Redistribution, the Welfare State and Lifetime Transitions

Rachel Lloyd, Ann Harding and Neil Warren

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Director: Ann Harding

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National Centre for Social and Economic Modelling
University of Canberra ACT 2601 Australia
170 Haydon Drive Bruce ACT 2617
Phone +61 2 6201 2750 Fax +61 2 6201 2751
Email natsem@natsem.canberra.edu.au
Website www.natsem.canberra.edu.au
Abstract

This study examines the distribution of household income, and of selected taxes and benefits in Australia, for households at different stages of the lifecycle in 2001-02. The overall finding is that there is substantial redistribution from younger households without children in the first half of their lifecycle to older retired households in the second half of their lifecycle. For couples with children, the significant amounts of cash and non-cash benefits received are almost completely offset by direct and indirect taxes paid.

Author note

Ann Harding is Professor of Applied Economics and Social Policy, University of Canberra, and Director of the University’s National Centre for Social and Economic Modelling (NATSEM). Rachel Lloyd is a Principal Research Fellow with NATSEM. Professor Neil Warren is Associate Director (Research), Australian Taxation Studies Program at the University of NSW.

Acknowledgments

The authors would like to gratefully acknowledge the input provided to the original modelling project on which these results were based by other NATSEM staff, particularly Richard Percival, Annie Abello, Elizabeth Taylor, Ben Phillips, Anthea Bill, Rebecca Cassells and Carol Farbotko. We would also like to acknowledge the hard work of those who build and maintain the STINMOD model, particularly Gillian Beer and Matthew Toohey.

General caveat

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1 Background

Much research and public debate in Australia over the past two decades has focussed upon whether the distribution of income has become more or less equal. The measure of ‘income’ used in such studies has varied, ranging from ‘wages and salaries’ or ‘private income’, to the somewhat more comprehensive ‘disposable income’ measure (which equals total income minus income taxes paid), to the even more comprehensive ‘final income’ measure (which includes the value of non-cash benefits received, such as public health and education services) (eg. ABS, 2003, 2001; Saunders, 2001; Harding et al, 2004a).

While the distribution and redistribution of income between rich and poor at a particular point in time is of great interest, the redistributive impact of the welfare state across the lifecycle is also of major importance. Indeed, recent media articles have suggested that taxes should be cut in Australia. The greater the apparent extent of ‘churning’ as a result of welfare state programs, the more desirable many consider the option of cutting both taxes and benefits.

This paper examines the distribution and redistribution of income at different lifecycle stages in 2001-02. This study is a fiscal incidence study, in that it attempts to estimate the impact of selected outlays and taxes upon the income distribution of households. This means that government outlays are attributed as a benefit to individual households, while taxes are attributed as a burden upon individual households.

Allocating the incidence of taxes and benefits is neither a straightforward nor an uncontroversial task. For example, fiscal incidence studies typically assume that the value of one year of primary education in a government school to a household containing such a primary school student is the cost to government of providing that year of education (Harding, 1984, ABS 2001a). But the cost to government may or may not approximate the value that a particular household places upon education, health or other government provided or subsidised services.

Similarly, the incidence of taxes is not uncontroversial. For example, is a tax levied upon companies shifted to consumers (via higher prices) or to shareholders (via lower dividends)? Equally, a tax collected in a jurisdiction such as Queensland (one of the states of Australia) may actually be incident upon international or interstate visitors, rather than upon Queensland households themselves.

Despite these continuing issues, fiscal incidence studies are now well established in both Australia and overseas (e.g. Harding, 1984 and 1995, Johnson et al, 1995, Raskall and Urquhart, 1994, Warren 1997). In particular, the Australian Bureau of Statistics (ABS) has now published a series of Fiscal Incidence Studies, which build upon the
results in its Household Expenditure Surveys, and these now act as a benchmark for many Australian studies (1992, 1996, 2001).

2 Overview of methodology

It is important to appreciate that not all taxes and benefits are included within the scope of this study and that the results are heavily dependent upon the quality of the household sample survey data used (Siminski et al, 2003) and our assumptions about the usage and cost of government services. The benefits and taxes included are generally restricted to those that are relatable to particular types of households and/or household expenditure – or for which we had data to determine their incidence.

Household income is increased directly by benefits in the form of regular cash payments, such as the age pension and family payments, and indirectly by government expenditures such as those on health and education. On the other hand, household income is reduced by personal income taxes (direct taxes) and by indirect taxes passed on in the higher prices households pay for goods and services (ABS, 2001, p.3). Like the ABS fiscal incidence studies, this study excludes some government taxes and expenditures. On the revenue side, we have not considered such Commonwealth taxes as corporate taxes or any of the taxes levied by the various Australian states and territories. On the outlay side, we have not considered spending on such areas as defence, public safety, transport and communications.

In summary, this paper estimates the distribution in 2001-02 of:

- The major social security cash transfers and family payments;
- Income tax and selected income tax rebates and concessions, including the private health insurance rebate;
- The Commonwealth 10 per cent Goods and Services Tax (GST) plus excises on tobacco, alcohol, crude oil and LPG; and
- Health, housing, welfare and education non-cash benefits.

The methodology used in this study is described in more detail in Appendix A to this paper. The core data source used in the simulation of the 2001-02 world is the 1998-99 Household Expenditure Survey (HES) unit record file released by the Australian Bureau of Statistics. This file contains a snapshot of the demographic, labour force, income and other characteristics of the Australian population in 1998-99. It is important to note that the scope of the survey is restricted to those living in
private dwellings and excludes those living in remote and sparsely settled areas. We made some adjustments to this file to update the private incomes, housing costs and population weights from 1998-99 to 2001-02 levels.

### 2.1 Income concepts used

A number of income concepts are used in this study, and these are summarised in Box 1. Original or private income is the most narrow definition of income used in the study, and comprises income from such sources as wages, superannuation, investments and own business. Adding direct government cash benefits to private income gives gross income, which is the income concept used in many ABS studies (e.g. ABS, 2001). Disposable income is derived by subtracting direct (or personal income) taxes from gross income. Disposable income, after adjustment for family or household size through use of an equivalence scale, is the income concept used in the majority of recent Australian studies of income distribution and financial disadvantage (Harding et al, 2001, Saunders, 2001). The ABS also used this income concept for ranking Australians in its latest Income Distribution Survey (2003).

While the payment of income tax is taken into account during the calculation of disposable income, no account is taken of the payment of other taxes or of the services that governments provide that bestow a personal benefit upon households – generally a service that they would otherwise have to buy themselves. Disposable income may thus provide an incomplete picture of the relative living standards of different types of families (Harding, 1995, p. 71). Despite providing only a partial picture, disposable income is widely used in Australian income distribution studies because the requisite data are readily available in the ABS national income surveys.

Broader income measures are used in this study. From disposable income we have subtracted selected Commonwealth indirect taxes – that is, GST and excises. To this post-tax income, we have added the value of indirect government benefits – that is, the estimated value of health, education, welfare and housing services provided by government. The resulting income measure is termed final income and, in essence, this is our most comprehensive measure of the relative economic well-being of households.

Of the total Commonwealth, State and local government taxation revenue in 2001-02, this study allocates taxes of about $124 billion, or 57 per cent of total government revenue. Of total government expenditure of $262 billion in 2001-02, this study allocates benefits of about $139 billion, or 53 per cent of total government spending. In dollar terms, more benefits than taxes were thus allocated in the study so that, on average, benefits exceed taxes. This is also the case in the ABS fiscal incidence study, and the ABS argues that: ‘This outcome is not significant in itself, as there is not a
direct correspondence between the level of government benefits provided to any sector and the means used to finance those benefits’ (2001, p.3). However, it should be kept in mind in interpreting the results that we have allocated slightly more benefits than taxes.

**Equivalent incomes**

When attempting to compare the economic well-being of households of differing size and composition, it is important to use equivalence scales. For example, it would be expected that a household comprising four people would need more income than a single person household if the two households were to enjoy the same standard of living. There is not, however, agreement internationally or nationally about exactly
how much more income the four person household requires than the single person household to achieve the same standard of living. Like the recent ABS income distribution study (2003), our study uses the modified OECD equivalence scale. In our study, this means that we have given the first adult in each household a weight of 1.0, second and subsequent adults a weight of 0.5 points, and dependent children a weight of 0.3 points. The relevant cash income measure is then divided by the sum of the above points, to calculate the household’s equivalent income.

It is not clear that equivalence scales designed for use with cash measures of economic well-being can be used when non-cash benefits (such as the value of education consumed) are included within the definition of income (Radner, 1994). The equivalence scales applied to cash income measures are intended to capture the economies of scale that occur when individuals share households (e.g. a couple living together require only one bed and fridge rather than the two required if they lived separately). Following Smeeding et al, we have assumed that there are no economies of scale in non-cash income (1993, p. 240). Most of the output tables in the following section show the total indirect (or non-cash) benefits received by different types of households. For our final measure of economic well-being, ‘equivalent final income’, we have added together equivalent post-tax income and per-capita indirect benefits income, following previous practice in studies of this kind (Smeeding et al, 1993, p. 241; Harding, 1995, p. 77).

3 Patterns of lifecycle redistribution

For this analysis Australian households have been classified into eight lifecycle groups, ranging from being young and single, through to being couples without children, then couples with children of progressively older ages, followed by ‘empty nesters’ in their late 50s, then by older couples of age pension age and, finally, TO being old and single. Household who do not fall into any of these categories (e.g. sole parents or single persons in their 40s and living by themselves) have been excluded from this analysis. Thus, in contrast to our earlier studies that have included all households (Harding et al, 2004a), only 56 per cent of all Australian households are included within the ambit of this study. Nonetheless, the results provide interesting insights into what might be regarded as a typical lifecycle profile.

Private income, from such sources as wages and salaries, self employment and investments, shows great change over the lifecycle (Figure 1 and Table 1). Private income is relatively low for young single households, reflecting both the impact of study and unemployment, as well as the lower average wages earned by those at the
start of the human capital accumulation process. At least in financial terms, the good times arrive when individuals settle down with a partner but have not yet made the further leap into parenthood. At this stage of the lifecycle, private income reaches a high level of about $1390 a week, reflecting the ability of both partners to work without the restrictions imposed by young children.

After the arrival of children, private income declines by about one-fifth, to just under $1100 a week for those couples with an eldest child aged less than 5 years. Despite apparent changes in attitudes over the past few years, it is still overwhelmingly women who give up paid work when their children are young (Harding et al, 2003, p.6). Private income then increases steadily as the age of the oldest child increases, resulting from the increasing likelihood of the primary carer undertaking part and then full-time work as the children reach school age, as well as the gradual wage increases that typically occur with increasing age and experience. Of the eight lifecycle groups considered here, the lifecycle peak for private income is for couples whose eldest dependent child is aged 15 to 24 years, at almost $1400 a week.

Interestingly, private income then drops sharply to $684 a week, as couples aged 55 to 64 years enter the ‘empty nest’ phase of their life. This dramatic fall in income is largely due to voluntary or involuntary retirement, with about one-third of men and more than one-half of women having left the labour force by the time they are aged 55 to 59 years. At ages 60 to 64 years, more than half of all men and three-quarters of all women have left the labour force (Kelly et al, 2004). Lifting these participation rates is one of the great challenges facing government as the impact of population ageing upon government budgets starts to bite.

Private income again drops sharply as the official retirement age of 65 years is reached, falling to about $290 a week for retired couples without children. Finally, private income is again lower, at around $150 week, for those who are single and living by themselves in their old age. This is partly due to such single people being older on average than those living in retired couple households, with average income tending to decline with advancing age after retirement.

While Figure 1 clearly traces the lifecycle profile of market or private income, it also shows the strong impact of the welfare state programs included within the ambit of this study and shown in the ‘final income’ columns. The figure demonstrates that, generally, the welfare state programs act to redistribute income away from the early part of the lifecycle, when incomes are relatively high and family responsibilities are low, to the later part of the lifecycle, when incomes are low and needs are high. As Figure 1 suggests, and as confirmed in our earlier work, couples with children are on average only marginal gainers from the operation of the Australian welfare state, with their relatively high receipt of education and health indirect benefits being largely offset by their direct and indirect tax payments (Harding et al, 2004a).
Table 1  Estimated distribution of household income, taxes and benefits, by lifecycle group, 2001-02

<table>
<thead>
<tr>
<th></th>
<th>Single person &lt; 35 yrs</th>
<th>Couple with children, eldest &lt; 5 yrs</th>
<th>Couple with children, eldest 5 to 14 yrs</th>
<th>Couple with children, eldest 15 to 24 yrs</th>
<th>Couple no children, head aged 55 to 64 yrs</th>
<th>Couple no children, head aged 65 yrs +</th>
<th>Single person aged 65 yrs +</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average $ per week</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Private Income</strong></td>
<td>630.8</td>
<td>1390.6</td>
<td>1095.4</td>
<td>1160.0</td>
<td>1395.6</td>
<td>684.5</td>
<td>287.6</td>
</tr>
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<td><strong>Direct Benefits</strong></td>
<td>32.6</td>
<td>8.8</td>
<td>108.1</td>
<td>127.7</td>
<td>108.4</td>
<td>112.3</td>
<td>272.1</td>
</tr>
<tr>
<td><strong>Gross Household Income</strong></td>
<td>663.4</td>
<td>1399.4</td>
<td>1203.5</td>
<td>1287.7</td>
<td>1504.0</td>
<td>796.8</td>
<td>559.7</td>
</tr>
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<td><strong>Direct Tax</strong></td>
<td>148.5</td>
<td>317.2</td>
<td>268.5</td>
<td>276.7</td>
<td>339.9</td>
<td>132.7</td>
<td>32.2</td>
</tr>
<tr>
<td><strong>Disposable Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>514.9</td>
<td>1082.3</td>
<td>935.0</td>
<td>1011.0</td>
<td>1165.1</td>
<td>664.0</td>
<td>527.5</td>
<td>308.1</td>
</tr>
<tr>
<td><strong>Selected Indirect Taxes</strong></td>
<td>60.0</td>
<td>109.8</td>
<td>105.3</td>
<td>116.8</td>
<td>135.5</td>
<td>90.6</td>
<td>70.1</td>
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<tr>
<td><strong>Post-tax Income</strong></td>
<td>454.9</td>
<td>972.5</td>
<td>829.7</td>
<td>894.2</td>
<td>1029.6</td>
<td>573.4</td>
<td>457.4</td>
</tr>
<tr>
<td><strong>Selected Indirect Benefits</strong></td>
<td>69.1</td>
<td>98.4</td>
<td>184.2</td>
<td>380.1</td>
<td>455.8</td>
<td>152.2</td>
<td>276.7</td>
</tr>
<tr>
<td><strong>Total Education Benefits</strong></td>
<td>26.9</td>
<td>34.9</td>
<td>22.6</td>
<td>221.1</td>
<td>312.1</td>
<td>2.1</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Non-Government Schools</strong></td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>46.2</td>
<td>66.4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Government Schools</strong></td>
<td>0.0</td>
<td>1.0</td>
<td>0.7</td>
<td>153.3</td>
<td>157.1</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>All Schooling</strong></td>
<td>0.0</td>
<td>1.0</td>
<td>8.3</td>
<td>210.1</td>
<td>231.1</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Tertiary</strong></td>
<td>26.9</td>
<td>33.8</td>
<td>14.3</td>
<td>10.9</td>
<td>81.0</td>
<td>2.1</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Total Health Benefits</strong></td>
<td>33.7</td>
<td>61.6</td>
<td>106.2</td>
<td>110.6</td>
<td>111.8</td>
<td>109.7</td>
<td>196.5</td>
</tr>
<tr>
<td><strong>Hospital Care</strong></td>
<td>15.9</td>
<td>24.4</td>
<td>39.0</td>
<td>35.5</td>
<td>34.2</td>
<td>45.3</td>
<td>116.7</td>
</tr>
<tr>
<td><strong>Medical Clinics</strong></td>
<td>10.0</td>
<td>19.3</td>
<td>37.2</td>
<td>37.5</td>
<td>37.8</td>
<td>31.8</td>
<td>38.1</td>
</tr>
<tr>
<td><strong>Pharmaceuticals</strong></td>
<td>1.3</td>
<td>2.0</td>
<td>5.6</td>
<td>8.2</td>
<td>8.0</td>
<td>14.4</td>
<td>25.0</td>
</tr>
<tr>
<td><strong>Other Health Benefits</strong></td>
<td>5.4</td>
<td>10.7</td>
<td>18.3</td>
<td>22.7</td>
<td>22.3</td>
<td>10.7</td>
<td>10.5</td>
</tr>
<tr>
<td><strong>PHI Rebate</strong></td>
<td>1.1</td>
<td>5.4</td>
<td>6.3</td>
<td>6.8</td>
<td>9.5</td>
<td>7.5</td>
<td>6.2</td>
</tr>
<tr>
<td><strong>Housing Benefits</strong></td>
<td>3.7</td>
<td>0.1</td>
<td>1.6</td>
<td>2.1</td>
<td>0.3</td>
<td>2.9</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Total Indirect Welfare Benefits</strong></td>
<td>4.8</td>
<td>1.9</td>
<td>53.8</td>
<td>46.4</td>
<td>31.5</td>
<td>37.5</td>
<td>78.0</td>
</tr>
<tr>
<td><strong>Child Care Benefits</strong></td>
<td>0.0</td>
<td>0.0</td>
<td>17.7</td>
<td>11.9</td>
<td>1.5</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Soc Sec &amp; Welfare Services</strong></td>
<td>4.8</td>
<td>1.9</td>
<td>36.1</td>
<td>34.5</td>
<td>30.0</td>
<td>37.5</td>
<td>78.0</td>
</tr>
<tr>
<td><strong>Final Income</strong></td>
<td>524.1</td>
<td>1070.9</td>
<td>1013.9</td>
<td>1274.3</td>
<td>1485.3</td>
<td>725.6</td>
<td>734.1</td>
</tr>
<tr>
<td><strong>Total Benefits Allocated</strong></td>
<td>101.7</td>
<td>107.2</td>
<td>292.3</td>
<td>507.8</td>
<td>564.1</td>
<td>264.5</td>
<td>584.8</td>
</tr>
<tr>
<td><strong>Total Taxes Allocated</strong></td>
<td>208.5</td>
<td>426.9</td>
<td>373.8</td>
<td>393.5</td>
<td>474.4</td>
<td>223.4</td>
<td>102.3</td>
</tr>
<tr>
<td><strong>Net Benefits Allocated</strong></td>
<td>-106.7</td>
<td>-319.7</td>
<td>-81.6</td>
<td>114.3</td>
<td>89.7</td>
<td>41.1</td>
<td>446.5</td>
</tr>
<tr>
<td><strong>Equiv. Disposable Income</strong></td>
<td>514.9</td>
<td>721.5</td>
<td>481.9</td>
<td>459.7</td>
<td>473.6</td>
<td>442.7</td>
<td>351.6</td>
</tr>
<tr>
<td><strong>Equiv After Housing Disposable Inc</strong></td>
<td>391.9</td>
<td>605.5</td>
<td>394.0</td>
<td>392.8</td>
<td>422.9</td>
<td>396.8</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Equiv. Final Income</strong></td>
<td>524.1</td>
<td>697.5</td>
<td>481.4</td>
<td>496.1</td>
<td>527.7</td>
<td>458.4</td>
<td>443.3</td>
</tr>
<tr>
<td><strong>Persons per HH</strong></td>
<td>1</td>
<td>2</td>
<td>3.4</td>
<td>4.25</td>
<td>4.18</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Adults per HH</strong></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Number of Dependants per HH</strong></td>
<td>0</td>
<td>0</td>
<td>1.42</td>
<td>2.25</td>
<td>2.18</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total No of Households '000</strong></td>
<td>338.8</td>
<td>382.4</td>
<td>414.7</td>
<td>871.2</td>
<td>475.5</td>
<td>377.1</td>
<td>616.6</td>
</tr>
</tbody>
</table>

Note: The values within the table are household averages (that is, the results in the table are household weighted rather than person weighted, so as to make interpretation of the results more comprehensible). The only exception to this are the three italicised equivalent income rows, where the results are person weighted to take account of the differences in average household size between the lifecycle groups.
Figure 1: Estimated original and final income by lifecycle group, 2001-02

There is clearly substantial lifecycle redistribution occurring through the tax and benefit programs considered in our study. Which programs have the greatest redistributive impact over the lifecycle? Figure 2 gives an overall impression of the impact of the different tax and outlay programs over the lifecycle. For both singles and couples without children and aged less than 35 years, direct cash benefits received are on average very low — and indirect benefits in the form of health, education and welfare services are also relatively low. For younger singles, while direct and indirect taxes paid are lower than for many of the other lifecycle groups — mirroring the relatively low income and thus expenditure of younger singles — they are still sufficient to more than offset the benefits received. This results in younger singles being net payers, paying out about $110 more in taxes than they receive in benefits each week. For younger couples without children, both their direct and indirect tax payments are roughly double those of younger singles, reflecting their higher incomes. As their direct and indirect benefits received are relatively low, such couples are major net payers, paying out about $300 more in taxes each week than they receive in benefits.

Once children arrive, both direct and indirect benefits increase sharply, reflecting the Family Tax Benefits paid to those with children and the public subsidies to health and education services. Couples whose oldest child is aged less than five years are still net payers, with the direct and indirect taxes paid exceeding benefits received by
about $80 a week. In contrast, couples whose oldest child is aged between 5 and 24 years are both net gainers from the welfare state programs considered in this study. The amount of taxes paid by such couples is as high or even higher than that paid by couples whose oldest child is less than five years, reflecting their higher incomes. This profile of net gain is, therefore, mainly driven by the substantial increase in indirect benefits received – and this in turn is driven by the higher average number of children in these households. Thus, while couples with an eldest child aged less than five years have on average only 1 ½ dependent children in each household, those with an eldest child aged 5 to 14 years have on average 2 ¾ dependent children in their household (Table 1). Health, education and welfare indirect benefits are thus commensurately higher.

Couples with no children with a head aged 55 to 64 years receive much more in direct benefits than the similarly childless couples aged less than 35 years. This reflects the higher rate of receipt by older couples of unemployment and disability related payments, such as Mature Age Allowance, Disability Allowance and Newstart Allowance. As noted earlier, labour force participation rates at this age are already low, although they decline further once the age of 65 years is reached. The taxes paid by this group on average roughly match the benefits received, so that they are marginal net gainers, at about $90 a week.

For couples with a head aged 65 years and over, direct benefits increase sharply, reflecting the receipt of Age Pension once official retirement ages are reached. Indirect benefits also increase sharply, particularly reflecting the deterioration in health and increasing usage of health services that occurs with advancing age. Tax payments by retiree couples are relatively low, showing the impact of both their low income and the tax-advantaged status given to older Australians. As a result, retiree couples are substantial net gainers, consuming about $450 more in benefits each week than they pay in taxes. Single retirees are also substantial net gainers, for the same reasons as retiree couples.
3.1 Indirect benefits

As one might expect, indirect (or non-cash) benefits are particularly significant for those with children and older Australians. There is a pronounced lifecycle pattern to indirect benefits, as Figure 3 illustrates. Younger Australians aged less than 35 years and without children are on average consuming relatively little in health benefits – although it should nonetheless be appreciated that the sum of all of the four health benefits categories shown in Figure 3 still exceeds the value of tertiary education services used. By the time couples have a young child, the average value of tertiary education used halves and the focus of indirect benefits shifts squarely to health.

Once children are old enough to go to school, the very substantial public subsidies for schooling take effect, resulting in school benefits being the single largest indirect benefit received by couples whose eldest children are aged 5 to 14 years. Once the age of the eldest child reaches 15 to 24 years, tertiary education (this time received by the children rather than by the parents) also becomes very important.
During the empty nest phase of the lifecycle, education benefits are almost non-existent, and health benefits are the most prominent. After retirement age, the value of health services consumed rises sharply, with hospital benefits being the single most significant health benefit, followed by medical services and then subsidised pharmaceuticals.

**Figure 3 Estimated indirect benefits received, by lifecycle group, 2001-02**

![Graph showing indirect benefits by lifecycle group](image)

### 3.2 Direct and indirect taxes

Looking again at the dollar value of direct and indirect taxes shown in Figure 2, it is notable that direct taxes exceed indirect taxes at every stage of the lifecycle until old age. Only for those households with heads aged 65 years and over are indirect taxes of greater magnitude than direct taxes.

As already shown in Figure 2, couples with and without children pay the highest taxes on average, due to their higher incomes (and thus expenditures). While the *dollar* value of taxes paid by young couples without children, for example, can be two to four times higher than that of older couples, tax payments expressed as a
percentage of gross income are more evenly distributed across the lifecycle. Figure 4 indicates that Commonwealth indirect taxes (that is, the GST and excises) amount to much the same proportion of the gross income of the first five lifecycle groups, at about nine per cent. Couples without children and with heads aged 55 years and over pay a somewhat higher proportion of their gross income in Commonwealth indirect taxes, at about 11.5 to 12.5 per cent. The proportion drops back to 9.9 per cent for single aged households. This would appear to be largely due to basic foods, which are GST free, being a higher proportion of this group’s household budget than for couples without children and with heads aged 55 years and over (Harding et al, 2003).

Not surprisingly, given the progressive nature of the income tax system, income tax as a percentage of gross income shows great variation across the lifecycle, being higher prior to retirement. For much of the lifecycle the average income tax rate ranges around 22 per cent, dropping to just under 17 per cent for empty nesters and about six to seven percent for those aged 65 years and over.

Looking at the combined Commonwealth direct and indirect taxes as a percentage of gross income, the proportion again hovers around 31 per cent for much of the lifecycle, dropping to 28 per cent for empty nesters and about 17 to 18 per cent for those aged 65 years and over.

**Figure 4  Estimated taxes paid as a percentage of gross income, by lifecycle group, 2001-02**
4 Income across the lifecycle

The initial part of Section 3 showed that private income was highest during the middle part of the lifecycle and when children were older or not present. However, these values can give a misleading impression of relative living standards at different stages of the lifecycle, because they take no account of the number of people dependent upon the income of the household – that is, how many people each household has to feed, clothe and house. To take this into account, we move here to looking at equivalent income measures.

We look first at equivalent disposable income, which is the amount of cash income each household has left to spend each week after receiving cash transfers and paying income tax and after adjustment for differing household composition. This suggests that the lifecycle period of being part of a (usually two income) younger couple before the arrival of children is one of the most affluent periods of the lifecycle (Figure 5). It must be emphasised here that we are only looking at couples without children who have left the parental home and formed their own household. Both for this lifecycle group and the other ‘single persons aged less than 35 group’, those young people who remain in their parental home are not considered in this analysis.

After taking account of needs, equivalent disposable household income drops sharply with the arrival of children. Comparison of Figure 5 with Table 1 reveals that the marginal increases in disposable income for couples with children as the age of their oldest child increases is fully absorbed by the growing number of children per household — so that equivalent disposable income is on average relatively stable across the three ‘couple with children’ lifecycle groups shown in Figure 5. In other words, the cash income of the household increases as the age of the oldest child increases, but this is fully offset by the increase in the number of mouths supported by that income.

Equivalent disposable income then begins to fall as couples enter the empty nest stage and begin to leave the labour force, falling further again as the official retirement age is reached.

Figure 5 also traces the impact of the welfare state taxes and outlays considered in this study on relative living standards across the lifecycle. For couples whose oldest dependent child is aged 5 to 24 years, equivalent final income is higher than
equivalent disposable income. The key difference between these two measures is indirect benefits, principally the publicly subsidised health and education services consumed by these households. Once the official retirement age is reached, the difference between equivalent disposable and equivalent final income is even greater, reflecting the high use of health services by older Australians. One of the most notable features of Figure 5 is the way the welfare state programs considered in this study operate to equalise living standards over much of the lifecycle, with equivalent final income ranging between about $450 to $530 on average for the seven of the eight lifecycle groups examined here.

Figure 5 Estimated equivalent disposable and equivalent final income, by lifecycle group, 2001-02

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1 This may initially seem at odds with our earlier conclusion that, on average, couples with children are paying roughly the same in taxes as they are receiving in benefits. However, the ‘equivalent disposable’ income line shown in Figure 5 is after the income taxes paid by households and after the receipt of cash transfers. Thus, it is not looking at the same issue.
5 Conclusions

This study assesses the distribution and redistribution of household income and selected taxes and benefits across the lifecourse in 2001-02. Fiscal incidence studies such as this rely on sample survey data and make assumptions about the patterns of receipt and value of various types of benefits and about the payment of selected types of taxes. We faced numerous difficulties with both the sample survey data underlying the study and with the benchmark data used to estimate the taxes received by government and the outlays expended by government. It is also important to appreciate that the benefits and taxes included in our study are generally restricted to those that are either relatable to particular types of households or to household expenditure — or for which we have data to determine their incidence. While we have imputed income tax, the Goods and Services Tax and excises in 2001-02, we have not imputed the incidence of such other taxes as capital gains tax, company tax, indirect taxes levied by the States and Territories, and superannuation tax concessions. Similarly, while we have imputed the usage and value of government health, education, housing and welfare outlays that relate directly to particular types of households, we have not included other government outlays such as spending on defence or communications. With these caveats in mind, our study uses a similar methodology to that of other fiscal incidence studies, including those by the Australian Bureau of Statistics (2001) and the UK Office for National Statistics (2003).

Our previous work has shown that there is extensive redistribution between richer and poorer households due to the operation of the Australian system of taxes and benefits (Harding et al, 2004a). This is not unexpected, as this is an intended consequence of the programs of taxes and services included within our study. Our welfare state system has been designed to assist those in our community who are most in need of support. It has also been designed to assist households through the course of their lifecycle, by redistributing income from periods of relative affluence during the lifecycle to periods of relative greater need, such as when there are children or in retirement.

Our study suggests that the welfare state programs included within this study do result in this ‘smoothing’ of resources across the lifecycle. The results indicate that younger people without children in the first half of their lifecycle effectively cross-subsidise older people without children in the second half of their lifecycle. While there is also redistribution from those without to those with children at any given age, overall couples with children pay in taxes roughly the same as they receive in cash and non-cash benefits.
There is on-going debate in Australia about whether taxes should be reduced, and some may interpret the above results for couples with children as supporting the case for reduced churning during the middle period of the lifecycle, swapping substantial cuts in income taxes for substantial cuts in publicly provided services. However, we wish to emphasise that it is important in this debate not to lose sight of the redistribution by the welfare state from richer to poorer Australians, as well as from younger to older Australians. To illustrate this, Figure 6 shows the estimated private and final incomes of couples with children in Australia, divided into national income quintiles.2 As the figure illustrates clearly, couple with children households in the bottom two income quintiles have their incomes very substantially increased by the direct and indirect benefits provided by government. Conversely, couple with children households in the top income quintile pay much more in taxes than they receive in benefits, resulting in redistribution to other, less affluent households.

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2 That is, the bottom quintile here does not refer to the the bottom 20 per cent of Australians living in couple with children households. Rather, the bottom quintile is the poorest 20 per cent of all Australians, irrespective of the type of household that they live in. Thus, the bottom quintile in Figure 5 represents the results for those couple with children households who belong in the bottom national income quintile. To calculate the quintiles, Australians have been ranked by the equivalent disposable income of their household, using the new OECD equivalence scale (see Harding et al, 2004 for further details of the methodology).
Figure 6  Estimated private and final incomes of couple with children households, by income quintile, 2001-02

<table>
<thead>
<tr>
<th>Quintile of equivalent disposable income</th>
<th>Average per household - $ per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest 20%</td>
<td>Private Income: 132  Final Income: 0</td>
</tr>
<tr>
<td>Second Quintile</td>
<td>Private Income: 851  Final Income: 124</td>
</tr>
<tr>
<td>Middle 20%</td>
<td>Private Income: 1010  Final Income: 144</td>
</tr>
<tr>
<td>Fourth Quintile</td>
<td>Private Income: 1144  Final Income: 1394</td>
</tr>
<tr>
<td>ALL</td>
<td>Private Income: 1270  Final Income: 1209</td>
</tr>
</tbody>
</table>
References


Australian Economic Indicators, Cat. No. 1350.0, ABS, Canberra, pp. 33–55.


A Appendix: Overview of Methodology

A.1 Data source

The core data source used in the simulation of the 2001-02 world is the 1998-99 Household Expenditure Survey (HES) confidentialised unit record file released by the Australian Bureau of Statistics. This file contains a snapshot of the demographic, labour force, income and other characteristics of the Australian population in 1998-99. It is important to note that the scope of the survey is restricted to those living in private dwellings and excludes those living in remote and sparsely settled areas. We made adjustments to this file to update the private incomes and housing costs of households to estimated 2001-02 levels, using such inflators as average weekly earnings and housing consumer price indexes. We also adjusted the population weights from 1998-99 to 2001-02 levels to allow for the four per cent growth in population that occurred over that period. We did not reweight the entire 1998-99 survey to account for possible changes in, for example, labour force and demographic status.

A.2 Taxes and cash transfers

In July 2000 Australia introduced a complex tax-mix shift towards indirect taxes, accompanied by extensive social security reforms. As a result, the declared values of these items in the 1998-99 Household Expenditure Survey were redundant. Accordingly, we had to impute the rules of the income tax and social security systems to estimate the income taxes paid by and the transfers received by each of the households in the HES file. This aspect of the modelling employed NATSEM’s STINMOD model, which is a long-established static microsimulation model of the Australian tax and transfer system used by government departments for budget policy formulation (Bremner et al, 2002).

The income tax system in Australia in 2001-02 consists of a tax threshold of $6000 and three further marginal tax rate thresholds above that, with the top marginal rate of 47 cents in the dollar cutting in at $60,000 of taxable income. There is also a Medicare levy of 1.5 per cent of taxable income, making the effective top marginal tax rate 48.5 per cent. There are no social insurance levies on top of this, with the Australian system of means-tested cash payments being financed from general revenue. Australia has a wide range of means-tested payments payable to the aged, unemployed, disabled, sick, sole parents, and families with children. These payments are essentially based on income and assets at the time of payment and,
unlike the European social insurance schemes, do not bear any relation to earlier earnings received while in the workforce.

To simulate the impact of the GST and excises we calculated the average tax rates applying to each of the 500 plus detailed expenditure categories contained within the HES for each household. Taxes initially borne by government or business are assumed to be shifted ultimately to consumers, either residents or non-residents. (This differs from the ABS fiscal incidence studies, which only allocate to households those indirect taxes that can be directly assigned to households through their final consumption expenditure.) However, like the ABS, we do not match national accounts estimates of GST and excises collected exactly, because of scope exclusions in the HES and under-statement of tobacco and alcohol consumption by households within the HES.

A.3 Indirect benefits

Moving now to indirect benefits, which consist of goods and services provided free or at subsidised prices by the government, our allocation of indirect benefits was restricted, as in the ABS studies (2001), to those arising from the provision of education, health, housing, and welfare services. In most cases, the estimation of the value of an indirect (or non-cash) benefit to households within the HES essentially consists of the following three steps:

- Identifying those households who are likely to use the service in question and calculating how often they use it within a year;
- Estimating the cost to government of that usage; and
- Multiplying the ‘amount of usage’ by the ‘cost to government’ to derive the annual estimated value then imputed to the household.

Education benefits

The ABS included on the 1998-99 HES unit record file its estimate of the value of each of the following education services consumed by each household in 1998-99: preschool, primary and secondary school (divided into government and non-government schools), university, ‘technical and further education’, ‘tertiary education not elsewhere classified’ and ‘other education’. We inflated each of these values from their 1998-99 level to 2001-02 estimates, using the best inflator that we could find (generally the percentage change in average benefit per student, derived from such sources as Government Finance Statistics (GFS) and the Ministerial Council on Education, Employment, Training and Youth Affairs).
Health benefits

Health benefits are allocated for hospital care, medical clinics, pharmaceuticals, and other health benefits. Hospital care covers expenses relating to acute care institutions, medical clinics cover community health services, pharmaceuticals covers pharmaceuticals, medical aids and appliances, and other health benefits covers public health services, health research and health administration n.e.c.

In our study we calculated new estimates of the value of hospital and medical services and pharmaceuticals consumed. This was either because the program rules had changed so much between 1998-99 and 2001-02 that it was no longer appropriate to use the ABS estimates for 1998-99 or because we wished to use a more sophisticated imputation methodology.

The likelihood of using hospital and medical services was calculated from the 2001 National Health Survey (NHS), and based on such predictive characteristics as age, gender, income quintile and whether the household had private health insurance. Private and public hospital usage was modelled separately, as the latter are far more costly to government.

The likelihood of using prescribed pharmaceuticals was calculated from the 1995 National Health Survey (because the 2001 NHS did not include information on all pharmaceuticals). The Australian Pharmaceutical Benefit Scheme provides highly subsidised pharmaceuticals to ‘concession card holders’ (generally families and singles on low incomes), with a co-payment per script for this group of $3.50. For other Australians the patient meets the first $21.90 per script and the government meets the full cost of pharmaceuticals listed on the Scheme above this level. We modelled eligibility for concession cards in detail.

To estimate a value for ‘other health benefits’ we simply inflated the appropriate ABS estimate by the change in ‘other health’ shown in government finance statistics from 1998-99 to 2001-02, after adjustment for changes in population size.

Private Health Insurance Rebate

One of the innovative features of this study was the simulation of the distributional impact of the Private Health Insurance (PHI) Rebate in the 2001-02 world. The PHI rebate was not simulated by the ABS in its 1998-99 Fiscal Incidence study, as it was only introduced in 1999 (ABS, 2001). First, the probability of a person having private health insurance was estimated (from the 2001 NHS unit record file) by state, age, sex, income unit type and equivalent gross income unit income quintile. These likelihood estimates were then applied to persons in the HES and used to adjust the numbers in each sub-group who held insurance to match the proportions in the 2001...
NHS. We then predicted whether the entire household were likely to be covered by private health insurance or just that individual, using administrative data. We then estimated the average amount paid for such private health insurance (before the rebate), from the amounts indicated on the HES and Private Health Insurance Administrative Council administrative data. Finally, the estimated amount of the PHI rebate was then calculated as 30 per cent of the pre-rebate cost of insurance.

**Housing Benefits**

Government expenses relating to housing largely involve building new houses for rent at subsidised cost. These expenses were not allocated amongst HES households in the ABS FIS study because “it is difficult to identify likely future recipients of the benefits” (2001, p. 51). Instead, benefits were allocated to households in government rental accommodation according to the value of their rent subsidy. The value of their rent subsidy was taken to be the difference between the rent paid by the households and the estimated value of private market rent according to the State, region, type of dwelling and number of bedrooms. To derive estimates for 2001-02 we multiplied the public housing benefits calculated by the ABS in the HES by the change in the housing Consumer Price Index (CPI) by State over the 1998-99 to 2001-02 period.

**Other Welfare Services**

These services exclude cash transfers (dealt with above) and comprise various publicly funded services to assist those who are disabled, aged, have children and so on. In 1998-99 the ABS calculated average indirect benefits for different types of benefit recipients, by dividing indirect welfare GFS expenses by the number of recipients of benefits. Different levels of benefit were calculated for persons receiving age, veterans affairs, and disability support pensions, and family allowance and parenting payment. Average benefits were allocated to persons receiving similar direct government benefits. Household benefits were the sum of household member benefits. To capture the change in these benefits between 1998-99 and 2001-02, we inflated by the change in total indirect welfare GFS expenses between the two years.

**Child Care**

Expenditure on child care assistance was treated separately by the ABS, and allocated to households with children under 12, according to household income and the probability that the children were attending eligible child care. While there was an apparent major change in child care assistance between 1998-99 and 2001-02 with the GST tax reform package, the rules of the old schemes were effectively largely replicated in the new Child Care Benefit. Accordingly, we simply inflated the child
care benefits shown in the ABS FIS by the change in total spending on child care benefits derived from the relevant departmental Annual Reports (FaCS, 1999, 2002).