Examining Recent Changes in Income Distribution in Australia

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Abstract

This paper analyses recently released ABS data on the distribution of income and examines how inequality has changed since 1994-95 and since the election of the Howard Government in 1995-96. While real disposable incomes increased across the distribution, income inequality has also increased since 1994-95, particularly between 1996-97 and 1999-2000. Over the entire period from 1994-95 to 2000-01, mean income in the top quintile increased by $111 a week, more than eight times the increase of $13 a week in the lowest quintile. Since the Howard government came to office, the estimates indicate that almost half (47.3 per cent) of the total increase in disposable income was received by those in the top quintile – implying that half of the income generated by economic growth has been of no benefit to the bottom four-fifths (in income terms) of the population. Comparison with earlier research also shows that income inequality has, in some respects, increased more rapidly since the mid-1990s than during the 1980s.

1. Introduction

Speaking at the 2001 ACOSS Congress, Prime Minister John Howard noted that income inequality, selected as a focus for the Congress, 'is a subject deserving of ongoing debate and attention and advocacy within the Australian community'. He went on to argue that 'contrary to media and other claims, recent ABS figures show that there has been no significant change in income inequality since 1994-95. That is not to say

that the present disposition is perfect but simply to make the observation that the frequently repeated mantra that the rich are getting richer and the poor are getting poorer is not borne out by the most recent ABS figures' (Prime Minister, 2001).

In July 2003, almost two years after the PM's comments, the Australian Bureau of Statistics (ABS) released the results from its most recent *Survey of Income and Housing Costs* (SIHC) (ABS, 2003a). The report provides a detailed analysis of the Australian income distribution in 2000-01 – the latest year for which such data are currently available – and an analysis of changes in inequality since 1994-95. These new income distribution statistics can thus be used to assess whether the Prime Minister's claims about distributional stability remain valid and if not, how the recent change compares with that experienced in earlier periods. A supplementary issue relates to what the latest estimates reveal about the distributional impact of the GST.

2. Changes in Inequality in the 1990s: Previous Studies
Prior to the release of the new figures, there was some disagreement among researchers about how much – or even whether – the income distribution had changed in the second half of the 1990s. Reflecting on the evidence presented to the *Towards Opportunity and Prosperity* conference in 2002, Dawkins and Kelly (2003) have suggested that while all studies agree that the incomes of those at the top of the distribution have grown fastest, different studies suggest different conclusions regarding the overall extent of distributional change. They also drew attention to work produced by ABS which showed no statistically significant increase in inequality between 1995-96 and 1997-98 (ABS, 2002a).

Other commentators, including Treasury Head Ken Henry (2002) have also noted how different studies of income distribution using different data sources have produced different conclusions. He notes that the SIHC data showed no significant change in either income shares or the Gini coefficient between 1994-95 and 1999-2000. Although he acknowledged that data from the Household Expenditure Survey (HES) indicated an increase in income inequality between 1993-94 and 1998-99, he was sceptical about the analysis by NATSEM that produced that result (Harding and Greenwell, 2001). There were, as it turned out, problems with the HES data released at that time (see below), but these have since been corrected.[1]

Henry also notes that it is difficult to determine whether or not the change in inequality is bad, since there is no consensus on what the desirable level of inequality is. He goes on to argue that:

> Policy makers are very likely to believe that the market lib-
> eralising reforms of the past couple of decades in Australia
> have contributed to rising average incomes, and that the in-
> come gains have been widely shared. Is anybody seriously
> suggesting that those reforms should be reversed, in a cer-
> tain expectation of significantly reduced average incomes
> and the highly speculative hope of a more egalitarian dis-
> tribution of a smaller cake? (Henry, 2002: 32)

Henry's portrayal of the choice as being between economic reform and growing inequality, or no reform and a (possible) reduction in inequality is a gross over-simplification. Those who favour more equality are not arguing against either reform or increased incomes, even though it is sometimes convenient to imply that they are. One can support more redistribution on many grounds other than envy for those who have most (Hughes, 2001). The real issue is how the gains from reform are shared, including through the operation of the tax and transfer systems. The size of the cake matters, but so too does how it is divided up.

In contrast to the somewhat confusing picture of distributional change described above, my own research (Saunders, 2001) and that of my colleagues Peter Siminski and Kate Norris (2003) suggests that inequality has risen over the latter half of the 1990s, if only slightly. My study – produced originally with the assistance of ABS as a contribution to the centenary issue of the *Year Book, Australia* – indicates rising inequality of equivalent (need-adjusted) disposable incomes between 1994-95 and 1999-2000. Over this period, both the Gini coefficient and the P90/P10 percentile ratio increased (although the former was not statistically significant). Siminski and Norris, using Census data (again analysed with the assistance of the ABS), show that the Gini coefficient of equivalent gross household income increased between 1996 and 2001 in every State/Territory, and by 1.5 per cent nationally.[2]

3. Data Limitations and Presentational Issues
3.1 Data problems
Problems with the ABS data have prevented researchers from resolving the different findings on how the income distribution has changed since the mid-1990s. Furthermore, beginning in 1994-95, a new data collection methodology was introduced with the SIHC to replace the income distribution statistics that were previously collected in a series of special surveys conducted every five years or so. Because of the changes introduced with the SIHC, there is a break in the income distribution statistics in 1994-95, which makes it difficult to assess how the distribution of

income has changed over periods that span that year.

Changes have also been made to the methods used to benchmark the survey data to external aggregates and to weight the data so that they are representative of the total in-scope population. The SPRC has been working with the ABS to identify these changes and quantify some of their effects, and a paper documenting this work has recently been published – see Siminski et al., (2003).

The ABS itself has expressed concern over aspects of the SIHC data in a series of recent articles. A decline in the coverage of cash welfare transfer incomes reported in the SIHC after 1997-98 was first identified in an article released in 2002 (ABS, 2002b). This article also described problems with the internal processing of some of the HES data for 1998-99, which resulted in an understatement of welfare incomes (particularly veterans' benefits). In combination with other problems relating to the imputation of missing business income, it was suggested that mean income in the bottom quintile was under-estimated by around 11 per cent in the 1997-98 HES – enough to seriously bias the measurement of inequality (ABS, 2002b: 7).

Additional problems were identified in the ABS report *Measuring Australia's Progress* released in 2002 (ABS, 2002b). These relate to the fact that many households in the lowest decile reported expenditures that were well in excess of their incomes, leading the ABS to query the reliability of the reported income data and to question the usefulness of income as an indicator of economic well-being for those who report very low (sometimes negative) levels of own business income. Reflecting these concerns, the ABS decided to base its indicators of economic disadvantage on changes in the real equivalent incomes of households in the second and third deciles.[3]

In a recent report on the SIHC-related data quality issues, the ABS (2003b) examined the coverage of welfare incomes by comparing them with administrative data from the Department of Family and Community Services on how much was spent. The analysis confirmed that the welfare income coverage rate – which had been stable at around 85 per cent between the first SIHC in 1994-95 and 1997-98 – had declined to 79 per cent by 2000-01 and that the survey response rate had also fallen from 90 per cent to 85 per cent between 1997-98 and 1999-2000. A new method has been introduced to scale up the numbers receiving welfare benefits (but not the average amount of benefit received) since 1999-2000 to re-establish the historical average of 85 per cent coverage, and the latest data (analysed below) reflect this adjustment.

3.2 Presentational issues

The ABS has also introduced 'a range of methodological improvements in household income distribution and measurement' (ABS, 2003a: 27) designed to bring the data in line with international best practice in the field of income distribution studies. These changes make the presentation of income distribution data consistent with the recommendations of the "Canberra Group" (of which ABS is a member), an expert group on household income statistics operating under the auspices of the United Nations Statistical Commission (Expert Group on Household Income Statistics, EGHIS, 2001).

This is a welcome initiative, which implements procedures proposed by leading researchers working in the field (e.g. Atkinson, Rainwater and Smeeding, 1995) and adopted by international agencies like the OECD. However, it means that the new statistics embody assumptions about household equivalence and income sharing that may not be appropriate. Replacement of the 'old OECD scale' by the modified scale, for example, affects the equivalent income rankings of families with children markedly (because the new scale gives less weight to the needs of children) and it is important to be aware of this. In my view, it would be preferable for the new figures to be presented along with those showing the distribution of income between households before the equivalence adjustment is made (see below).

A key aspect of these new methods is that they focus on deriving the implications of the distribution of income among *households* for the living standards of the *individuals* who live in them. A household in a given level of economic distress will be of greater concern if it is larger, since that distress affects more individuals, so the new method describes the distribution of income among individuals. However, this clearly depends upon how the total income of the household in which individuals live is divided up. Clearly, it would not be appropriate to assign all of the income to every individual, since some degree of income sharing must take place. But to assume that household income is simply divided equally among all individuals (assigning per capita income to each person) ignores the fact that there are economies of scale in living costs ('two can live more cheaply than one').

Lying in-between these two alternatives is the notion of the equivalent income of the household, which is derived by applying an equivalence scale to total household income, where the scale measures the estimated needs of the household relative to the needs of a single person living alone. The equivalence scale reflects both economies of scale in household consumption, and the fact that adults have higher needs than children. The equivalence scale is thus a slightly more complex version

of the equal division of income adjustment, but the underlying principle is the same.

The equivalent income approach assumes that resources are shared among household members according to their needs, an assumption that has been criticised by those who argue that intra-household resource sharing reflects power relations that are heavily influenced by gender. This is a limitation of the whole approach that warrants more research into the determinants of income distribution *within* the household.

Once the equivalence adjustment has been made, the distribution is represented by a ranking of individuals according to the equivalent disposable income of the household in which they are living.[4] The degree of inequality in the income distribution is then described by a series of standard indicators, including the share of total income received by each quintile (or decile), the mean incomes of each quintile (decile), the income levels (or percentiles) that separate them, the Gini coefficient and the P90/P10 percentile ratio.

When interpreting the statistics on these measures (see Table 2 below), it is important to bear in mind that the incomes shown refer not to 'real world dollars' but rather to 'equivalent dollars' that have been adjusted for differences in household need.[5] Obviously, because the equivalence adjustment involves dividing actual income by the equivalence factor for each household, the adjustment produces a decline in the incomes of all households except single person households.

Thus, for example, the equivalence scale used by ABS is the 'modified OECD scale' that assigns a value of 1.0 to the first adult in the household, 0.5 to each other adult (aged over 15 or over) and 0.3 to each child (aged under 15). The modified OECD scale thus implies that a household consisting of two adults and two children would have a total equivalence score of 2.1. Assuming that household disposable income is $630 a week this implies that the equivalent income of each individual in the household is equal to 630/2.1 = $300, or 47.6 per cent of actual household income. Note that the level of equivalent income is higher than the per capita figure of $157.50 (= $630/4), reflecting the economies of scale in living costs and the lower costs of children compared with adults.

It is clear from this discussion that the extent of the income decline that results from the equivalence adjustment varies with the size and composition of the household. Data reported in Appendix 2 of the ABS report bear this out (ABS, 2003a: 42). Thus, while overall mean household disposable income in 2000-01 was $791 per week, mean (person-weighted) equivalent disposable income was only $469, a reduction of 40.7 per cent. For couple households with dependent children only, the

decline is even greater (55.6 per cent) when moving from $998 (original income) to $453 when the equivalence adjustment is applied.

4. Changes in Inequality since 1994-95

The previous section provides an overview of some of the changes in data collection and presentational methodology that have taken place since the data collection method was changed in the mid-1990s. Since the first SIHC was conducted in 1994-95, the picture that emerges from the surveys since then is one in which the weight of the evidence has gradually been shifting as new data have become available. This is shown in Table 1, which documents how the official (ABS) summary of the distributional trend has evolved from one of 'no significant change' up until around the middle of 2002, to more recent acknowledgement that 'some possible rise' in inequality has occurred since the mid-1990s.[6]

Table 1. The Evolving Official Account of Distributional Change Since the mid-1990s

Source	Release Date	Period Covered	Summary
Income Distribution 1999-2000 (Cat. No. 6523.0)	February 2001	1994-95 to 1999-2000	'While the alternative measures show a significant difference in the extent of inequality in the income distribution when compared to gross income, they give the same picture of no significant change in the level of inequality in the period since 1994-95' (p. 6)
Mapping Australia's Progress (Cat. No. 1370.0)	April 2002	1994-95 to 1997-98	'Most of the movements shown have been small and differences across the income distribution are not statistically significant, showing little or no overall change in the level of income inequality among house-holds' (p. 95)
Australian Economic Indicators, June 2003 (Cat. No. 1350.0)	June 2003	1994-95 to 1999-2000	'...relaxing the confidence level to 90% would result in the conclusion that the movements in the Gini and the P20/P50 ratios are also significant, generally present-ing a picture of some possible rise in inequality over the second half of the 1990s.' (p. 13)
Household Income and Income Distribution (Cat. No. 6523.0)	July 2003	1994-99 to 2000-01	'While all the indicators ...rose over the period ... only the increase in the P90/P10 ratio and the decline in the share of total income going to persons with low income are sufficiently large to be regarded as statistically significant at the 95% confidence level. Relaxing the confidence level to 90% results in the increase in the Gini coefficient also being statistically significant. The indicators therefore suggest some possible rise in income inequality over the second half of the 1990s' (p. 10)

It is important to emphasise that this change does not imply that the earlier ABS assessments were at fault. Table 1 covers a period in which *new* income distribution data were becoming available and where the methodology used to present and analyse them was also changing. Not surprisingly, these changes have influenced the findings in ways that challenged the official 'conventional wisdom' on whether or not inequality had changed. The fact that the ABS has been prepared to revise its earlier conclusions as new data and methods have emerged should be seen as a strength of that organisation, not a weakness.

Table 2. Changes in Income Distribution, 1994-95 to 2000-01: Current Weekly Household Equivalent Disposable Income (person-weighted)

	1994-95	1995-96	1996-97	1997-98	1999-00	2000-01	Change 1994-95 to 2000-01	Change 1995-96 to 2000-01
Quintile mean incomes ($2000-01):								
Lowest	167	168	177	175	177	180	+13	+12
Second	269	269	279	280	288	295	+26	+26
Third	372	368	381	388	404	413	+41	+45
Fourth	497	496	507	522	543	555	+58	+62
Highest	792	773	794	832	879	903	+111	+130
All persons	419	414	428	439	458	469	+50	+55
Income level at upper boundary of quintile ($2000-01):								
Lowest	225	224	233	235	241	245	+20	+21
Second	315	313	329	327	342	351	+36	+38
Third	430	424	436	450	467	482	+52	+58
Fourth	576	578	591	602	636	644	+68	+66
Highest	-	-	-	-	-	-	-	-
P90/P10	3.77	3.74	3.66	3.77	3.89	3.97	+0.20	+0.23
Median (P50)	372	367	380	385	405	414	+42	+47
Quintile income shares (%):								
Lowest	7.9	8.1	8.3	7.9	7.7	7.6	-0.3	-0.5
Second	12.8	13.0	13.1	12.8	12.6	12.5	-0.3	-0.5
Third	17.7	17.7	17.8	17.6	17.6	17.7	0.0	0.0
Fourth	23.7	23.9	23.7	23.8	23.7	23.6	-0.1	-0.3
Highest	37.8	37.3	37.1	37.9	38.4	38.5	+0.7	+1.2
Gini	0.302	0.296	0.292	0.303	0.310	0.311	+0.009	+0.015

Source: *Household Income and Income Distribution,* ABS Catalogue No. 6523.0: Table 1

Table 2 provides an overview of changes in the distribution of equivalent disposable income that have taken place between 1994-95 and 2000-01. Over the period, overall mean incomes increased in real

terms, with an average increase of $50 per person (in 2000-01 consumer prices) or 11.9 per cent, on the 1994-95 figure. However, those at the top gained most, mean income in the top quintile rising by $111 a week (or 14.0 per cent), more than eight times as much as the weekly increase of $13 (7.8 per cent) for those in the bottom quintile.

These estimates thus reveal a steady increase in income inequality over the period, particularly since 1996-97. In terms of income shares, the share of the lowest quintile increased between 1994-95 and 1996-97 but has been lower in each subsequent survey conducted since then. The top quintile's share mirrors these changes, declining up until 1996-97 but rising substantially thereafter, particularly between 1996-97 and 1999-2000. Over this period, overall mean income increased by $30, but was static for those in the lowest quintile. In contrast, mean income in the top quintile rose by $105, or 13.2 per cent, and almost all of the income growth at the top since 1994-95 is concentrated in these three years.

In terms of the overall change in inequality, the Gini coefficient increased from 0.302 to 0.311 between 1994-95 and 2000-01, or by 3.0 per cent. In reviewing this change, it should be borne in mind that the Gini coefficient is most sensitive to changes around the modal value of income (Sen, 1997) so that it does not fully capture changes in the incomes of those at the extremes of the distribution which, as Table 2 illustrates, have dominated the changes that have taken place. This is illustrated by the fact that the change in the P90/P10 percentile ratio, at 5.3 per cent, is considerably larger than that of the Gini coefficient.[7]

Whether or not the change in the Gini is *statistically* (as opposed to *socially*) significant can be examined with the assistance of the relative standard errors (RSE's) provided by ABS (ABS, 2003a, Appendix 3). These imply that the change in inequality between 1994-95 and 2000-01) is not statistically significant at the 5 per cent level, although it is (just) at the 10 per cent level. However, the change in the Gini coefficient between 1995-96 and 2000-01 is statistically significant at the 5 per cent level. The ABS has noted that if the data from 1994-95 to 1997-98 and from 1999-2000 to 2000-01 periods are combined, then the change between these two combined periods is statistically significant at the 5 per cent level 'further supporting a conclusion of some increase in inequality' (ABS, 2003a, p. 11).

The extent of the observed change in inequality can be illustrated by calculating what would have happened if, over the period since 1994-95, mean incomes in each quintile had risen by the same percentage amount as mean weekly incomes overall, i.e. by 11.9 per cent. This would have kept the distribution as a whole unchanged, but quintile mean incomes in

2000-01 would have been equal to $187, $301, $416, $556 and $887, respectively. Comparing these hypothetical incomes with the actual quintile means in 2000-01 indicates that those in the top quintile would have been around $16 a week worse off, while all the other quintiles would have been better off, by between $1 and $7 a week. The inverse of these differences indicates how rising inequality has benefited each quintile.

The figures are much the same if the above thought experiment is applied to the period since the Howard Government came to office in 1995-96, although the picture is more pronounced because inequality fell between 1994-95 and 1995-96. It is also worth noting – using a technique applied by Paul Krugman (1994, Chapter 5) to the US experience – that over the period since 1995-96, almost half (47.3 per cent) of all of the income produced by a growing economy was received by those in the top quintile. This implies that almost half of the economy-wide increase in income generated by economic growth under the Howard Government was of no benefit to the bottom four-fifths of the population.

Over this shorter period, if the distribution had remained at its 1995-96 level, quintile mean incomes in 2000-01 would have been $190, $304, $416, $561 and $874, respectively. Comparing again these hypo-thetical incomes with the actual quintile means in 2000-01 indicates that those in the top quintile would now have been around $29 a week worse off, but all other quintiles would have gained. In this case, those in the bottom quintile would have gained by around $10 a week, while the 'Howard Battlers' in quintiles two and three would have received an average gain of around $6 a week – enough to give a significant boost to the living standards of lower-income families.

These examples illustrate the potential that has existed over this period for the federal government to improve the living standards of those at the bottom of the income distribution by putting a break on the large increases that have gone to those at the top. The calculations are only hypothetical, but they illustrate that the potential to redistribute income to those who need it most (recall that the equivalence adjustment ensures that those at the bottom have lowest incomes relative to need) has not been exploited. This reflects a deliberate choice not to act to redistribute income on the part of those who have had the power to bring about dis-tributional change.

Critics will argue that the increase in inequality was necessary to gen-erate the increased income that has taken place since the mid-1990s, and that removing income from those at the top would have weakened the in-centives that generate income and thus undermine economic growth. Re-ferring back to Ken Henry's comments presented earlier, we cannot sim-

ply change how the cake is divided up without taking account of changes in its overall size. The key issue is how large these latter changes are, but this is a topic about which very little is currently known.

However, while there may be something in this argument, it is difficult to believe that other factors such as macroeconomic policy and microeconomic reform generally have not been more important determinants of Australia's recent growth rate. The view that the increase in inequality has been the *only* (or even the primary) cause of Australia's economic growth thus seems highly implausible, lending weight to the argument that Australia could have chosen less inequality if it had wanted to.

5. Sensitivity Analysis

Income distribution researchers have developed techniques for assessing the sensitivity of the observed changes in inequality to variations in some of the assumptions and procedures that underlie them. It is important to address this issue because it allows the robustness of the findings to be established and provides a method for determining whether or not inequality has increased (Atkinson, 1970).

However, these methodologies apply to a specific set of income distribution data, whereas the changes introduced by ABS in its latest income distribution publication (described above) call for another approach to the sensitivity issue. In particular, it is of interest to examine the impact of two recently introduced changes on the findings reported above. These two changes relate to:

- The replacement of an annual income measure by current (weekly) income (which was introduced when the SIHC commenced in 1994-95); and

- Use of the modified OECD equivalence scale to derive equivalent income and the associated switch from household to person weighting of the distributional data (introduced in the latest publication – ABS, 2003a).

5.1 Annual versus current income

The ABS income distribution surveys (SIHC and its predecessors) collect information on both current (weekly) income and annual income (received over the previous financial year). However, since the introduction of the SIHC, more emphasis has been given to current income, which now forms the basis of the estimates presented in official ABS

publications. This is despite the recommendation of the EGHIS that 'the accounting period to be used for income distribution analysis should be one year' (EGHIS, 2001: 32). To be fair to ABS, however, the EGHIS also proposed that all results be accompanied by 'robustness assessment reports' and the latest ABS report provides a detailed analysis of results using both income measures.[8]

In conceptual terms, annual income is often argued to be the preferred measure because it minimises the short-term fluctuations in weekly income and thus provides a more reliable indicator of economic status. However, this argument is not entirely convincing because the choice of a year is essentially arbitrary and similar arguments can be made to support either longer periods, extending up to permanent income over the life cycle, or shorter periods, over which low income can impose severe hardship on those who must endure it. Economic theory gives no clear guidance on which period is ideal and the best approach is to experiment with a variety of alternatives and see what difference it makes.[9]

There are, however, a number of practical considerations that favour the use of annual income. First, income tax (and the Medicare levy) is assessed on the basis of annual income and the disposable income measure thus only strictly applies to annual income. Furthermore, when the ABS collects some components of income, it does so on an annual basis since this is the period for which most records are kept. This is particularly relevant in relation to income from self-employment, own business and some forms of investment income.

Annual income thus tends to rate higher than current incomes in terms of both coverage and internal consistency (ABS, 2003a, p. 56), and elements of the weekly income figures are derived from reported annual incomes. Against this, the information on current income is more up to date, since it refers to income in the period immediately before the survey, whereas there is a one-year lag in the reporting of annual income.[10] Another advantage with using current income is that it can be directly compared with the reported characteristics of the household, whereas annual income may reflect the presence (or absence) of current members when family composition changes over the course of the year.

With no clear guidance from either the conceptual or practical arguments, the best that can be done is to look at what both measures imply and to draw conclusions about the robustness of results on this basis. This is particularly important when, as described above, there has been an apparent change in the underlying trend in income distribution. This can be done with information presented in Appendix 5 of ABS (2003a), and Table 3 reproduces the results shown in Table 2 on an annual in-

come basis – although for ease of comparison, the estimates themselves refer to average weekly income over the year.

Table 3. Changes in Income Distribution, 1993-94 to 1999-2000: Annual Household Equivalent Disposable Income Basis (person-weighted)

	1993-94	1994-95	1995-96	1996-97	1998-99	1999-00	Change 1993-94 to 1999-00	Change 1995-6 to 1999-00
Quintile mean incomes ($2000-01):								
Lowest	159	166	171	173	175	179	+20	+8
Second	274	276	280	278	296	300	+26	+20
Third	383	380	386	390	417	419	+36	+33
Fourth	510	512	514	526	559	561	+51	+47
Highest	799	807	821	843	898	917	+118	+96
All per-sons	425	428	434	442	469	475	+50	+41
Income level at upper boundary of quintile ($2000-01):								
Lowest	223	228	234	232	242	248	+25	+14
Second	326	325	330	329	353	355	+29	+25
Third	439	441	442	451	485	485	+46	+43
Fourth	598	599	596	608	649	656	+58	+60
Highest	-	-	-	-	-	-	-	-
P90/P10	4.00	3.89	3.82	3.88	3.99	4.06	+0.06	+0.24
Median (P50)	383	380	385	390	416	420	+37	+35
Quintile income shares (%):								
Lowest	7.5	7.8	7.9	7.8	7.5	7.5	0.0	-0.4
Second	12.9	12.9	12.9	12.6	12.6	12.6	-0.3	-0.3
Third	18.0	17.8	17.7	17.6	17.8	17.6	-0.4	-0.1
Fourth	24.0	23.9	23.7	23.8	23.8	23.6	-0.4	-0.1
Highest	37.6	37.7	37.8	38.2	38.3	38.6	+1.0	+0.8
Gini	0.304	0.302	0.302	0.307	0.312	0.313	+0.009	+0.011

Source: *Household Income and Income Distribution,* Appendix 5, Table A7

In broad terms, the picture of distributional change indicated by the annual income estimates in Table 3 is similar to that shown in Table 2 for weekly incomes. Mean incomes increased in real terms across all quintiles, but by more for those higher up the income distribution. Overall mean income rose by $50 or 11.8 per cent, outstripping the growth in median income of $37 or 9.7 per cent. The annual income Gini coefficient declined slightly up to 1995-96 and then increases markedly up to 1998-99 before leveling off somewhat.

Over the whole period, mean income in the top quintile increases by

almost six-fold more than mean income in the bottom quintile; in the period since 1995-96, the differential in top-to-bottom quintile income growth is twice as high, at twelve-fold. Based on the observed changes in annual income shares, inequality increased between 1993-94 and 1999-2000, and between 1995-96 and 1999-2000. Unlike with the current income figures, however, annual income inequality also increased between 1994-95 and 1996-97.

Use of the annual incomes figures does not therefore cause any change in the earlier conclusion that, although mean incomes were rising across the board, inequality also increased since the mid-1990s, particularly under the Howard Government. This is confirmed by ABS analysis, which indicates that the annual income estimates generally display greater inequality in each year and a more pronounced increase than those based on weekly income. The finding of increasing inequality is thus robust with respect to the accounting period over which income is measured.

5.2 Household versus individual inequality

The rationale for switching from measuring inequality from a household to an individual basis has already been described. The argument relies principally on the idea that individuals matter, so that household income must first be imputed to individuals (through the equivalence scale) and each individual must count equally in deriving the distribution (through the person weighting procedure). Of course, both adjustments influence the shape of the distribution and hence how much inequality exists in any year, as well as how it changes between years. We should thus examine what the distribution looks like before these changes are made as another check on the robustness of the results. This can allay fears that any change observed in the adjusted figures does not reflect those adjustments – some of which (e.g. the choice of which equivalence scale to use) have no firm basis in empirical research.

Table 4 presents estimates of the distribution of household (weekly, current basis) income before any equivalence adjustment is made and before any re-weighting on an individual basis. These estimates are derived directly from the 'raw' figures collected by the ABS. Comparing the estimates in Tables 2 and 4 shows the impact of the equivalence and individual weighting adjustments. It is substantial, as can be seen by comparing the mean incomes shown in the top section of each table. In 2000-01, for example, mean household income is $793 (measured against that year's consumer prices), whereas adjusted mean individual income was only $469. However, mean income does not change uni-

formly by the same proportion, so that the extent of inequality changes, both in any single year, as well as between different years.

Table 4. Changes in Income Distribution, 1994-95 to 2000-01: Unadjusted Household Disposable Income (Current Weekly Basis)

	1994-95	1995-96	1996-97	1998-99	1999-2000	2000-01	Change 1994-95 to 2000-01	Change 1995-96 to 2000-01
Quintile mean incomes ($2000-01):								
Lowest	175	187	189	195	197	197	+22	+10
Second	395	395	411	415	421	426	+31	+31
Third	618	612	636	638	662	672	+54	+60
Fourth	904	899	913	934	967	975	+71	+76
Highest	1549	1505	1562	1604	1688	1696	+147	+191
All households	728	720	742	757	787	793	+65	+73
Income level at upper boundary of quintile ($2000-01):								
Lowest	309	308	320	321	323	332	+23	+24
Second	497	494	517	518	534	535	+38	+41
Third	748	745	760	768	798	816	+68	+71
Fourth	1093	1068	1094	1122	1173	1169	+76	+101
Highest	-	-	-	-	-	-		
P90/P10	6.91	6.76	6.56	6.97	7.26	7.00	+0.09	+0.24
Median (P50)	618	607	637	636	660	671	+53	+64
Quintile income shares (%):								
Lowest	4.8	5.2	5.1	5.2	5.0	5.0	+0.2	-0.2
Second	10.8	11.0	11.1	11.0	10.7	10.7	-0.1	-0.3
Third	17.0	17.0	17.1	16.8	16.8	16.9	-0.1	-0.1
Fourth	24.8	25.0	24.6	24.7	24.6	24.6	-0.2	-0.4
Highest	42.6	41.8	42.1	42.4	42.9	42.8	+0.2	+1.0
Gini	0.377	0.369	0.368	0.374	0.380	0.380	+0.003	+0.011

Source: Unpublished data provided to the author by ABS

This can be seen most clearly by comparing the 2000-01 estimates of the P90 and P10 incomes, and what these imply for the P90/P10 percentile ratio. On the initial (adjusted) basis, the two percentile incomes are equal to $802 and $202 respectively, giving a P90/P10 ratio of 3.97 (Table 2). On an unadjusted basis, the corresponding percentiles are $1484 and $212, respectively, giving a percentile ratio of 7.00 – more than 76 per cent higher than the initial figure. This variation occurs because there is a positive association between household income and household size or equivalence, so that the equivalence adjustment lowers the income of those at the top more than those at the bottom, leading to a lower percentile ratio.[11]

It follows from these observations that both the degree of inequality and its change over time may be different when the unadjusted household-level data are used, and we now examine whether this changes the picture of increasing inequality described earlier. Table 4 indicates a somewhat different pattern of inequality change to that shown in Table 2. The income shares in Table 2 imply that inequality decreased between 1994-95 and 1996-97, but then increased between 1996-97 and 2000-01. In overall terms, as noted earlier, the latter increase outweighs the earlier decrease, leading to an overall increase in inequality between 1994-95 (and 1996-97) and 2000-01.

In contrast, Table 4 implies that inequality fell between 1994-95 and 1996-97, but then increased between 1996-97 and 2000-01. However, the overall direction of change in inequality between 1994-95 and 2000-01 cannot be ascertained unambiguously, because of the nature of the changes that took place.[12] However, it is still the case that inequality increased in the Howard Government period, i.e. between 1995-96 and 2000-01.

In relation to statistical significance of the observed changes in inequality based on analysis of the raw data, the findings mirror those presented earlier for the published adjusted data. Thus, while the change in Gini inequality between 1994-95 and 2000-01 is not statistically significant as before, that between 1995-96 and 2000-01 is significant at the five per cent level. The earlier finding of growing inequality after 1995-96 is thus confirmed by these results.

6. Comparing the 1980s and 1990s

Much has been made in the income distribution research literature about the extent of the distributional shift that took place in the 1980s. Numerous studies (e.g. Economic Planning Advisory Commission, 1995; Harding, 1997) have shown that inequality increased in Australia over the 1980s by a substantial amount, whether assessed relative to the historical (Saunders, 1993) or the international (Atkinson, et al., 1995; Saunders, 2001) experience.

How does the distributional change that has occurred since the mid-1990s compare with that experienced in the previous decade? In trying to answer this question, it is important to take account of the changes in survey methodology that were introduced in 1995. These changes produced a 'break' in the trend series on income distribution between 1989-90 (the last survey available using the old methods) and 1994-95 (the first survey using the new methods), which makes it difficult to establish the longer-run distributional trend.

However, as noted earlier, the SPRC and ABS have been working together to develop methodologies for minimising the impact of these changes under a grant awarded by the Australian Research Council. However, that work is not yet complete – and it is unlikely to overcome all of the differences that exist between the old and new series. Thus, for the moment, we do not have access to a consistent data set that can examine systematically how the income distribution changed between the early-1980s and early-2000s. However, several studies have estimated the change in inequality over the 1980s using a consistent methodology and it is therefore possible to compare the *change in inequality* in the 1980s and since the mid-1990s using reliable and consistent methods.

In an earlier study (Saunders, 1993) I examined changes in income distribution using the same basic methodology that was used to derive Table 2 over the periods 1981-82 to 1985-86 and 1985-86 to 1989-90.[13] Table 5 reproduces these earlier results and compares them with the changes that have taken place over the latest four-year period, i.e. between 1996-97 and 2000-01.

Table 5. Comparing Changes in Income Inequality, 1980s and 1990s
(Shares of equivalent disposable income; person-weighted)

Quintile	1981-82	1985-86	Change	1985-86	1989-90	Change	1996-97	2000-01	Change
Lowest	7.7	7.6	-0.1	7.6	7.3	-0.3	8.3	7.6	-0.7
Second	13.0	12.5	-0.5	12.5	12.0	-0.5	13.1	12.5	-0.6
Third	17.5	17.2	-0.3	17.2	16.5	-0.7	17.8	17.7	-0.1
Fourth	23.6	23.6	-	23.6	23.2	-0.4	23.7	23.6	-0.1
Highest	38.2	39.3	+1.1	39.3	41.0	+1.7	37.1	38.5	+1.4
Gini	0.31	0.32	+0.01	0.32	0.34	+0.02	0.29	0.31	+0.02

Sources: Table 2 above and Saunders (1993: Table 3)

These results support the view that not only has inequality increased in the 1990s, but that some dimensions of inequality have grown *faster* since the mid-1990s than during the 1980s, when far more attention was paid to the change in inequality and far more concern was expressed about it. The overall pattern of distributional change in the late-1990s is very similar to that experienced in the 1980s, with the bottom four quintiles losing out in relative terms to those in the top quintile. For those at the bottom, the declining share of the national income cake has persisted since the mid-1990s but at a *faster* rate than in the 1980s. This is true of both the lowest quintile and the two lowest quintiles combined.

The only area where there is any discernible difference in the pattern of distributional change is in relation to those in the middle (third and fourth) quintiles. Here, the rapidly declining income share experienced particularly in the latter half of the 1980s has been arrested – but the change since 1996-97 is still close to that experienced in the first half of the 1980s. What has happened since the mid-1990s then, is that quintiles three and four have gained relative to the quintiles at either extreme of the distribution. Overall, the evidence confirms that the distribution of income has become more unequal since the mid-1990s by an amount that is at least as great, probably greater, than that experienced over similar time periods in the 1980s.

Why is far less attention being paid to these changes now than a decade or so ago? Three possible explanations come to mind. First, the problems resulting from changes to the ABS surveys have made it difficult to establish the pattern of distributional change in the 1990s with any degree of confidence. Little has thus been made of the issue, on this interpretation, because of uncertainty about what has been happening to inequality. If this is right, then the new data presented and analysed here allow the issue to be re-visited.

The second explanation is that inequality has become less of a concern because of the generalised growth in real incomes since 1994-95 (and before). This explanation seems difficult to reconcile with the view – often expressed by politicians who claim to have a finger on the 'pulse of the nation' – that Australians are still concerned about the 'fair go' and support egalitarian objectives. As noted earlier, the size of the cake matters, but so too does how it is divided up.

The third explanation is that the free market, pro-choice ideology of the Howard Government that has focused on greater equality of *opportunity* has detracted attention away from what has been happening to *outcomes*, as reflected in the changes in income inequality. There is evidence that supports the view that Australians have always been less accepting of the need for redistribution than some other countries (Bean, 1991, Table 5.1) and that over time, they have become somewhat more accepting of inequality (Kelley and Zagorsky, 1999). But there is a big difference between becoming less interested in a topic like inequality and becoming indifferent to it. My sense is that the topic has fallen off the agenda in part because of lack of data, but that this has been reinforced by unwillingness on the part of those in authority to engage with the issue of inequality.

7. The GST and Inequality

Finally, a few comments on what the latest income distribution statistics imply for the impact of the GST, which was introduced in July 2000. Table 2 indicates that real weekly incomes rose at all quintile boundary points (or percentiles) between 1999-2000 and 2000-01, as did the mean incomes of each quintile. The fact that the real (CPI-adjusted) value of income at the 10th percentile increased very slightly, from $200 to $202, suggests that the compensation package was effective in protecting those on low incomes from the regressive price effects of the GST.

However, while there was no decline in the value of the P10 income when adjusted for movements in the *general* level of prices (as captured by movements in the CPI), it does not follow that P10 incomes were maintained in purchasing power terms relative to the specific expenditure patterns of low-income households. The ABS has recently produced an analysis of the differential impact of movements in consumer prices on households with different principal sources of income (ABS, 2001b). It indicates that while the effects (which pre-date the GST) do not differ greatly, there are differences (reflecting the different purchasing patterns of different households), suggesting that an across-the-board adjustment to the CPI will not always be appropriate.

In relation to the impact of the GST on inequality, former Family and Community Services Minister Amanda Vanstone has pointed to the stability in the Gini coefficient between 1999-2000 and 2000-01 as providing evidence that the GST had little immediate distributional impact (Minister for Family and Community Services, 2003). However, although it is true that inequality changed only slightly over this period, there is reason to be more cautious about what the figures imply about the impact of the GST.

The distributional stability referred to by Senator Vanstone was based on the lack of movement in the Gini coefficient. But as noted earlier, the Gini measure of inequality is relatively insensitive to changes at the extremes of the distribution, being heavily influenced by what happens in the middle. Since the main impact of the GST and the associated reforms (including the income tax cuts and compensation measures) was on those with low and high incomes, it would not be expected to lead to a big change in the Gini coefficient.

We need to look at other measures that reflect what is happening at the extremes in order to assess how the GST reforms affected the income distribution. One such measure is the P90/P10 percentile ratio, which did change after the introduction of the GST. In 1999-2000, the year immediately before the GST was introduced, P90 was equal to $777 and P10 was $200, giving a P90/P10 ratio of 3.885. By 2000-01,

the percentiles had increased to $802 and $202 respectively, (all figures are in 2000-01 dollars) and the ratio had risen to 3.970, an increase of 2.2%. On this measure therefore, inequality increased markedly in the year immediately following the introduction of the GST.

The whole tenor of the compensation debate surrounding the distributional impact of the GST focused on the idea that the price rises induced by the GST would have a more adverse effect on those with lowest incomes. If this is true, then the fact that incomes at the P10 level only maintained their ability to purchase goods and services *in general* (as measured by the CPI) suggests that the ability of P10 incomes to purchase the specific items bought by those at the bottom of the income distribution declined after the GST was introduced.

This line of argument suggests that those at the bottom of the income distribution may not have been adequately compensated for the GST-induced increases in the prices of the goods and services they buy. If this is so, these regressive impacts would have reinforced the growing income inequality that the latest statistics now confirm has been present since 1996-97.

8. Concluding Remarks

This paper has used data from the latest ABS *Survey of Income and Housing Costs* (SIHC) to examine whether and how the distribution of income in Australia has changed since the new SIHC methodology was introduced in 1994-95, and since the Howard Government came to office in 1995-96. The estimates show that inequality was declining up until 1996-97 but has been on the increase since then. The robustness of the basic results has been investigated by replacing current (weekly) income by annual income and by seeing what happened to inequality among households rather than individuals. By and large, the trends implied by these alternatives are the same, with the exception of the annual income figures showing an increase in inequality between 1994-95 and 1996-97.

Income inequality has thus been on the increase since 1996-97 although the pattern of change has only clearly emerged with the release of data from the more recent ABS surveys. All of the representations of the data analysed here show increased inequality in the Howard Government years, between 1995-96 and 2000-01. It should, however, be emphasised that the distributions examined refer only to household disposable incomes, i.e. after the receipt of social transfers and payment of income taxes. An important but unanswered question, relates to the role of the tax and transfer systems in influencing the distribution of house-

hold disposable income and how their impact has changed over time.

It is possible that market forces and other factors have been exerting stronger upward pressures on income inequality in recent years that the tax and transfer systems have been unable to offset. Alternatively, taxes and transfers may have exacerbated the existing pressures on inequality, particularly in recent years. We are not currently in a position to identify which of these (or other) arguments is correct, and it will require analysis of the unit record data that is currently being prepared for release by ABS. What those data reveal about the trends described here will be addressed in future research.

Notes

1   SPRC analysis of (corrected) HES data from the two most recent surveys (undertaken by the author and Peter Siminski for the OECD) suggests almost no change in household income inequality between 1993-94 and 1998-99.

2   In a recent paper, Bray (2003) uses census data to show that the Gini coefficient for gross equivalent mean income across statistical local areas (SLAs) increased by 19.4 per cent between 1991 and 2001, and by 11.2 per cent between 1996 and 2001. However, because the Lorenz curves for the different years intersect (possibly reflecting the methods used to derive the underlying distributions), it is not possible to conclude that inequality has increased.

3   The decision by ABS to focus on deciles two and three rather than one has potentially enormous significance for those concerned with the fortunes of those on low incomes, although the change has not yet attracted the attention it deserves.

4   This makes it clear that the distribution is sensitive to the equivalence scale used.

5   An indication of what difference it makes when moving from actual to equivalised dollars is provided in Appendix 2 of ABS (2003a).

6   It is important to note that some of the statements shown in Table 1 that refer to changes over earlier periods remain valid.

7   It should be noted that mean income increased by more than median income, which is another indication that inequality was increasing over the period. This differential also explains why estimates of poverty show a larger increase over the 1990s when the poverty line is fixed to mean rather than median income (Harding, Lloyd and Greenwell, 2001).

8   See the analyses reported in Appendices 2, 4 and 5 of ABS (2003a).

9   This discussion of the time period relates to static cross-sectional household income data, not to the issue of *income dynamics*, which raises a new set of issues of measurement and interpretation.

10 The fact that weekly income is more up to date does not necessarily imply that it is less susceptible to recall error, since most people keep more complete records on annual income (mainly for tax purposes).

11 Many of those in the lowest decile are in fact single person households, which explains why the adjusted and unadjusted P10 figures are so close ($202 and $212, respectively), compared with the much larger difference between the unadjusted ($1484) and adjusted ($802) estimates of P90.

12 Technically, the Lorenz curves for the two years intersect, preventing a clear inequality ranking – see Atkinson (1970).

13 The main differences are that the 1980s estimates are based on the previous year's annual income while those for the 1990s are based on current weekly income and use a different equivalence scale. Neither difference is likely to greatly affect comparisons of how the distribution has *changed* over the two decades.

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