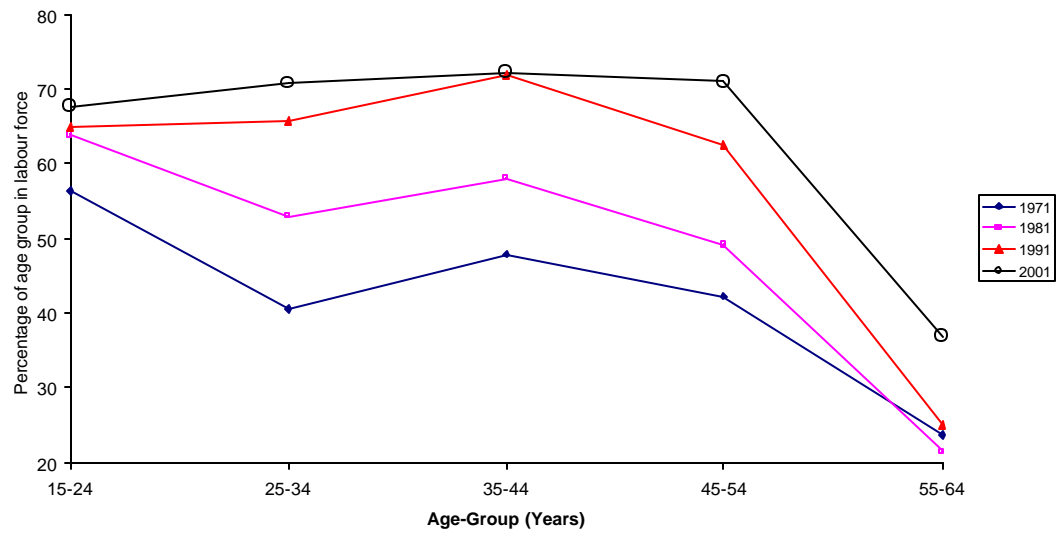
Taking the baseline case where annual productivity growth averages 1.75 per cent, the combined effect of productivity growth and rising taxation will deliver real after-tax incomes in 2041 that are eighty-five percent higher than they are today.[3] This does not compare particularly unfavourably with the one hundred per cent rise in after-tax income that would occur should the tax rate be held constant. Should productivity growth maintain the two per cent annual growth rate of the 1990s, the rises in predicted real after-tax incomes are one hundred and five percent or one hundred and twenty percent, with or without the five point rise in taxation, respectively.

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[3] These estimates are based on an estimate that total taxation currently accounts for twenty-seven percent of GDP.

FIGURE 1

**Labour Force Participation Rate by Age - Females - Australia -
1971 to 2001 (August)**

Source: ABS